Econometric Evaluation of Education Systems

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Leonardo da Vinci project

“Creating an Observatory on Europe-wide TAQC (Transparency of Academic Qualifications and Competences) for Catching the MOLE (Mobility of Labor in Europe) and Filling in the GAP (Generalized Academic Policy)”

WORKSHOP PROCEEDINGS

Edited by
Paul Rinderu
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INTRODUCTION

Starting from the idea that life-time learning has become a necessity in Europe, that the barriers between institutions and countries not only hinder the access to education and professional training, but it also restricts the efficient utilisation of knowledge and competences already achieved, the decision-makers in the educational policies at European level have asked for the drawing up and implementation of an European Qualifications Framework known as a meta-framework able to consolidate the connections among the teaching staff at national and sector level, to ease and promote transparency, transfer and recognition of the qualifications and competences at European level.

Within this initiative, one of the guidelines of the European Commissions’ policy aims to reform the higher education systems with a view to transform them into more flexible, more coherent and more open systems to the society’s needs capable to respond to the challenges of globalization and the necessity to train and re-train the European labour force. The reforms at this level should enable the universities to assume their role in an Europe of knowledge and bring their firmer contribution to the fulfilment of the objectives formulated by the European Union through the Lisbon Strategy.

Given the specifics at European level, the Commission suggests that the following transformations will be the way to success:

- Removal of geographical and sector barriers among the European universities;
- Guaranteeing autonomy and real responsibility for the universities;
- Assurance of stimulants for the structured partnerships with the business community;
- Assurance of a consistent set of competences for the labour market;
- Cutting of the financial deficits and efficient financing activities from education and research;

1 This introduction is inline with the assumed mission of the Ministry of Education, Research and Youth from Romania and represents the official point of view on this issue.
- Increase of the number of programmes of inter-disciplinary and trans-disciplinary studies;
- Activation of knowledge through the interaction with the society;
- Rewarding the highest level excellence;
- Increase of transparency and attractiveness of the Higher Education European Space.

The development of the Higher Education National Qualifications Framework answers a need felt at European level regarding the access, the progress in the university career, and also the mobility of the students and graduates, at the same time expressing a new outlook, adapted to the current international context, centred on the student. From this viewpoint, one of the fundamental attributes that has to define this complex system is to be intelligible for all the groups of interest, thus becoming an internal and external regulation mechanism of the higher education system.

The external arguments formulated at European level are added the internal ones that could be identified at national level, such as the lack of a coherent qualifications’ organization and classification structure, a relative opacity of the university training system for the economic and social environment and a weaker conformity between the bid and the offer of education and training. All this impose the recognition of the acute necessity to develop a national qualifications system for higher education to allow the correlation with the European one and support transparency, recognition and conformity of the learning outcomes, thus facilitating the mobility of those who learn, as well as the mobility on the trans-national labour market.

Bucharest, 2007
The role of business competencies as supplementing business knowledge: Theoretical framework and empirical evidence from a pan-European study of business graduates and employers

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Introduction

The objective of this paper is to report key findings from a EU-funded research project (Leonardo da Vinci programme) involving nine partners in four different countries: Austria, England, Slovenia and Romania. Among the most important empirical findings from this 2-year research project was that both employers and recent business graduates agree that the development of certain critical competencies during the business education, in addition to acquisition of business knowledge, is considered very important for subsequent success in their careers.

The Project, entitled MISLEM, was designed to address two primary goals: 1) To advance a model or step-by-step procedure for assessing the match between skills and competencies developed by educational institutions and those required by the labor market, and 2) To refine and test meta-level indicators (focused on the labor market linkage) for assessing quality in universities and vocational training institutions (i.e., VETs). Regarding the first objective, project partners intended to offer educational institutions (and Quality Assurance Agencies supporting them) a systematic approach for quality assessment that involved the following key steps:

- Define learning outcomes for business or business-related programs of study, in terms of general and specific skills and competencies;
- Design/Adapt questionnaire for assessing the match between skills and competencies developed in study programs and those actually needed in specific jobs;
- Administer questionnaire to recent graduate and their direct supervisors;
- Analyze and interpret results;
- Aggregate data to generate meta-level quality indicators;
- Create a feedback system for curriculum development.

Concerning the second objective, the MISLEM project aimed to develop and test four labor market quality indicators, measuring the percentage of recent graduate students (and also the percentage of direct supervisors) who believed that the skills and competencies acquired in business study programs are a) actually being used in the workplace and b) considered relevant for future career development; and that c) they are proficient (or capable) in these skills and competencies and d) their current jobs require other types of skills and competencies which are not developed within their study programs.
The project’s rationale was derived from extensive literature review on the topic of quality in higher education and in vocational training institutions which indicated that:

- there is growing acceptance of the idea of measuring ‘learning outcomes’ (and specifically skills and competencies), partly due to greater pressure for accountability, transparency and comparability of educational institutions (e.g., Thompson, 2004);
- Quality indicators are becoming increasingly important in the quality assessment process, because not only they provide specific evidence of the attainment of certain results but also because they can describe the current status of a quality system, quantify and monitor quality objectives (Seyfried, 2002, 2003);
- Transnational Projects involving university partners (e.g., TUNING and TEEP) have already advanced a set of competencies for different fields of study, such as business, engineering, history and medicine (Gonzales & Wagenaar, 2003; http://www.enqa.eu/texts/TEEPHY.htm), but these need to be further refined and tested;
- There is a noticeable need to increase: 1) the input from employers in the process of quality assessment in higher and vocational training institutions, due to the fact that quality assurance processes have been primarily internally-driven (e.g., Danish Evaluation Institute, 2003) and 2) the collaboration between different types of educational institutions (i.e., vocational training and university partners).

Therefore, in order to address these issues, the project focused on the development of learning outcomes (i.e., skills and competencies) for business study programs and also on advancing specific meta-level quality indicators to assess the match of educational institutions curricula with the requirements of the labor market, whilst: combining expertise from universities and vocational training institutions and promoting collaboration among partners from education, industry and government across the four different countries. The nine project partners were the following: FH Joanneum (Higher education partner, Austria), BFI (Vocational Training partner, Austria), BIT (Industry partner, Austria), AQA (Quality Assurance Agency partner, Austria), Aston Business School (Higher Education partner, England), Matthew Boulton College (Vocational Training partner, England) PPS (industry partner, England), University of Primorska (Higher Education partner, Slovenia) and University of Craiova (Higher Education partner, Romania).

The project aimed to deliver results to two primary target groups: 1) Policy-makers in education and 2) Administrative Heads and personnel at quality assurance agencies. Given that economics studies of skills gaps are typically done at the national level, this project aimed to provide more specific information to policy-makers in education, in order to allow them to direct their educational policies and recommendations to the needs of specific fields of study (e.g., engineering, business, medicine). In addition, project partners intended to offer specific information to quality assurance agencies.

In terms of how well each educational institution is responding to the needs of the labor market, so that they can be better equipped to make specific recommendations for curriculum development.

Method

The project was designed around two phases: one exploratory design phase, involving comprehensive literature review and qualitative interviews, and one descriptive design phase, involving questionnaire design and administration (Malhotra, 2002)

The original project proposal idea of matching employees with their direct supervisors in the final study sample was not pursued due to ethical considerations.
uncovered during the exploratory phase (Andrews & Higson, 2007). Therefore, project partners decided to compare answers from recent business graduates (i.e., graduates from higher education and vocational training institutions who received their degree within a maximum of three years and who were also working for a minimum of three months) with those of employers who clearly identified that they were directly supervising at least one recent business graduate.

Results

Phase 1: Literature review and Exploratory, qualitative interviews

Comprehensive literature review across the four countries in the topic of quality in educational institutions revealed that there are marked differences not only in their educational systems, but also in the use of quality control mechanisms (e.g., quality management systems) and the specific role of quality assurance agencies (Azevedo, 2007). In addition, a detailed literature review concerning the concept of competency and how it has been used in the Management, Human Resources and Business Education literature provided evidence that, in spite of the lack of appropriate definitions for specific types of competencies (e.g., leadership, critical/analytical), there seems to be an agreement that the word ‘competency’ already encompasses the term ‘skills’. Therefore, the project partners provided the following definition of competency, which was later on included in the final questionnaire: “Competencies represent a dynamic combination of knowledge, understanding, abilities and values”.

(e.g., Belasen & Rufer, 2007; Palmer et al., 2004; Kay & Moncarz, 2004; Berge et al., 2002; Summers & Summers, 1997; Gillard & Price, 2005; Nabi, 2003)

In addition to the literature review, project partners conducted forty-five interviews with Austrian, British, Slovenian and Romanian business graduates and employers. Content analysis of these interviews provided important ‘emergent themes’ which indicated that:

- Business graduates and employers agree that business education should combine theory and practice;
- The knowledge base and specific skills from particular business disciplines (e.g., Accounting, Marketing, Human Resources) are a very important aspect of business education, but are not sufficient to prepare business students for their future careers;
- Business graduates and employers want a well-rounded education which also delivers soft skills (e.g., verbal and written communication, presentation, adaptability), work-related skills (e.g., IT skills, practical skills gained in internships and voluntary extra-curricular activities), meta-level skills (e.g., research skills, ability to learn, ability to ‘see the bigger picture’) and other additional skills (e.g., time management, problem-solving, teamwork)

Therefore, important conclusions were derived from the literature review and the exploratory, qualitative interviews. For one, it was clear that both business knowledge and competencies should be addressed in the final study questionnaire. Also, project partners concluded that some competencies were more important than others and thus a cluster of eight key competencies was proposed (see phase 2).

Finally, given the importance attributed by most interviewees to experiences gained during work-based learning (i.e., internships) and extra-curricular activities, project partners decided to further address the contribution of these activities in the final study.
Phase 2: Survey design and administration

A questionnaire was designed to address key questions concerning the importance of business knowledge and business competencies in the workplace. Business knowledge questions covered primarily the five functional areas of study (i.e., Accounting, Finance, Marketing, Human Resources, Production/Operations), but there were also some additional open-ended questions included, in order to allow respondents to evaluate some important business-related disciplines (e.g., economics, law, psychology, languages). Business competency questions addressed a cluster of eight competencies, which captured the most relevant ideas/issues uncovered during phase 1: Influencing and persuading, Teamwork and Relationship Building, Critical/Analytical, Self and Time Management, Leadership, Ability to see the bigger picture, Presentation and Communication.

Regarding the selection of this final cluster of competencies and the choice of appropriate definitions, it is important to add that project partners relied on the years of work experience of one of our industry partners (PPS, England), who has successfully employed competency-based interviewing in their business practice.

The Business knowledge and competency questions were worded in such a way as to generate the so-called meta-level quality indicators. For example, concerning the issue of whether business and competencies are actually being used in the workplace (indicator #1), there were two questions included in the final questionnaire:

1) Do you agree that the following business knowledge areas are useful for the performance of your current job activities? (answers were provided on a 1-7 Likert scale, ranging from strongly agree to strongly disagree);

And

2) Do you agree that the following competencies are useful when considering what is required to perform your current job activities? (answers were provided on a 1-7 Likert scale, ranging from strongly agree to strongly disagree).

Additional questions for the other three quality indicators addressed how relevant the business knowledge and the competencies are for future career development (indicator #2), how competent business graduates feel they are in the different business knowledge and competencies (indicator #3) and how large is the gap between what graduates learned in their study program (regarding business knowledge AND competencies) and what is required of them in their current jobs (indicator #4). Concerning the final indicator, project partners agreed to change the original proposal idea, which was to measure the gap in terms of other knowledge and competencies not developed in the study program.

Two nearly identical questionnaire versions were created, one for the employer and one for the business graduates. These questionnaires were translated into the different languages of the project partners, and then were significantly revised, according to pretest results. First, the questionnaires’ length was significantly reduced (from over 40 questions in both versions, to approximately 30 questions in each) and second, many questions were reworded. The final questionnaire versions were successfully administered in Austria, England, Slovenia and Romania.

Findings

Sample size and characteristics

The final study sample was comprised of 900 respondents (596 graduates and 304 employers). The exact sample composition per country is provided in table 1 (see below). As in can be seen, the large majority of graduates came from higher education (universities and universities of applied sciences or “FHs”), with only approximately 18% of respondents coming from vocational training institutions (i.e., VETs). An even larger majority of
employees responded the questionnaires in reference to one particular graduate from higher education (only about 10% evaluated employees who graduated from a vocational training institution). Nonetheless, data analysis revealed that there were no major differences between how higher education graduates and VET graduates responded, and also between how employers of these two groups responded. Therefore, it was possible to combine these groups in subsequent analyses.

Table 1: Sample size and composition per country

<table>
<thead>
<tr>
<th>COUNTRY/Groups</th>
<th>Graduates (N=596)</th>
<th>Employers (N=304)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Romania</td>
<td>n=102</td>
<td>n=97</td>
</tr>
<tr>
<td></td>
<td>80 univ., 12 FHs,</td>
<td>86 univ., 10 FHs,</td>
</tr>
<tr>
<td></td>
<td>10 VETs</td>
<td>no VETs</td>
</tr>
<tr>
<td>Austria</td>
<td>n=106</td>
<td>n=56</td>
</tr>
<tr>
<td></td>
<td>48 univ., 37 FHs,</td>
<td>29 univ., 23 FHs,</td>
</tr>
<tr>
<td></td>
<td>21 VETs</td>
<td>4 VETs</td>
</tr>
<tr>
<td>England</td>
<td>n=178</td>
<td>n=60</td>
</tr>
<tr>
<td></td>
<td>146 univ., 32 VETs</td>
<td>51 univ., 9 VETs</td>
</tr>
<tr>
<td>Slovenia</td>
<td>n=210</td>
<td>n=91</td>
</tr>
<tr>
<td></td>
<td>64 univ., 100 FHs,</td>
<td>40 univ., 34 FHs,</td>
</tr>
<tr>
<td></td>
<td>46 VETs</td>
<td>17 VETs</td>
</tr>
</tbody>
</table>

Regarding the sample characteristics, the business graduate sample was predominantly young, with the majority of respondents (66.02%) between 21 and 30 years of age. This sample was balanced with respect to gender, with only a slight majority of females (57.19%). Business graduates came from a number of different industries (e.g., manufacturing, business-related activities, public administration and defense).

As expected, the employer sample was slightly older, with the majority of respondents (55.52%) between 36 and 50 years of age. This sample was also balanced with respect to gender, although a slightly majority of males was found (58%). There was again a balanced representation of industries (e.g., manufacturing, business-related activities, wholesale and retail trade).

Key Figures from business graduates and employers
The authors present in table 2, some key figures concerning graduates and employers.

Table 2: Key findings from graduates and employers

<table>
<thead>
<tr>
<th>Graduates (n=596)</th>
<th>Employers (n=304)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satisfaction with business education:</td>
<td>Satisfaction with employee work performance:</td>
</tr>
<tr>
<td>73.08% are very satisfied, satisfied or somewhat satisfied</td>
<td>87.6% are very satisfied, satisfied or somewhat satisfied</td>
</tr>
<tr>
<td>Satisfaction with acquired business knowledge:</td>
<td>Satisfaction with acquired business knowledge:</td>
</tr>
<tr>
<td>77.5 % are very satisfied, satisfied or somewhat satisfied</td>
<td>78% are very satisfied, satisfied or somewhat satisfied</td>
</tr>
<tr>
<td>Satisfaction with a specific situation (% of yes):</td>
<td>Satisfaction with a specific situation (% of yes):</td>
</tr>
<tr>
<td>81.82% - Influencing and Persuading</td>
<td>80.98% - Influencing and Persuading</td>
</tr>
</tbody>
</table>
As it can be seen from table 2, the large majority of respondents in both groups is satisfied with the business knowledge acquired in Higher education and Vocational training study programs. Graduates are also satisfied with their business education (or study program), while employers are also satisfied with employee’s work performance. Again, the large majority of graduates and employers are satisfied with how graduates used the competencies in a specific situation. Finally, there seems to be a very positive evaluation of the contribution of work-based learning (i.e., internship) to the performance of graduates’ current jobs.

**Key Comparisons I: Employers versus Graduates**

Regarding key questions which addressed the meta-level quality indicators (e.g., Business knowledge Marketing valuable, business knowledge Marketing relevant, business knowledge Marketing capable, business knowledge Marketing gap; competency Leadership valuable, competency Leadership relevant, competency Leadership capable, competency Leadership gap), employers were less positive (specially regarding the capability questions) and more discriminating (across business knowledge disciplines and competencies) in their responses.

**Meta-level indicators**

In order to generate the so-called meta-level quality indicators, project partners aggregated the answers for each business knowledge area (i.e., by averaging the answers across Accounting, Marketing, Finance, HR and Production/Operations), as well as for each competency area (i.e., by averaging the answers across the eight competencies). Findings from each indicator are reported in table 3.

It can be seen in table 3 that the percentages of respondents who either agree or strongly agree that the business knowledge is valuable and relevant (indicators #1 and 2) is very similar for graduates and employers. However, there is a clear difference in the issue of capability (indicator #3), with much less employers either agreeing or strongly agreeing that their employees are capable in business knowledge and business competencies.

In addition, it is important to notice that both groups rate business competencies as more valuable and more relevant for future career development, as compared to business knowledge. The clear message is that a good business education should seek to provide not only in-depth business knowledge, but also offer sufficient learning opportunities which lead to the development of business competencies.
Table 3: Meta-level indicators for business knowledge and competencies (% of respondents who either agree or strongly agree)

<table>
<thead>
<tr>
<th>Indicator #1 (valuable)</th>
<th>Graduates Business Knowledge</th>
<th>Graduates Business Competencies</th>
<th>Employers Business Knowledge</th>
<th>Employers Business Competencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicator #2 (relevant)</td>
<td>48.72</td>
<td>82.11</td>
<td>51.16</td>
<td>82.15</td>
</tr>
<tr>
<td>Indicator #3 (capable)</td>
<td>54.83</td>
<td>63.40</td>
<td>38.63</td>
<td>53.03</td>
</tr>
<tr>
<td>Indicator #4 (gap)</td>
<td>15.05</td>
<td>20.69</td>
<td>18.94</td>
<td>17.00</td>
</tr>
</tbody>
</table>

The authors would like to offer one important word of caution, concerning the meta-level indicator # 4. The gap questions were considered unreliable. In each question, there were a lot of respondents who chose the neutral answer (sometimes this frequency was around 20%), which led us to believe that these questions were not appropriately understood. In addition, findings from correlation analysis also indicated that the gap questions did not always correlate significantly (and negatively) with the capability questions, which was expected. Therefore, findings for indicator #4 are questionable and are only presented here for the sake of comprehensiveness.

**Key Comparisons II: Country differences**

Even though there was a large number of Kruskal Wallis ANOVA tests which were found to be significant, a close investigation of *mean ranks* across the four countries (as well as the actual means), revealed that the actual differences in country ratings were quite low. There was also no consistent pattern across responses (e.g., Romanian ratings being usually higher than the ones from Austria or the UK).

Therefore, project partners concluded that there were no major differences in findings from all countries. This is a very important finding, because it reveals that graduates and employers in these four countries provided similar answers to such critical questions such as what kind of business knowledge is important, what competencies matter and how capable their graduates are perceived to be.

**Factor Analysis**

Findings from principal-axis exploratory factor analysis are presented in tables 4 and 5. Regarding business knowledge, the findings presented in table 4 clearly suggest that the underlying factors were organized around the discipline areas (ratings of valuable and relevant are going together, for each discipline), with one exception: Accounting and Finance were evaluated very similarly and thus appeared in one factor. For employers, it was also the case that ratings of “Being capable” were going together – i.e., when one employee was evaluated as capable in one discipline, he or she was also rated capable in many others (see factor 4 for employers). The most important disciplines (highlighted in bold) were Finance, Marketing and Accounting, which received the highest ratings from both groups.
Table 4: Factor Analysis for business knowledge questions

<table>
<thead>
<tr>
<th>GRADUATES</th>
<th>EMPLOYERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor 1: Accounting/Finance</td>
<td>Factor 1: Accounting/Finance</td>
</tr>
<tr>
<td>Factor 2: Marketing</td>
<td>Factor 2: Marketing</td>
</tr>
<tr>
<td>Factor 3: Production/Operations</td>
<td>Factor 3: Production/Operations</td>
</tr>
<tr>
<td>Factor 4: Human Resources</td>
<td>Factor 4: Being capable</td>
</tr>
<tr>
<td>Factor 5: Being capable</td>
<td>Factor 5: Human Resources</td>
</tr>
<tr>
<td>(in Accounting and Finance)</td>
<td></td>
</tr>
</tbody>
</table>

Concerning the competencies, results presented in table 5 show a less clear picture, with factors typically describing a combination of competencies. Graduates and employers ratings were different in some respects (e.g., communication going together with Teamwork and relationship building for graduates, but going together with presentation for employers), but also similar in others (e.g., both groups had this factor “Being capable”). Again, the competencies considered most important for employers and graduates appear in bold in table 5, so it can be seen that, for example, both groups considered the competencies of Communication and of Teamwork and Relationship building very important.

Table 5: Factor Analysis for competency questions

<table>
<thead>
<tr>
<th>GRADUATES</th>
<th>EMPLOYERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor 1: Critical/Analytical, Ability to see bigger picture, leadership</td>
<td>Factor 1: Being capable (!)</td>
</tr>
<tr>
<td>Factor 2: Communication, together with Teamwork and rel.building</td>
<td>Factor 2: Presentation and Communication</td>
</tr>
<tr>
<td>Factor 3: Being capable (!)</td>
<td>Factor 3: „Relevant mixed“ (Critical/analytical, Ability to see bigger picture, Self &amp; time mgmt)</td>
</tr>
<tr>
<td>Factor 4: Presentation</td>
<td>Factor 4: Teamwork and rel.building with Influencing and persuading</td>
</tr>
<tr>
<td>Factor 5: Influencing and Persuading</td>
<td>Factor 5: „Valuable mixed“ (Critical/Analytical, Self &amp; time mgmt)</td>
</tr>
<tr>
<td>****</td>
<td>Factor 6: Leadership</td>
</tr>
</tbody>
</table>

Additional work is needed to find out whether a factor structure with 5 or 6 competency factors is sufficient and to further verify what exactly each factor should contain. Towards this aim, the authors plan to test different models in the future, using confirmatory factor analysis. Nonetheless, it is safe conclude at this point that a model composed of both business knowledge and competencies can be built around the factors described in this study and that this model should probably contain approximately 10 factors.

Predicting satisfaction?

Project partners also investigated the relationship between indicator type of questions (Business knowledge valuable/Business Knowledge relevant/ Business Knowledge capable; Competency valuable/ Competency relevant/ Competency capable) and satisfaction
questions (satisfaction with business education, satisfaction with business knowledge). Findings from a series of partial correlations suggest that there is indeed a relationship between some of the Business knowledge and competency questions and the satisfaction questions, but the relationship was typically very small (therefore, specific correlations coefficients are not presented here).

The authors however wish to point out that we intended to build a regression model to predict satisfaction with business education (or business program) from the business knowledge and competency questions, but unfortunately the regression models did not work. There were some violations of model assumptions which could be explained by problems with the satisfaction questions themselves (they were very skewed, on the positive side), the neglect of some important variables in the explanation of satisfaction with study programs (e.g., evaluations of faculty, existing program infrastructure), as well as a plausible two-way relationships between ratings of the different variables.

Discussion

The results from the 2-year MISLEM research project involving four countries largely confirmed the importance of developing business competencies, together with business knowledge, within business study programs. Not only all business knowledge and competencies were perceived as valuable (indicator # 1) and relevant for future career development (indicator #2) by both employers and business graduates, but also business competencies were rated even higher than business knowledge, according to indicators #1 and #2. These findings were similar across the two groups of respondents (i.e., graduates and employers) and also across the four countries.

As already mentioned in the results section, additional studies are needed in order to test and refine a model for business education which is composed of a combination of key business knowledge disciplines and key business competencies. This model can then be used to guide curriculum development at higher and vocational training institutions, as well as to compare business study programs across different countries.

Future research studies can also further examine the link between variables in this model and satisfaction with study programs, given that additional variables (e.g., satisfaction with faculty, satisfaction with program infrastructure) can also be taken into account. Finally, the authors suggest that more research should be carried out to examine the link between quality in higher education and graduate employability, as suggested in the project’s manual (Andrews & Higson, 2007).

There are a number of key recommendations which can be derived from the results of this project. For one, the authors would like to suggest that personnel at educational institutions and quality assurance agencies should seek to promote different teaching and learning strategies within business study programs, in order to enhance the development of business competencies of their students. In addition, they should also demand, for each study program, an ongoing quality assessment of the ‘labor market linkage’ (to see how well each program is responding to changes in labor market requirements), which can be performed with the help of the quality indicators developed by the MISLEM project.

In addition, policy-makers in education should encourage, at the national level, greater involvement of employers in the quality assurance process of educational institutions. This should help higher education and vocational training institutions to keep themselves aligned with shifting market demands. Furthermore, they can also promote, at the European level, the use of a model combining business knowledge and business competencies, as a way of harmonizing curricula across countries (Azevedo, 2007; Andrews & Higson, 2007). This is a very important avenue for policy-makers to pursue, given the growing internationalization of higher education and the challenges of comparing highly diverse educational systems (Hämäläinen et al., 2001).
References


Closing the Qualification Gap between Labour Market Requirements and European Study Programs

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Introduction

This paper presents key findings of research conducted in the framework of a Leonardo da Vinci Project titled „Creating an Observatory on Europe-wide TAQC (Transparency of Academic Qualifications and Competences) for Catching the MOLE (Mobility of Labour in Europe) and Filling the GAP (Generalized Academic Policy)” (TAQC). The project reveals the progress made in ensuring the transparency of academic qualifications and competences and the mobility of labour in Europe. The goals of the project are manifold, ranging from objectives directed towards the accomplishment of research in the field of transparency of academic qualifications and competences in Europe in order to develop a common database and methodology for awarding and recognizing qualifications to the correlation of the academic offer with the public and private demand for specialists and professionals, in order to strengthen links between various systems of academic education and training with research and society at large.

This paper focuses on one major area of research conducted in order to recognize the specific educational and training needs demanded on the labour market and to explore the gap level, if existing, between the academic qualifications and the labour market demands. This study is necessary, because while new qualifications proliferate worldwide universities are increasingly required to produce highly skilled graduates who are capable to respond to changing and complex demands of the workplace. Due to a rapid expansion of higher education over the past two decades discussions have arisen concerning the quality of tertiary education graduates and the ability of those graduates to meet the needs of the labour market (Teichler 2003, Elias & Purcell 2004, Mason 2004). For instance, during the mid 1980’s criticism was raised against business schools since they were perceived insufficiently relevant and accountable for market needs. Consequently, business school curriculum planners were advised to “shift their pedagogical emphasis from knowledge acquisition to skill development and from understanding by listening to learning by doing” (Belasen & Rufer 2007). Moreover, discussions about an increasingly wide ‘gap’ between the skills and capabilities of graduates, and the requirements and demands of the labour market have commenced (King 2003, Yunus et al 2005). However, there is still little evidence to support the existence of such a qualification gap (Andrews, Higson & Spendlove 2005).

Although it is apparent that the need to equip graduates with appropriate and high quality transferable skills is in many respects a generic higher education problem, there are differences in perceptions of what is required of graduates between different sectors of the economy and different types of employers. Thus, “the ‘problem’ of the perceived graduate-skills ‘gap’ remains a highly contestable issue – one that needs addressing both at
institutional, national and international level” (Andrews, Higson & Spendlove 2005). Therefore, this study covers the need for an in-depth analysis of the qualification level and the gap between the qualification level offered by the education system and the one required by the labour market.

The assessment of qualification levels (acquired and needed) within this paper is based on basic components of a qualification in various fields of training and activity according to the European Qualification Framework (EQF) and a working document of the Romanian Agency of Education for the development of the National Qualification Framework (NQF) ( Romanian Agency of Education 2007; SEC 2006 1093). The intention of these European and national initiatives is the identification of essential characteristics of a qualification in order to enhance transparency and acceptance of qualifications also by the labour market. Four components of qualification assessment are identified:

1. knowledge;
2. general competences;
3. professional competences; and
4. personal development.

The term knowledge is defined as the outcome of the assimilation of information through learning. Knowledge is understood as the body of facts, principles, theories and practises that are related to a field of study or work. General competences are an integrated, dynamic, coherent and open kit of knowledge, abilities (e.g. cognitive, action-like, relational and ethical abilities) and other skills (e.g. values and attitudes) developed within a larger framework of the field of studies. The term professional competence refers to a proper use of an integrated, dynamic, coherent and open set of knowledge, abilities and other skills specific to a profession in order to successfully solve a problem situation in terms of efficiency and efficacy occurring in the respective profession. Personal development involves knowing how to conduct oneself in a specific situation.

These four qualification assessment components are used in an integrative manner; as an expression of the ability of graduates to combine – in a self-directed way, tacitly or explicitly and in a particular context – the different elements of knowledge and skills they possess (SEC 2005 957). Acquiring a certain level of competence can be seen as the ability of a graduate to use and combine his or her knowledge, skills and wider competences according to the varying requirements posed by a work-related context, situation or problem. Thus, the ability of a graduate to deal with complexity, unpredictability and change of the labour market determines his or her qualification level.

Methodology

A questionnaire was designed to obtain adequate data concerning qualification levels acquired by graduates and qualification levels demanded by the labour market in the countries Austria, Bulgaria, France, Lithuania, and Romania. Two different questionnaire templates addressed the following groups of respondents; firstly graduates which have been employed for at least three months and aged less than 35 and secondly employers, or company owners respectively. The questions refer to the basic components of a qualification (knowledge, general competence, professional competence, and personal development) explained in the introductory section. The questions referring to the qualification levels are paired questions. Thus, the questions are addressed to both employees and employers in order to analyze perceptions on qualification requirements and on qualification gaps from the education and labour market side. Both open-ended questions and closed questions consisting of multiple-choice answers are used. Questions were assessed on a five-point likert-scale raging from 1 (very low level / very small gap) to 5 (very high level / very large gap). The questions concerning the qualification level do not address specific knowledge or
competences of a sector or an activity, but they rather intend to identify a general, common structure of a qualification, adequate for all areas and countries involved in this study.

During the period of July to September 2006 a total of 863 valid questionnaires were collected. The sample comprises a total of 437 interviews conducted with the group of graduates/employees and 426 interviews made with the group of employers/company owners. A detailed overview of the sample structure per group and country is provided in figure one.

![General structure of the respondents](image)

**Figure 1: General structure of respondents**

Concerning the sample group of employees the representation across all countries is rather evenly split (51.4 percent male and 48.6 percent female). The age of respondents differs across countries. While the majority of respondents in the Eastern countries are mainly between 29-30 years old, the majority of respondents in the Western countries are younger than 25 years. Most of the employees are graduates from social sciences and economic programmes (approximately 44 percent), followed by technical sciences, medicine studies, natural sciences and others.

Regarding the sample group of employers most respondents are male (70 percent). Only the countries France and Slovakia had a higher female participation with approximately 45 percent. The employers cover a large range of activity sectors: educational institution, state administration, private area and other institutions being representatives for the entire system.

**Findings**

First of all, key findings of employee versus employer perceptions of qualification levels acquired during an education programme are presented. Finally, the assessments of the gap level between what is required in a current job position and what was learned during the education programme from both employers and employees’ side are highlighted. In both sections there will be a European comparison between the project countries followed by a deeper analysis based on the Austrian sample.

I. Qualification levels acquired during education programme

The survey assessed what level of needed qualification a graduate has acquired during an education programme within the employers and employees group. The results of the European study show that more than 70 percent of the employers interviewed evaluate
the knowledge of their employees either as “very high” or “rather high”. Within the employees group only 60 percent of interviewed employees share the employers’ opinion (see figure two). Especially in Lithuania the high percentage of positive ratings among employers (100 percent) is astonishing. Bulgarian employers also seem very satisfied with the knowledge level of their employees (75 percent) as well as the Slovakian ones (56 percent). Yet, in France and Romania answers are more moderate since the majority of employers interviewed indicate a “rather high” knowledge level and within Romania an “average” level. Knowledge was also evaluated rather well with a mean of 3,603 by Austrian employers. 57,1 percent perceive the level of knowledge very high or rather high. 15,3 percent of the employers believe that the knowledge level was very low or rather low and 27,1 percent believe that their employees acquired an average knowledge level during their study program. Austrian graduates evaluate their knowledge level slightly better than their supervisors with a mean of 3,73. Indeed 62,2 percent of the employees who contributed to the study think that their knowledge level was very high or high, while only 14,1 percent believe that their knowledge level is very low or rather low, and 18,8 percent think that they have an average knowledge level.

**Figure 2: Knowledge level**

Concerning the second qualification element, namely general competence the percentages indicate a similar trend towards the “rather high” and “very high” levels. Within this element there are only small national disparities, except for an outstanding positive evaluations within the Bulgarian sample of employers and employees and an average evaluation within the Romanian sample (see figure three). Again, employers tend to evaluate the general competence level better than employees. Within the Austrian employers’ sample the general competence level received the worst evaluations among all qualification elements with a mean of 3,517. While 52,5 percent of the employers believe that the employers’ general competences are very high or rather high, 13,6 percent regard them as being low or rather low, and 33,9 percent believe that the general competences acquired are at an average level. However, within the Austrian employees sample the general competence level is evaluated rather well with a mean of 3,72. 65,7 percent of the employees perceive their competence level very high or rather high. 12,5 percent have the impression that their general competence level is very low or rather low and 21,9 percent believe that they acquired an average knowledge level during their study program.

The survey further revealed that professional competences are not acquired sufficiently during the study programme. Only 30 percent of all employers interviewed consider the professional competence level acquired as “very high”, approximately 25 percent as “rather high” while 20 percent indicate an “average” level. The national differences are illustrated in figure four showing Lithuania with 96 percent of employers and 91 percent of employees declaring a “very high” level of professional competences and in contrast Romania with 40 percent of employers and 56 percent of employees indicating an
“average” level of professional competences. Although the evaluations of employers surpass the one of the employees the difference is negligible.

Figure 3: General competence level

Within the Austrian employers sample the professional competences acquired during the study program received the highest evaluations among the four qualification elements with a mean of 3.741. Indeed 70 percent of the employers perceive the professional competences of their employees as very high or high, while only 11.6 percent believe that the employees’ professional competences is very low or rather low and 18.3 percent think that they are average. In contrary, the Austrian employees interviewed evaluate professional competences worse than the other qualification elements with a mean of 3.52. While 57.8 percent of the employees regard their professional competences as very high or rather high, 15.6 percent believe that they are low or rather low, and 28.1 percent regard their professional competence level acquired as average.

Figure 4: Professional competence level

Finally, personal skills are insufficiently developed by the educational systems and adjustments in response to this new business requirement seem to be needed. Figure five highlights that this element of qualification is less accomplished, from point of view of both employers and employees. Besides rather positive evaluations of the Bulgarian employees’ side, this type of competence is recognized as insufficient for the existing labour market demands. In total the evaluations of personal skills range from an “average” level (23 percent of employers and 31 percent of employees) to a “rather high” level (39 percent of employers and 30 percent of employees).

Within the Austrian employers’ sample personal skills development are assessed with a mean of 3.552. 60 percent of the employers perceive the employees’ level of personal skills development acquired during the study program as very high or rather high, 16.7 percent as very low or rather low, and 23.3 percent as average. Austrian employees interviewed assess their personal skills slightly higher than employees with a mean of 3.59.
59.4 percent of the employees perceive their level of personal skills development acquired during the study program as very high or rather high, 12.5 percent as very low or rather low, and 28.1 percent as average.

![Figure 5: Personal development level](image)

**Figure 5: Personal development level**

Further analysis concerning the qualification levels acquired during the education programme are undertaken within the Austrian sample in order to analyze whether there are significant differences

1. between qualification components (knowledge, general competences, professional competences, personal skill development); and
2. between the qualification components to a set value
3. between the group of employers and the group of employees.

To test whether employers consider certain qualification components significantly better than others, paired-samples t-tests were conducted within the employers group. With this parametric test differences in means in the paired samples are measured. Each pair compares the quality acquisition level of one qualification element with the three other qualification elements. Examining the paired samples statistics tables within the employers groups it is determined that all mean scores range between 3.5 and 3.8. It was further determined that within the six paired samples none of the qualification elements were significantly higher or lower than other qualification elements. The same test was made within the employees’ sample. Examining the paired samples statistics tables within the employees groups it was determined that all mean scores range between 3.52 and 3.73. It was again determined that within the six paired samples none of the qualification elements were significantly higher or lower than other qualification elements.

Interesting results have been found through a one-sample t-test. The mean score of firstly the employers group and secondly the employees group are compared to the value of four, indicating a rather high qualification level acquired during the study programme. Within the employers’ sample there are significant mean differences regarding general competences (mean 3.54; sig. 2-tailed 0.002), personal development skills (mean 3.57; sig. 2-tailed 0.004) and knowledge (mean 3.63; sig. 2-tailed 0.018). The results of the one-sample t-test for the employees’ group reveal that all means of the qualification elements are below the level of four. It further indicates a significant mean difference regarding professional competences (mean 3.52; sig. 2-tailed 0.000) and the personal development skills (3.59; sig. 2-tailed 0.001).

Finally, an independent sample t-test was conducted in order to test whether the group of employers considered the four qualification components significantly better or worse than the group of employees. Although there are differences in means of employer and employee evaluations of the four qualification levels, none of these mean differences are significant.
These results indicate a need for improved qualification levels, especially regarding personal development but also professional competence, general competence and knowledge. Employees and employers evaluate the qualification level rather similar and there was no significant difference within each group as regards the evaluation of qualification components.

II. Qualification gap between education programme and labour market needs

This section highlights the results based on the analysis of a gap between what was required of an employee to know in his or her current job and what he or she has learned during an educational period. Employers and employees evaluated the qualification components on a five-point scale (ranging from 1 = very small gap to 5 = very large gap). The data concerning the gap questions are rather consistent with the results of the qualification level questions. Within the Bulgarian and French data neither employers nor employees perceive that there is a relevant gap level within the four elements of qualification (see table 1). However, the qualification elements professional competences and personal skills development are evaluated worse than knowledge and general competences by both employers and employees. Furthermore, in the Lithuanian sample there is the perception of a “very high” gap level in the case of personal skills development.

Thus, the majority of education systems seem to put emphasis on knowledge and general competence development within their study curricula. However, little attention is drawn towards the development of professional competences and personal skills.

<table>
<thead>
<tr>
<th>Employees</th>
<th>Knowledge</th>
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<th>Professional competences</th>
<th>Personal skills development</th>
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<td>2,31</td>
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<tr>
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<td>1,70</td>
<td>2,07</td>
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<tr>
<td>France</td>
<td>1,85</td>
<td>1,55</td>
<td>2,34</td>
<td>2,15</td>
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Table 1: Gap perception (mean values)

The Austrian results show that in general the gap is perceived as rather small. Austrian employers find the largest gap in comparison to the other qualification elements (mean of 2,069) in the personal skills development. However, even this gap is perceived as rather small. Indeed, 75 percent of the employers respond that the gap of the personal skills required in the job and the personal skills acquired during the study program is rather small or very small. However, while 18,3 percent are neutral, 6,7 percent perceive the gap as rather large. The knowledge gap is perceived as rather small by employers (mean = 2,0517). 69,5 percent perceive the gap as rather small or very small; 23,7 percent are neutral; and 6,8 percent believe that the knowledge gap is rather large. Concerning the professional competences 76,7 percent of the employers consider the gap as rather small or very small, 20 percent are neutral and 3,3 percent consider the gap as rather large. The mean of the gap evaluation is 1,931, thus rather small. The smallest gap within the four evaluated qualification elements is found in the general competences. With a mean of 1,879 the employers perceive the gap in general competences as rather small. More precisely, 79,7 percent believe that the gap is rather small to very small, and 20,3 percent are neutral. Thus, no respondent perceives an existence of a large gap.
Within the Austrian employees sample all qualification elements had a mode of two, which shows a rather small perceived gap. The largest gap in comparison to the other qualification elements (mean of 2.31) is found in the professional competencies. Yet, even this gap is perceived as rather small. Indeed, 61 percent of the employees respond that the gap of the professional competences required in the job and the professional competencies acquired during the study program is rather small or very small. However, while 29.7 percent are neutral, 6.3 percent perceive the gap as rather large. The personal skills gap is perceived as rather small by employees (mean = 2.29). Indeed, 61 percent perceive the gap as rather small or very small; 32.8 percent are neutral; and 4.7 percent believe that the personal skills gap was rather large. Concerning the knowledge 64.1 percent of the employees consider the gap as rather small or very small, 20.3 percent are neutral and 14.1 percent consider the gap as rather large. The mean of this gap evaluation is 2.25. The smallest gap within the four evaluated qualification elements is found in the general competences. With a mean of 2.31 the employees perceive the gap in general competences as rather small. More precisely, 70.3 percent believe that the gap is rather small to very small, 21.9 percent are neutral, and 4.7 percent of the employees perceive the gap as rather small.

Comparing the means of Austrian employers and employees regarding the gap of what was learned and what was required on the job, illustrates that employees perceived the gap larger than employers. While employers found the “largest” gap in personal skills, employees did so in professional competencies.

Again further analysis are undertaken within the Austrian sample in order to analyze whether there are significant differences as regards to the perceived qualification gap:

1. between qualification components (knowledge, general competences, professional competences, personal skill development);
2. between the qualification components to a set value; and
3. between the group of employers and the group of employees.

To test whether employers or employees considered certain qualification components significantly better than others, paired-samples t-tests were conducted within the both groups. Examining the paired samples statistics tables within the employers groups it is determined that all mean scores range between 1.86 and 2.10. It was further determined that within the six paired samples none of the qualification elements were significantly higher or lower than other qualification elements. Examining the paired samples statistics tables within the employees groups it was determined that all mean scores range between 2.08 and 2.31. It was again determined that within the six paired samples none of the qualification elements are significantly higher or lower than other qualification elements.

With a one-sample t-test the mean scores of firstly the employers’ group and secondly the employees’ group are compared to the value of two, indicating a rather low qualification gap. The results of the one-sample t-test within the employers group reveal that there are no significant differences, thus the gap was perceived rather small. However, there are significant mean differences to the set value of 2 in evaluations within the employees group regarding the professional competence gap (mean 2.31; sig. 2-tailed 0.06) and the personal skills development gap (mean 2.29; sign. 2-tailed 0.005).

Finally, an independent sample t-test was conducted in order to test whether the group of employers considered the four qualification components significantly better or worse than the group of employees. Although there are differences in means of employer and employee evaluations of the four qualification levels, none of these mean differences are significant.

These results indicate that employees perceive a qualification gap between what they have learned during their study programmes and what is required from them in their current jobs especially as regards to professional competences and to personal development. Employees and employers evaluate the qualification level rather similar and there was no significant
difference within each group as regards the evaluation of qualification components.

Conclusion

This paper presents the findings of a European-wide study which covers the need for an in-depth analysis of the perceived qualification level of graduates and the qualification gap between the skills and competences offered by the education system and those required by the labour market.

The results indicate that on a European level the development of knowledge, general competences and professional competences are addressed rather well within higher study programme curricula, while personal skills are insufficiently covered. Furthermore, there are differences between the offer of the education system and the demand of the labour market (the so-called qualification gap), especially regarding personal skills and professional competences. However, this gap is perceived as rather small.

Therefore, an attempt to close this small but still existing qualification gap is an enhanced integration of both personal skills and professional skills development within European study curricula – encouraged by higher education institutions as well as by policymakers in education. This may help graduates to know better how to conduct themselves in work-related situations and to feel well-prepared to solve problem situations in terms of efficacy and efficiency occurring in the respective profession.

References


Reciprocity of vocational training for dyslexic employees and meeting the needs of the labor market

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Introduction

Reading and writing skills is basic knowledge to fulfill the requirements of primary and secondary education, and to cope with daily activities in current society. Most learners acquire reading and writing skills easily. Nevertheless, some learners are unable to follow the same learning path of their colleagues. In some cases their underperformance in the areas mentioned above could be tackled by establishing the basis for reading and writing. Still, a small group manifests a more specific disability, characterized by alterations in the order of letters, misspellings, and change of phonemes, confusion between words, and other difficulties for the processing of written information. These difficulties, that constitute the core symptoms of dyslexia, remain unless the person is provided with special training. If no remediation is provided, the learners could be slow readers, show difficulties for reading comprehension, note taking, and have a low performance in written tasks (Reid, 2003). It is important to note that dyslexia affects directly, or secondary, to a wide range of personal aspects (Bruck, M., 1998). It does not limit its impact to reading and writing abilities. As most of academic work depends on the comprehension or production of written material, the dyslexia affects to general performance. Furthermore, dyslexic people also manifest some other cognitive difficulties as to focus their attention, to organize their work, working memory, which could be interpreted as a problem of information processing. In consequence, it is not infrequent that the dyslexic person experience repeated academic failures, which could undermine their self-esteem and the confidence in their abilities. In fact, many dyslexics develop compensating strategies to avoid those situations where their problem could be revealed (McLoughlin et al., 2002).

Definition of Dyslexia:

In 2001 the Austrian Ministry of Education published a brochure on the treatment of reading and writing difficulties as well as dyscalculia. This brochure gives an overview of all regulations and definitions in the provinces and describes reading and writing difficulties respectively dyslexia as follows:

Reading and writing difficulties refer to a weakness in reading and/or spelling which lays under the average respectively individual standard you would expect to occur. These difficulties (occurring sometimes only temporarily) can be based on various causes, e.g. fitting problems between the individual rate of performance and learning programs offered by the learning institutions. Weakness in reading and/or writing in the clinical-psychological sense (mostly referred as “LRS” – or “Legasthenie /Dyslexia”) refers to the
assumption of functional disorders in perception, processing and reproduction of information. The manifestation of the weakness in reading and/or writing can be noticed by error persistence even under optimizing the pedagogical support by the school or if the errors persist further on in some other kind.

The disorder (and along with that the concept of support and treatment) has to be separated from

- Other receptive disorders (e.g. visual and hearing impairment)
- Expressive disorders (e.g. disorders in language development)
- Motor difficulties
- Specific psychological disorders with communication problems
- General weakness in learning or other cognitive disorders
- Learning deficits
- Difficulties due to ethnic/cultural problems in second language acquisition etc.

Dyslexia affects approximately 1 in 10 of the population. Experts estimated that up to 25 million workers in Europe are affected by dyslexia. Dyslexia in the adulthood means a lifetime of underachievement, and frustration for those persons affected by this disease. Many adults with dyslexia are underemployed, often stuck in dead-end jobs that do not tap into their true vocational potential. Many others are not finding employment at all. Many are unsuccessful in their pursuit of further training, and few are accessing the adult services that have been developed to serve them. It can be said that the awareness to problems of dyslexic employees is European wide very low. Trainers and employers are not aware of dyslexic person needs at their working places. Trainers do not recognize their needs while preparing training materials or providing courses. Managers and employers are in general not informed about dyslexia. Therefore they do not care about special attention on their needs and loose the advantages having persons in their companies and organization who think different.

The European Disability Policy now requires all employers to take account of and address the needs of dyslexic people in their workforce. Therefore the aim of the project “Adystrain” is to contribute to build up awareness and understanding on dyslexia in adulthood. At present, there is a general agreement in the convenience of an early detection of learners with reading and writing disabilities. It is emphasized the importance of establishing an early and accurate diagnosis in order to assist these students’ needs. This is essentially responsibility of governments to provide the professional and technological means to support the process of adaptation to the demands of an alphabetized society.

In the Adystrain project there is a huge focus to include institutions dealing with dyslexia. The consortium is composed by the following institutions and countries: FH JOANNEUM, Department of International Management / Austria (Project contractor), e-Learning concepts Rietisch KEG / Austria (Project coordinator), Spunk Text, Grafik und Design / Austria, Infoart / Bulgaria, SUELL Team / Denmark, Confederación de Empresarios de Aragón (CREA) / Spain, Helsinki University of Technology Lifelong Learning / Finland, f-bb Forschungsinstitut Betriebliche Bildung GmbH / Germany, GNW kft. / Hungary, EURO-training / Bulgaria, and Ibis Creative Consultants Ltd / UK.

Support Partners are Diverse Learner Association / Finland, Suceava Teachers Association / Rumania (STA), Xenon / Rumania, Welsh Dyslexia Project / UK (WDP), the Centre Education for Democracy / Bulgaria, Plovdiv Chamber of Commerce and Industry / Bulgaria, Nuhl Training / Austria, AMS -Bundesgeschäftsstelle für Gleichbehandlungsfragen / Austria, Österreichische Gesellschaft für Politikberatung und Politikentwicklung (ÖGPP) / Austria, Eötvös Lorand University / Hungary, Research Institute of Psychology - Ungarische Akademie der Wissenschaften / Hungary, and Simfonic - Trade Union Congress / UK.

Most employers, trainers and human resources personnel will not have access to assessment procedures. But there are checklists that may aid the identification of individuals
with specific learning difficulties. Although these may not provide information on the specific underlying difficulties, they can help confirm the nature of the problem.

In order to understand some of the issues, there is a specific checklist, developed by Smythe and Everatt, 2001, based on responses of a large number of dyslexic and non-dyslexic individuals. Each question has a “weighting” which means than some questions are more important than others.

Appendix 1
Adult Questionnaire

To do this checklist, you will need a pencil and paper, and then write down the numbers 1 to 15 to correspond to the questions (or photocopy these pages). Each question has four possible responses. Note the one that is most relevant to you, and put the score on your score sheet. So on Question 1, if you think your response is ’Often’, give yourself 9 points. There are a total of 15 questions.

1. Do you confuse visually similar words such as cat and cot?
   - Rarely (3)
   - Occasionally (6)
   - Often (9)
   - Most of the time (12)

2. Do you lose your place or miss out lines when reading?
   - Rarely (2)
   - Occasionally (4)
   - Often (6)
   - Most of the time (8)

3. Do you confuse the names of objects, for example table for chair?
   - Rarely (1)
   - Occasionally (2)
   - Often (3)
   - Most of the time (4)

4. Do you have trouble telling left from right?
   - Rarely (1)
   - Occasionally (2)
   - Often (3)
   - Most of the time (4)

5. Is map reading or finding your way to a strange place confusing?
   - Rarely (1)
   - Occasionally (2)
   - Often (3)
   - Most of the time (4)

6. Do you re-read paragraphs to understand them?
   - Rarely (1)
   - Occasionally (2)
   - Often (3)
   - Most of the time (4)

7. Do you get confused when given several instructions at once?
   - Rarely (1)
   - Occasionally (2)
   - Often (3)
   - Most of the time (4)
8. Do you make mistakes when taking down telephone messages?
   - Rarely (1)
   - Occasionally (2)
   - Often (3)
   - Most of the time (4)

9. Do you find it difficult to find the right word to say?
   - Rarely (1)
   - Occasionally (2)
   - Often (3)
   - Most of the time (4)

10. How often do you think of creative solutions to problems?
    - Rarely (1)
    - Occasionally (2)
    - Often (3)
    - Most of the time (4)

11. How easy do you find it to sound out words such as el-e-phant?
    - Easy (3)
    - Challenging (6)
    - Difficult (9)
    - Very difficult (12)

12. When writing, do you find it difficult to organize thoughts on paper?
    - Easy (2)
    - Challenging (4)
    - Difficult (6)
    - Very difficult (8)

13. Did you learn your multiplication tables easily?
    - Easy (2)
    - Challenging (4)
    - Difficult (6)
    - Very difficult (8)

14. How easy do you find it to recite the alphabet?
    - Easy (1)
    - Challenging (2)
    - Difficult (3)
    - Very difficult (4)

15. How hard do you find it to read aloud?
    - Easy (1)
    - Challenging (2)
    - Difficult (3)
    - Very difficult (4)

Now add up your total.

Score less than 45 – consistent with results of somebody who is not dyslexic

Note carefully the wording "... is consistent with ...". This means that those who were part of the research who had been assessed by a psychologist and consider themselves non dyslexic scored less than 45. This does not mean that if you score less than 45 you are not dyslexic. You may have developed compensation strategies to overcome the difficulties.
45-60 – shows signs consistent with mild dyslexia.

This means that those who were part of the research who had been assessed by a psychologist and consider themselves mildly dyslexic scored between 45 and 60.

Greater than 60 – consistent with moderate or severe dyslexia.

Research consistently showed that those scoring more than 60 on this questionnaire were severely dyslexic. Note that we shall discuss this in more detail later.

Dyslexia is not a disorder, but a different way of thinking, which has its advantages and disadvantages. Due to its peculiarity, however, the learning style that renders learning for dyslexics efficient leads to difficulties and disturbance in several respects. The very same learning conditions, guidance and instructions can be efficient for one person, while hindering another.

**Methodology**

The aims and objectives of the project are as follows:

- Helping employers become aware of dyslexia and how it may affect their workforce. The interactive information will help employers to address the needs of dyslexic people by making them aware of the "reasonable adjustments" they may need to make, particularly in relation to workplace training, as well as indicating what benefits dyslexic people may bring to the workplace. The interactive course will dispel myths about dyslexia, indicate how dyslexia may affect adults at work, and help employers to consider how dyslexia may affect their colleagues and customers.
- Assisting workplace trainers and those organizing training to consider how they can make sure their practices are “dyslexia friendly”. It includes guidance on producing training materials and training methods.

People differ in many ways, including how they learn. Knowledge of the various learning styles can help everyone find the methods and circumstances that best suit them. Teaching should take into consideration the diversity of learners.

The learning style that generally helps dyslexics (Conti, G. J., 1985):

- Physiological characteristics of the learning style: Seeing and motion; shorter periods; munching and drinking
- Psychological characteristics of the learning style: global, simultaneous
- Environmental characteristics of the learning style: dimmer light; instrumental music; loose arrangement
- Sociological characteristics of the learning style: social situations help
- Emotional characteristics of the learning style: poor persistence; special rhythm; when motivated, is absorbed in the task

The request and need for deeper research on this topic for adult education has been identified through an extended literature research within the involved European countries (United Kingdom, Austria, Bulgaria, Denmark, Finland, Hungary, Germany and Spain) as follows:

United Kingdom:

The Dyslexia Institute, [www.dyslexia-inst.org.uk](http://www.dyslexia-inst.org.uk) is reporting on adapted regulations and infrastructure for dyslexics. In the UK there are dyslexia friendly schools and specialized private trainers and teachers in adult education (Smythe, I. , Everatt, J., 2001;
Singleton, C., 1999).

Austria:

The school authorities have begun to accept their competence over Dyslexia. The teachers are asked to create suitable conditions during written tests e.g. by lengthening of the exam time. The teacher’s education is referring to contents on Dyslexia. Nevertheless, the work of both Austrian Legasthenie federations concentrates almost exclusively upon children at the school age and upon youngsters (Goetzinger-Hiebner, M., 2002; Kalmar, M., 1998). That is why this project can foster the educational situation for learners in adult and Higher education.

Bulgaria:

If learning difficulties are ascertained at school, the affected children have the right on suitable support. Indeed, it lacks nowadays of accordingly qualified teachers. A dyslexic adult is only treated if his situation is a result of an accident. The Adystrain partnership is in contact with the first and educational workshop founded new which will deal in future with the area Dyslexic of Adults (Matanova, V., 2001).

Denmark:

The Folkeskoles (primary schools) are obliged to offer help to affected children. Besides this, a special attention is laid on the integration of information technologies and communication technologies. Special hardware and software can help to master learning difficulties. The act on special education assures dyslexic adults the right on a special education and continuing education. Affected adults have the status of disabled persons and receive suitable social securities. They take therefore, indeed, a special position in the professional life, at the same time this status possibly obstructs the full use of her abilities to them (Haven, D., Jandorf, B. D., & Nielsen, H., 2004).

Finland:

There is no special legislation to persons with Dyslexia. Affected children receive help as a rule by especially qualified teachers directly in the schools. Nevertheless, basically all teachers receive suitable information and teaching contents with regard to Dyslexia in the course of her education. During the last years some projects, also with European support, have been carried out in the area "youngsters with Dyslexia" (Lyytinen, H., Aro, M., & Holopainen, L., 1997).

Hungary:

Since 1990 suitable measures are forced, e.g. a systematic screening of the children is carried out. The subject "Dyslexia" is recently a duty component of the education of teachers. In Hungary still all measures concentrate nowadays likewise upon children, presumably because these are slightly accessible in the schools. In the professional and working life Dyslexia is brushed according to the appraisal of the authors under the carpet (Gyarmathy, E., Vassne Kovacs, E., 2003).

Romania:

As opposed to other new member countries the subject „employees with Dyslexia“ is already taken up in Romania. The Rumanian Dyslexia organization which is also a support partner in this project tries hard to spread suitable public-relations information and to build up a network for assistance for adults. The continuing education of trainers, coaches and teachers is a strategically concern and request.
Germany:

Indeed, the support which affected persons receive differs from federal state to federal state. Nevertheless, all together it has reached a high level. Teachers are asked directly to take up contact with the parents with supposed dyslexic children. But a diagnosis can be given only exclusively through highly skilled and qualified therapists. As a general rule a special training program will be executed with them together. The situation presents itself quite differently in the adult's area: With the abandonment of the school it comes as a rule for a demolition of the special training, there are no special offers of help. Teachers or trainers are not really sensitive towards dyslexia. The opinion is widespread that these difficulties "disappear" from itself without any special treatment in the adult's age (Schulte-Körne, G. 2004).

Spain:

There is not enough existing meaningful information and awareness concerning Dyslexia in Spain. This clearly appears by looking in those areas which are developed quite well in other countries: e.g., children and their parents in Catalonia feel still to a great extent abandoned and lost with the problem. In the area of continuing education of trainers there are not enough suitable training programs that can be offered to potential clients. To sum it up, it becomes clear that at present the measures concentrate upon children. Children are slightly accessible in the schools. The motivation to tackle difficulties in this area is high on the side of the parents. The measures themselves are offered by therapists and pedagogues in the private sector. With an increasing age affected persons often hide their learning difficulties. They suffer and exclude themselves either or are excluded.

If these persons enter into the adult's age, they torment, above all, feeling of inferiority and self doubts. A participation in professional continuing education fails as a rule in there feeling of inferiority as well as in the unawareness of the trainers. The problems of dyslexic employees have been researched academically already since fairly long time, but the practical conversion has begun by recommendations only in few European countries. The partnership is academically accompanied in the development of the curricula by support partners. The partnership pursues therefore a concentrated beginning in the direction of two target groups without whose active co-operation the called problems cannot be solved. The improvement of the situation of affected employees can be accessed through two different levels: On the one side trainers and teacher and on the other side managers and entrepreneurs (Reid, G., 2003, 2004).

Therefore projects dealing with dyslexia show a high need for realization in almost every European country. The project Adystrain has a total duration of 24 months and it is divided a development-, a testing- and a valorisation phase. In the development phase the contents of the 12 modules, manuals & information booklets, the ADysTrain platform and the E-Books are conducted. During the testing phase main emphasis will be set on the preparation, organization, implementation and evaluation of pilot workshops.

Appendix 2
Curricula / Modules ADysTrain:

Trainers & lectures (TL)
Managers & entrepreneurs (ME)

Module 1: What is dyslexia?
   TL01, ME01
Module 2: Identification of the strengths and weaknesses of dyslexic individual
   TL02

Module 3: Underlying causes of dyslexia
   TL03

Module 4: Role of Information and Communication Technology (ICT)
   TL04, ME04

Module 5: Learner preferences and learning styles
   TL05

Module 6: Preparing materials for the dyslexic learner
   TL06

Module 7: Supporting the dyslexic learner
   TL07, ME07

Module 8: Multilingualism and dyslexia
   TL08

Module 9: Disseminating good practice
   ME09

Module 10: Course and career guidance
   ME10

Module 11: Self-awareness and self-advocacy groups
   ME11

Module 12: Dyslexia and disability legislation
   ME12

Appendix 3

<table>
<thead>
<tr>
<th>Module</th>
<th>Detailed module description</th>
<th>Learning outcomes</th>
<th>Examples to include</th>
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<tbody>
<tr>
<td>1</td>
<td><strong>What is dyslexia?</strong> A brief guide to understand the background and scientific support of what is dyslexia, and how it is not a social construct, nor a product of poor teaching, but a real problem that affects the learning of many individuals.</td>
<td>Understand the definitions of dyslexia and disabilities, how they vary in cultures, languages and contexts. Understand that there is no prototypical dyslexic, and each has to be understood with respect to their context.</td>
<td>Case studies; Role models: inspirational employers: famous dyslexics</td>
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<td>2</td>
<td><strong>Identification of the strengths and weaknesses of dyslexic individual</strong></td>
<td>Issues around screening, self assessment and professional assessment services are addressed.</td>
<td>Understand why it is important to recognize both weaknesses and strengths, and how this can be achieved. Understand the principle tools and professionals involved.</td>
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<td>3</td>
<td><strong>Underlying causes of dyslexia</strong></td>
<td>A brief overview of the processing problems of the dyslexic individual and their impact will be given.</td>
<td>Understand the use of psychological measures to gain an appreciation of the specific nature of the difficulties of the dyslexic individual. The understanding of how cognitive measures can be used to develop intervention and support strategies.</td>
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<td>4</td>
<td><strong>Role of Information and Communication Technology (ICT)</strong></td>
<td>If used appropriately, technology can be an empowering tool. However, assumptions should not be made for the dyslexic learner.</td>
<td>Have a basic understanding of the role of ICT in the support of the dyslexic individual. Recognize the difference between learning software and assistive technology. Appreciate the factors involved in determining what software and hardware are appropriate to the individual.</td>
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<td>5</td>
<td><strong>Learner preferences and learning styles</strong></td>
<td>Many dyslexics prefer a visual style of learning, rather than a more formal written and reading format. If understood, the learning can</td>
<td>Appreciate individual differences, the key models of learner preferences and</td>
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<td>be improved by self-awareness and matching teaching styles to learning preferences.</td>
<td>learning styles, and their uses and limitations. Understand how to identify learning preference and how this may change with context. Appreciate how to teach dyslexic individuals to take advantage of their learning preferences.</td>
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<td>6</td>
<td><strong>Preparing materials for the dyslexic learner</strong></td>
<td>Teachers, lecturers and tutors usually present information in their own preferred style, which may not be suited to the learning preferences of the dyslexic individual. However, it is possible to adapt the materials to make them more accessible, on the principle that what is good for the dyslexic is good for all.</td>
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<td>Understand the diversity of learning environments and &quot;interfaces&quot;, and how presentation method influences learning. Appreciate how some learning environments can be adapted to the needs of the learner and other cannot. Appreciate that there are presentation guidelines which will be of benefit to the largest number of learners, but that this does not suit all. Understand the basics of how to present material to the dyslexic individual in the most user friendly manner, including web sites, e-learning and printed material.</td>
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<td>Lectures and tutorials: PowerPoint presentations: Paper based documents: Web sites and accessibility</td>
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<td>7</td>
<td><strong>Supporting the dyslexic learner</strong></td>
<td>Two types of support are important: a) support in learning and b) emotional support. Both are equally important. Assumptions are frequently made about how individual learn to learn.</td>
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<td>Understanding of the different types of support available including: basic skills (to improve literacy which helps access</td>
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<td>Counseling the dyslexic learner: Understanding and anticipating needs: Role of peer mentoring: Learning and study skills:</td>
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<td>Chapter</td>
<td>Title</td>
<td>Description</td>
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<td>8</td>
<td><strong>Multilingualism and the dyslexic learner</strong></td>
<td>Dyslexics have many problems with fundamental learning and study skills, which need to be explicitly taught. Materials: learning support (such as teaching how to learn and study, such as concept mapping, note taking and how to take exams); peer support (one-to-one and group); technological support (see Module 4). While much of what is written about identification and support of the dyslexic individual is with respect to the monolinguals, much of Europe operates in a multilingual environment. This creates additional layers of problem that need to be identified and addressed.</td>
<td>Appreciation of how dyslexia can manifest itself in different languages. Understand how testing will help to differentiate between the dyslexic individual and a person who had not had an opportunity to acquire adequate additional language skills. Understand how to develop an individual learning plan for these individuals, and how best to support them. Identifying the multilingual dyslexic individual: Problems of the multilingual dyslexic individual: Supporting the multilingual dyslexic individual</td>
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<td>9</td>
<td><strong>Dissemination and good practice</strong></td>
<td>A dyslexia friendly approach is not just the concern of one person - it is for all those working with dyslexic individuals. Dissemination of good practice to colleagues is an imperative to avoid isolated support. Institute wide sharing and support mechanisms are important, with due deference to the needs and the wishes of the dyslexic individual.</td>
<td>Understand that being dyslexia-friendly needs to go beyond just a few people, and that support needs to be institution wide, and not just at a department or individual level. Understand how institution policies can affect entrance criteria, contravene disability legislation and how examination Sharing good practice with colleagues: Developing dyslexic friendly institutions: Shared information and confidentiality with the dyslexic individual</td>
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<td>10</td>
<td><strong>Course and career guidance</strong></td>
<td>With motivation and appropriate support the dyslexic individual in not restricted in the career path they choose. However, it is important that understand what may be important issues, and how to offer appropriate advice.</td>
<td>Understanding that every dyslexic is different, and with appropriate support no job is beyond the capabilities of the dyslexic individual. Appreciation that there are some jobs which may require higher levels of writing skills and organizational skills which may be taxing on the individual, and may restrict promotion. Understand the difficulties dyslexic individuals may face if contemplating self employment.</td>
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<td>11</td>
<td><strong>Self-awareness and self-advocacy groups</strong></td>
<td>Peer groups can often provide support and guidance to fellow students and those with similar difficulties through the exchange of advice and the counseling process, as well as an enhanced self-awareness of the difficulties. However, critical masses are required, and they often require administrative support.</td>
<td>Understand the importance of self awareness and how advocacy groups can be useful for support. Understand the role of self-esteem in learning. Appreciate the steps involved in setting up and maintaining a self-advocacy group.</td>
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<tr>
<td>12</td>
<td><strong>Dyslexia and</strong></td>
<td>While the approach should be</td>
<td>Understanding how</td>
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</table>
with respect to social responsibility and empower those who seek the education, there is also a legislative imperative that needs to be addressed.

dyslexia fits in the national and EU disability legislation. Understand terms such as "reasonable accommodations". Appreciate the impact of failing to follow legislative guidelines. Understanding of the meaning of inclusion, and how it is about supporting the rights of individuals and not giving advantage to any one group.

considerations:
Disability legislation and the workplace:
Rights of the dyslexic individual:
National variations

Curriculum
12 Modules

12 Handbooks & Brochures for Trainers, Teachers, Managers, and Entrepreneurs

2 E-Books for Trainers, Teachers, Managers, and Entrepreneurs

ADysTrain Web Portal (English)

Resource Center

Center of Good Practices

Moderated E-Community

Trainer & Teacher

Blended Learning Pilot Workshops using Handbooks and E-Books

Manager & Entrepreneurs

Blended Learning Pilot Workshops using Handbooks and E-Books

Trainer, Teacher, Manager, Entrepreneurs, all interested parties

Handbooks, Brochures and E-Books
Target Groups: Trainer, Teacher, Human Resource Manager, Manager, and Entrepreneurs
Languages: 6 languages in total (English, German, Bulgarian, Spanish, Hungarian, Finish)
Communication: Offline (printed information over various channels; Online (Internet and CD-ROM if necessary)

Conclusion
By definition, the dyslexic individual has experienced difficulties in the acquisition of reading, writing and spelling competences. The amount of difficulties they still experience depends on the severity of the problems and the extent to which they have received support. It is possible in most cases to find strategies and alternative learning methods to overcome most of these literacy difficulties. A clear understanding of how these difficulties influence other areas of the daily life, such as the work environment or private life will allow coping strategies and support mechanisms. This leads to the final goal supporting the dyslexic individual to fulfill their inherited potential. This clear understanding starts with a good, context sensitive assessment of skills, needs, strengths, opportunities and weaknesses.

Every dyslexic is different, and should be treated as an individual. Many show talents actively sought by employers, such as good visio-spatial skills, an ability to think holistically and see the bigger picture, and good lateral thinking. But many have failed to be given an opportunity to demonstrate those talents since their poor literacy skills have restricted their opportunities in advancing vertically or horizontally in a firm’s hierarchy.

The same factors that cause literacy difficulties may also be responsible for highlighting positive attributes. For example, those difficulties solving a problem may faucet resources that lead to more originality and creativity - a talent often noted in the dyslexic individual. Some people suggest that these attributes are only discovered thanks to the difficulty acquiring literacy skills.

It is no longer the vision of the future but the reality of the present that only those who are able to follow rapid changes through continuous learning will obtain and retain a suitable job that utilizes their talents. Employers favor professionals who are able to progress further through ongoing training opportunities and are facing new challenges as opportunity to develop themselves further on the job ladder.

References
The crucial stakes of the University in France

Patrick Puppinck
SupEuropa, Colmar, France

1. What missions to reinforce?

Higher education in France is characterised by the duality Grandes Ecoles (French: grand schools) – University, very atypical of the rest of the world. This duality has turned into a divergence: on the one hand, the preparatory classes and grandes ecoles, practising an elitist selection, on the other hand, the universities, with no selection at all and intended to accept in their first cycles all the candidates willing to register, except for the best. This clash, this opposition between a hyper-selective and a completely non-selective system has reached today its breaking point. The integration of the French University within the European structures shows the absurdity of such a system. It may have been suitable for the after-war society, nevertheless it has become unacceptable nowadays. One is considered the way of excellence and takes the best school-leavers to well-established and highly equipped vocational branches: the 213 Grandes Ecoles. The other way has to assume the difficult task of providing the largest number of students with the means to have an access to a professional future and to educate the majority of the executive of the Nation. Shall we ever emphasize enough the role of social promoter played by an educational offer open to all? Shall we ever insist enough on the essential role of the University, seen as one of the few places where equality of chances could still develop? The accessibility of all social classes to higher education can generate a great mixing, an unequalled intellectual fertility that the country needs. Still, at present, these students are far from profiting of the same conditions as other students belonging to other institutions. On the other hand, the University has remained the only higher education institution that relates teaching and research, as well as the one that can maintain the best and most dynamic level of teaching, as compared to the evolution of society and economy.

All graduates of grandes ecoles find work, not because they are better, or more professionally trained, but because they are selected at the beginning of their studies. This makes the employers run no risk by hiring them. Therefore, employers cannot trust an university diploma that may belong to an excellent, as well as to a poor candidate that profited of the indulgence to which the ministry systematically pushed the school and university system, summoned to produce the largest possible number of graduates. Blackmail was practiced by the political power when dealing with universities, by means of the system of contractualization: the universities have to sell off the diplomas, or run the risk of losing their financing.

This policy, related to the pressure put on the jury of the Baccalauréat in order to have the highest percentage of success, made the universities face an unbearing dilemma: to survive, they have to lower the level. At the cost of compromise and efforts, they tried to arrange a fall in the educational standards required in the first cycle, showing an obstinate resistance in superior cycles. In spite of this, there are still certain departments where half of those registered in the first year do not finish the second semester. A serious selection, based on the results at the Baccalauréat, should be practiced at the admission in the first university
year. It should not aim at excellence, but prevent the failure of those with a lower level. Moreover, this would result in excellent consequences at the level of the highschool system.

The State cannot impose on the University the role of a service for future unemployed people: not only because it is immoral to play with young people’s life, but also because it is dangerous to turn a public institution from its purpose in such a degree, to pile work on it without giving it adapted means, to submit it to a pressure that it cannot bear. If we believe that the present-day society must absolutely prolong the period of education for a whole generation and that more years of training are necessary after the Baccalauréat at all levels of responsibility and in all domains, then a larger number of higher, non-university education institutions are required, especially vocational. There are some of these, more can be created.

Limiting oneself at subordinating the financing of the universities to the « employment opportunities » of their students means strangulating various departments. Financing must depend on a global assessment, where research and education are considered according to various criteria, one of them being the capacity to provide a qualified offer on the labour market. Nonetheless, this evaluation cannot be done by the financing institutions. An increased autonomy of the universities, if it remains within this frame, will not be a progress.

We live in a society where the relations between instruction and culture are distorted. People want to transform knowledge transmission in a mere job-training, whereas culture is transformed in a mere week-end stuff. The University, having the misfortune of being situated between the two, runs the risk of appearing useless. It has to fight against these two tendencies and show that, in its perspective, instruction and culture, without being separated, get a meaning for a lifetime. No one would dare assert nowadays that museums and lyrical theatres are useless, and still they involve high costs for the State. On the other hand, nothing hinders condemning university departments teaching art, literature, history, and all these useless things.

If one thinks how to get much closer the world of Education and that of work today, the solution is not to conceive initial training exclusively from the point of view of labour market requirements. Starting from every person’s aspirations and abilities, higher education must permit a fast and lasting insertion in quality jobs, favouring the climbing on the social ladder. This really means opening future perspectives for the youth.

The main stake for higher education structures is not looking for a cold adequacy between studies and work, but rather to provide the youth with all the bases they need in order to grow in a professional world which will necessarily face important changes, on account of technological and organisational evolutions.

2. The paradox of professionalization

Higher education has made serious efforts these last years in order to make training channels meet economic needs. There are even cases when universities proposed vocational training courses, without having the certainty that the teaching staff is prepared to deliver them well. On the other hand, one can also find an increasing number of professionals intervening in universities, without being necessarily able to have a pedagogical role within the university course.

This race towards study professionalization answers a legitimate concern to find opportunities for students. Still, it can only worsen the situation if one does not clearly define the role and the missions that fall on university structures and those that fall more directly on companies, in order to help young people know their job and their missions. A few years ago, the companies expressed this evolution of the role division by a simple phrase : « let the education educate and the company train». 
If professionnalization meant a greater strictness in the attribution of diplomas, therefore a requalification allowing the graduates to be better armed and more solid when they have to face the labour market, one would definitely adopt it. Also, if professionnalization involved the obligation of the universities to set up orientation and information institutional means for their first year students and for their graduates who approach the world of work, who would complain?

Unfortunately, the politicians that invite the University to professionalize often see this professionnalization as the passage from a general disciplinary to a specialized education. They consider that this specialization must be chosen and set up starting from precise market needs. Consequently, the method to follow would be easy: the State, after having listened to the wishes of the employers, plans higher education so as to cut dry branches (departments that do not lead to employment) and develop those departments that certainly offer job opportunities. The inadequacy found between the qualification of graduates and the needs of the labour market would thus find an answer in the adequacy postulated by a rigorous planning.

This is a speech that does not variate from a political side to the other. It is made of two antithetic elements: on the one side, a great confidence in the laws of the market, on the other hand, an even stronger confidence in the State’s ability to decode and control them. This typically French mixture is politically-oriented in its proportioning, but remains contradictory.

Various facts show the weakness of this argument. The University can provide the companies with a staff trained according to their precise demands at least 6 years after the moment when the company expressed its wishes. Can companies foresee which will be their exact needs in 6 years time or more? Not to mention the fact that the labour market asks for a great flexibility, a great capacity to adapt to its continual changes.

One sometimes has the feeling that certain university professors, especially from the literary fields, believe in economic foreseeability more than economists themselves and in professional specialization more than chemists or engineers. An improper understanding of humanities gives rise to a more anxious desire of professionnalization, proving that human sciences prepare for the labour market as well.

Can traditionnal disciplinary education provide a high level training, as well as flexibility, demanded more than ever by the working system? It is a question one may ask, but we seem to have already the answer of the universities that, during the previous years, have invested in new interdisciplinary vocational departments, to the detriment of general disciplinary education.

In the case of human sciences, should we close or reduce the departments leading to degrees in philosophy, history or literature and propose new ones in « cultural professions », « cultural mediation » or « intercultural negociation »? What does a new training of this type consist of? Of a patchwork of courses in sociology, psychology, history, law, foreign languages and civilizations. Each of these courses, addressing a non-specialized public, is necessarily basic and the sum of various initiations will never be a specialization. This is said without any contempt for the colleagues who, with the best intentions, invested their energy to create these branches: are we sure that we are not thus turning the University from its mission, which is to form adults capable of living and working in the society? Are we certain of not presenting to our students only a lure to attract them?

The paradox of professionnalization is that the same process runs the risk of leading scientific departments towards a strict specialization, which would confine every new graduate to a limited competence, and human sciences departments towards the opposite danger, namely an excessive generalization of a lower level, which would provide the graduate only with a sprinkling of elementary notions. This approach makes the disciplines lose their own function, on the one hand yielding to technical performance, on the other to
simplification.

The balance point between the two opposed demands – of specialization and of general education – must be found, and university disciplines can do it, if they know how to use their strong points and be open, without denying their essence. As it has reasonably been said so many times, interdisciplinarity involves disciplines and not their rejection.

The University has a vocational tradition, as it also has a disciplinary and an interdisciplinary tradition. The two main university departments ever, Law and Medicine, are directly related to professions and include in their teaching certain skills resulting from various other fields. Other departments followed these two during the centuries, more and more numerous and more and more important. Focusing on a subject, university departments took heed of the suggestions of the other disciplines. This can be confirmed by any degree paper, where one can see that students in literature study linguistics, students in psychology study statistics, those in history study geography, etc. On the whole, the balance is created around the central position of a discipline that guarantees the higher education level, as a discipline is, first of all, a skill assessment system.

The university-provided education runs the risk of losing its meaning by losing its disciplinary base; it is threatened by a harmful imbalance, if it falls in the double trap of the punctual technicity and of trivialization. The very idea of education has glided lately towards the model offered by the most rudimentary vocational training, as the one provided in teaching software. The University cannot follow this model, which would mean a profound decline. Professors selected on the basis of Doctor’s degrees and fundamental research can provide more than a precise technical skill. They should provide the large and solid base on which precise vocational acquisitions have the possibility to graft. We have to form people for a long life of work, not for a first employment.

What about the attitude of company owners, trying to charge the public institution with the training that they could provide to their staff within the company itself? One must not dream about a system where the State provides the companies with employees trained exactly on their most specific tasks. Such a perfection relies on a double utopia, that of a transparent market, in the manner of Adam Smith, and that of an omniscient State, in the manner of George Orwell.

One of the questions that university policies come against is that of student motivation. There are two theories at stake: certain people consider that students choose their field starting from a professional project, others affirm that the choice is made essentially on the basis of needs and personal interests, that are not immediately subordinated to a professional project. The first hypothesis is weakened by an observation: young people do not seem discouraged by the perspective of unemployment and saturate fields that do not offer a lot of job opportunities, on the contrary (for example, psychology). Henceforth the alternative: either the law of offer and demand does not apply for the labour market, or the young people try to find at University other things than a passage to employment. Probably the truth is mid-way between the two. Nevertheless, this subtle mixture of personal and professional motivations is the real enigma with which we are confronted. One can find mingled there economic constraints, fashion, personal qualities discovered in school, tastes developed outside it, secret aspirations, insatisfactions, needs, conformisms, rebellious feelings and everything that makes the desires of an eighteen-years old person something ridiculous to be reduced to a « professional project ». By their every-day experience, teachers are familiar with the impressive fragility of the complex edifice that is a student’s motivation. This fragility must be respected, and not ignored.

It is not within the missions of the University or other higher education structures to « professionnalize » the youth, namely to give them all the autonomy necessary to exercise their functions in the company. This can be done only by the progressive command of the concrete conditions of knowledge application, by the
understanding of the working system complexity. The complementarity, the role and the responsibility of the companies at this stage are essential. That is why the companies are entitled to expect that young graduates have all necessary skills to start this professionalization process. Irrespective of the type of course followed – so-called vocational or not –, a young person should not leave the university without having strong abilities to write, to provide arguments, to analyse a problem, to gather documentation, to use common informatic tools, to speak correctly a foreign language; moreover, to have transversal skills, essential for the exercice of a profession (communication, leadership, spirit of initiative and of entreprise, autonomy, etc..). Unfortunately, this is not always the case!

The work placement periods, which are now part of almost all training courses, constitute the opportunity to get familiar with professional life. Their generalization raises the problem of the possibility of reception in companies. Their time limit, often too short, as well as the insufficient follow-up of the trainees by the trainers, do not allow a real period of initiation to a profession. « Too many work placement periods kill work placements », which often become a sort of alibi within the university curriculum. If their development is fully justified within courses of study that constitute a phase of transition towards employment (for example during vocational Masters), or when they are perfectly integrated in vocational courses (for example, the caesura year proposed within most of trade or engineering schools curricula), it would be more suitable to better control their usage. It is preferrable to aim at professionalization by means of the alternance Company/University every time it is possible.

There are currently 62,900 trainee students within higher education in France and 31,600 of them depend on higher education establishments (against 12400 on 1/01/95).

For the young trainee, the experience of alternating the company and the training centre is a way to maturity: by the contact with professionnals and with the trainer, he/she practices knowledge and abilities in real time. This maturity is de facto meant to increase the student’s employment chances. The confrontation Theory / practice in different places can modify its relation with the teaching of general subjects, that lose their abstract side and find their full meaning. The acquisition of a first experience, the confrontation of the student with the demands of the labour world and with the status of being employed favour the later professional insertion. All specialities should specify the pedagogical approach that they want to develop. The stake is to define the conditions of a co-training between the company and the university, following the example of professionalizing institutions that have already experimented this way of training. The rhythm may variate from a department or a branch to another: 2 days of courses and 3 in the company, 15 days of courses, then 15 in the company. This involves, among other things, naming a pedagogical referent in charge with training coordination, exploiting trainees’ professional experiences after the periods spent in companies and building a training project together with the trainers. An unified procedure of formalization and follow-up of the trainees, taking into account the specificities typical of this level of training, is necessary in order to better identify this procedure within the branches.

The development of the training given partly in an educational institution and partly in the workplace is heartily approved of, especially by students. Be it a training attended under the status of a trainee with a work contract or a modality of instruction alternating university and company, the reflection must go deeper concerning pedagogical and organizational aspects, as well as regarding the assistance provided to students that try to find work placements and training contracts. The alternation can also take place on the scale of a professional career where different types of jobs and different periods of job adaptation are more and more alternated. The University must progressively assert itself as a tool of continuous training caracterised by excellence.
All things considered, everything should be done in order to change the current situation, where a large number of students have to face alone the challenges both of the university and of the world of work, being alone to draw a bridge between these two worlds. A progressive passage from the university to the world of work should be proposed to students. One has to pass from a vision where the student obtains a diploma first of all and afterwards heads for the world of work, to another vision, where the question of the professional insertion would be assumed earlier during university programme, thus allowing a less brutal and consequently more progressive approach.

Ideally, bridges between university and working worlds should be built in both directions: from the university towards the world of work, but also from the world of work towards the university. Therefore, the recognition of skills acquired through experience (V.A.E. system), as well as lifelong training must fully integrate in the offer strategies of higher education institutions. Everything possible must be done so that professional experience become a lever of activation and valorization of the diploma and also that every student should benefit from a progressive professional insertion, irrespective of his/her final level.

This aspect involves an essential transformation in the attitude of higher education structures themselves. These structures receive more than 60% of a generation. They cannot continue to function as if their vocation to spread knowledge and to take part in preparing tomorrow’s elite could exempt them from a great responsibility regarding the future of their students and the transition between the world of students to that of the professional life. Certain structures understood it perfectly and became largely open to these aspects. There are often the same which, during the development of continuous training or learning, managed to communicate more with the companies and the various professional sectors.

The success of professional insertion actions should be a part of the criteria of appreciation of universities’ success, in the same measure as the criteria of academic excellence.

3. Rethinking Orientation

Summerizing the educational life of a generation of young people in France, we have:

- 6 to 7% school leavers without qualification
- 93.5% access to level V
- 69% access to Baccalauréat level (level IV)
- 62% access to Baccalauréat
- around 50% access to the higher education
- around 40% access to a higher education diploma, wherefrom 40% with a bac+2 (Baccalauréat +2 university years) diploma and 60% with a diploma of at least bac+3 (Baccalauréat +3 university years)

The University receives a large number of high school graduates without an entry selection. This is considered both a strong and a weak point. A strong point, because the University participates fully in the democratization of higher education. A weak point, because too many students lack the information necessary to a proper orientation, which results in a high rate of failure, especially in the first year, which affects the reputation of the whole system and is socially unacceptable.

At present, there is no system of accompaniment allowing a continuous development of the university training, especially in case of failure. It is no longer acceptable to allow students to leave the university system in a situation of university failure, without another alternative proposal. The French educational system is today unable to help these
young people recover. Moreover, the students do not have all the same capacity to recover after a failure, which can be sometimes related to an orientation error. From a cultural perspective related to system knowledge, or sometimes from a financial point of view, the social environment becomes essential in the absence of a public system able to encourage study continuation.

Orientation at the beginning of higher education is certainly one of most important problems to solve. The student has just left a very well-controlled system, that of the highschool, and passes to complete autonomy. He/she cannot find its way. Not to mention those coming from poor families and having no support. The absence of orientation is a heavy shortcoming of our system, a huge failure. And it touches those who are successful and follow long universitary years as well, as they find themselves without a job. The failures of the system are well-known. It is, among other things, the orientation chosen by numerous foolish students towards certain departments (psychology, sociology, etc.), knowing that job opportunities are insufficient. In the end, only 10% of the high school graduates do not obtain a higher education diploma. Nevertheless, one should notice that university branches are not all equal in terms of results and professional insertion, following the big sectors: Sciences and Technologies / Health/ Humanities / Law-Economy-Management.

A good orientation is the key to have a successful training at the University. Orientation must be totally reconsidered as a continuous and gradual passage from University to Doctor’s degree and become universal. It should not be limited to school and university courses within the National Education system, but be open to other ways of instruction and vocational training. The consistency and synergy of the existing systems related to orientation and professional insertion is essential.

In order to meet the main stakes of the orientation and professional insertion, the text adopted on 13th of July 2007, concerning the autonomy of the French Universities, stipulates that all candidates are free to enrol in the institution they choose, after having asked for a pre-inscription and having benefited from the Information and Orientation system. Moreover, it establishes an “Office of assistance on students’ professional insertion’ in every university”.
Qualifications and stakeholders - The contribution of the Observatory on Europe-wide TAQC & MOLE: Lithuanian Higher Education Case

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On the 12th of November 2002 the Parliament of the Republic of Lithuania passed a resolution to approve the Long-Term Development Strategy of the State. The Strategy projects development of Lithuania, as a future EU member state, by identifying three priority areas: knowledge society, secure society and competitive economy. It is a national imperative to transform the country higher education system for the 21st century and state is responsible to design the goals and strategies to accomplish that. The higher education is the gateway to modern development of each country. In January 2005, the Lithuanian Government approved the Implementation Programme for the Provisions of National Education Strategy 2003-2012. This Programme highlights strategic guidelines for the educational reform and provides the implementation measures and resources in line with the Lisbon strategy. This programme was developed in line with the Long-term Economic Development Strategy of Lithuania until 2015 (2002) [1], the Single Programming Document for Lithuania of 2004-2006 (2004) [2], as well as the European memorandum on Lifelong Learning [3], European Employment Strategy [4], the Bologna Declaration [5], the main objectives for the educational development of European Union Member States until 2010, set up by the European Commission, Provisions of National Education Strategy 2003-2012 [6] and other documents.

The State and society shall seek to achieve the following key aims of developing education in 2003-2012:
- to develop an efficient and consistent education system which is based on the responsible management, targeted funding and rational use of resources;
- to develop an accessible system of continuing education that guarantees life-long learning and social justice in education;
- to ensure a quality of education which is in line with the needs of an individual living in an open civil society under market economy conditions, and the universal needs of society of the modern world;
- every citizen should have a possibility to study at a higher school by the chosen mode of study (distance, extramural or other), and more than 60 % of Lithuanian youth acquire higher university or non-university education;
- the people should have genuine opportunities for life-long learning, continuous update and development of their abilities; every year at least 15% of working age adult population undergo some kind of training or education activity;
- at least 85 % of working age population should have real opportunities and capabilities of using computer information technologies.

Existing to-day three tier educational system in Lithuania was implemented in the period of 1991-1992. The law introducing a binary system comes into force from September 2001 [7]. After the first basic, 4-year-duration studies students are awarded Bachelor’s or Engineer’s degree. The second tier after Bachelor’s, in 2 years leads to a Master’s degree or in one year after Bachelor’s Diploma engineer’s degree has been awarded. The third tier – 4-year doctoral studies after Master’s degree. In period of 1991-1995 the institutions of HE
developed majority of studies programmes, renewed the content of studies, introduced compulsory modules of humanities and social subjects. This reform helped for HE institutions to survive during the period of economic and social decline, when the number of students decreased from 18 students/1000 inhabitants 1990 – 1991 to 14 - in 1994 – 1995 [8, 9]. In 15 years of operation, the accepted system showed shortcomings and the result was the discontent of the society and universities themselves. Though the higher education reform under preparation is provoking discussions in the academic community, there is, however, a unanimous agreement concerning its aims: higher quality of studies and better funding. To achieve these aims, the working group at the Ministry of Education and Science prepared a draft plan of reform and development of higher education. The draft plan consists of several guidelines: reform of funding, improvement of internal management in higher education institutions and use of resources and conformity of study programmes to the labour market.

Higher education in Lithuania can be acquired only in higher education institutions. They offer non-university and university studies. Non-university studies are basic, one cycle studies. University studies consist of three cycles: first cycle (undergraduate studies), second cycle (Master studies, special professional studies) and third cycle (doctoral studies, MDs in residency, and art licentiate). The quality of study programmes as well as the quality of research and pedagogical activity carried out by the higher education institutions is periodically assessed by the Centre for Quality Assessment in Higher Education. In promoting the quality of studies, special attention is devoted to the regulation, external assessment and accreditation of structure and content of study programmes. The Diploma Supplement in higher education is issued from 1 January 2005 as an inseparable part of the Diploma. It is issued automatically and free of charge to all graduates of higher education institutions. The Diploma Supplement will facilitate the recognition of Lithuanian diplomas in foreign countries [12].

The universities student population from 1997-1998 until 2005-2006 increased twice, whereas financial support for one student (in GDP %) decreased twice too. Gradually the universities student population reached 54 students/1000 inhabitants.

In period before Lithuanian entrance into EU the unemployment ratio was quite high and government and society observed extensive growth of student population positively, without negative emotions. In this period has formed society opinion that higher education is as “obligatory” for youth successful career. This pressure was responded by universities - appear students studying free of charge, partly paid, paid full payment for studies. Growing student population encountered with worsening of study facilities and quality of studies. From professional education panorama there were sweep out technicums – institutions for middle range professional education. These institutions become higher non-university level education institutions offering bachelor and master degree education.

Entrance into EU coincides with growth of labour force emigration and economy encounters with shortage of labour resources. Business, industrialists, politicians started discussions about necessity of study reforms, appear publications that higher education reform never has been started, that for emerging situation are guilty universities. During the several years mass media escalate opinion: the state in higher education is unsatisfactory, quality of education fell down, many academics are over-aged, the universities management model is out-of-date, the corruption at the universities is flourishing, and the obscure financial operations are pursued.

The prepared by working group draft plan of guidelines define more clear state goals, identify state’s strengths and weaknesses, rethink funding and student aid system, estimate demographic trends, ect. State need long-term priorities for higher education that links higher education to overall state economic goals. It is difficult to articulate meaningful goals for state higher education systems without good information about upcoming population changes for the next 10 to 20 years. Over the years, states have reduced their
share of overall higher education costs, and as a result, the share of costs for students, families, and institutions has gone up. States should examine their financial aid programs to ensure that they are well balanced, reward students who are efficient. Ensuring that students get into higher education institutions is only half the problem. States should also ensure that students graduate. Study system reform should encourage innovation within the entire state higher education community. Adults going back to universities or colleges now represent students graduate. Study system reform should encourage innovation within the entire state higher education community. Adults going back to universities or colleges now represent a growing number of the student population. They have different needs than traditional students. New order should ensure that state money are spent productively and should demand that institutions become more efficient. Higher education institutions are expected to deal with a number of tasks of high importance for the country’s economy, culture, welfare, environment, and democracy. At the same time they are required to contribute to education and research of immediate benefit to working life in both public and private sectors. New legislation should help communication with business to better articulate expectations and outcomes. A 21st century education system should support opportunities for all citizens to participate in some form of post-secondary education or training.

Table 1. Bologna process stocktaking 2007

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Implementation in Lithuanian HEI</th>
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<tr>
<td></td>
<td>Score (max 5)</td>
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<tr>
<td>Degree system</td>
<td></td>
</tr>
<tr>
<td>1. Stage of implementation of the first and second cycle</td>
<td>5</td>
</tr>
<tr>
<td>2. Access to the next cycle</td>
<td>3</td>
</tr>
<tr>
<td>3. Implementation of national qualifications framework</td>
<td>2</td>
</tr>
<tr>
<td>Quality assurance</td>
<td></td>
</tr>
<tr>
<td>4. National implementation of Standards and Guidelines for QA in the EHEA</td>
<td>4</td>
</tr>
<tr>
<td>5. Stage of development of external quality assurance system</td>
<td>5</td>
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</tbody>
</table>
 Internal management of higher education institutions should be revised and study programmes should aim for quality, not quantity. The fragmentation of study programmes should be stopped and faculties should be enlarged. Studies of the same field should be concentrated in one faculty and not scattered across several faculties. This would ensure better use of intellectual and material resources.

International experts will be invited to evaluate activity of universities in different fields of studies. Centres of excellence will be identified and Master and doctoral studies will be concentrated there. Designers of the reform are raising the issue of the size of state universities and colleges and their distribution in towns, since it is hardly expedient to maintain several similar higher education institutions in the same town.

The design and use of the financing model for universities and colleges must support major educational and research policy goals and strategies. Quality considerations in education and research are best safeguarded by means of a financing system that emphasizes
the results attained. Control arrangements must result in better assurance that educational institutions develop and follow up quality development strategies in education and research and that they make efficient use of their resources.

In order to safeguard considerations regarding long-term research activities, breadth of academic provisions and maintenance of costly disciplines, the reform draft emphasizes that a performance-oriented component of the financing of research and teaching must be supplemented by the introduction of basic financing of educational institutions as a additional budget component.

The draft plan foresees tax advantages on study loans for young specialists employed in Lithuanian enterprises. They would get a tax refund to cover the costs of the loan. Another aspect of the funding reform is reduction of the duration of studies. The suggestion is that, in general, both cycles - Bachelor and Master - should not exceed 5 years. This duration of studies is recommended in the Bologna declaration. A new common degree structure is proposed, involving a lower degree on completion of three years of study (bachelors) and a higher degree building upon this to be awarded on completion of a further 1.5-2 years of study (masters). The higher degree (masters), which will build upon the lower degree, provides professional qualifications and/or qualifies for admission to doctoral studies.

All students should pay for studies. The state settles the amount of the support per student (grant and loan) and the total number of students supported. Higher education institutions are free to set the enrollment rate, i.e. decide upon the total number of students and the cost of studies. The support scheme have not ensure that low-income students have access to higher education. Government’s primary responsibility in higher education is to guarantee post-secondary education not for the wealthiest individuals but for all citizens.

Under running discussion are more aspects of university management:
- rectors election or nomination,
- status of university – state or public,
- principles of Board nomination.

The Ministers responsible for Higher Education in the countries participating in the Bologna Process, have met in London (2007) to review progress made since meeting in Bergen in 2005 [13]. Bologna Declaration signatory states have entrusted the implementation of all the issues covered by signed Communiqué to the Bologna Follow-up Group (BFUG). In accordance with latest BFUG document prepared for ministers London summit the Lithuanian HEI implement Bologna principles looks quite well (Table 1). The London communiqué declare that higher education should play a strong role in fostering social cohesion, reducing inequalities and raising the level of knowledge, skills and competences in society. Policy should therefore aim to maximize the potential of individuals in terms of their personal development and their contribution to a sustainable and democratic knowledge-based society. The student body entering, participating in and completing higher education at all levels should reflect the diversity of population.

Reformers see the Lithuanian HE institutions should be in the forefront of academic cooperation and student exchanges between countries. It is seen as a goal that all higher education institutions shall offer students a period of study abroad as a component of the Lithuanian degree course. It is important that the universities and colleges continue to develop their provision of courses held in English).

Reform stimulus in Lithuania are following: agreement among Government, President and political parties concerning necessity of Study and research reform; strive of government, society and business to create nucleus of knowledge economy; revised Lisbon strategy, focusing on research and knowledge creation; the financial tools of 2007-2013 EU structural fund sponsorship.

The components of planed reforms include: strengthening of science and business
interaction; renewal of research infrastructure; human resources quality development; research management system development; reformation of legal basis.

The system of state research institutes was reorganised several years ago. This reorganisation had aim to promote the integration of science and studies. A system of university research institutes was created allowing a more effective use of the national research potential for study purposes.

New development of research infrastructure will include creation of knowledge nucleus: studies, research and business valleys. For these tasks will be improved the co-operation among research, business, government and municipalities, updated laboratory equipment in key sectors of research, revised the research and study institutions network (small units will be joined into large, etc.), implemented coordinated development of business incubators and technological parks. Research activity should be supported according to the research programmes and scientific projects based on competitive principles. The part of national funding for research and studies is being increased within the state budget and is going to reach the EU average in the period of 5 years.

Was announced the following schedule of reforms:

Qualifications System and a Qualifications Framework

- Qualifications system is everything that leads to the award of a certificate and a framework is simply a relationship between qualifications (levels and types).
- A national qualifications framework is a way of showing the relationship between qualifications in a country or education or occupational sector. It is an instrument for the development and classification of qualifications according to a set of criteria for levels of learning achieved.
- All qualifications frameworks, however, establish a basis for improving the quality, accessibility, linkages and public or labour market recognition of qualifications within a country and internationally.

The frameworks for higher education qualifications describe the achievement represented by higher education qualifications. The Bologna process proposes that the EHEA is developed as a means of promoting mutual recognition of qualifications, demonstrating transparency of systems and easing the mobility of staff and students across higher education in Europe.

National Qualifications Framework (NQF) verification require:
- that learning outcomes be the basis of descriptors;
- a ‘self-certification’ process underpinned by international peer review supporting consistency and mutual trust;
- the inclusion of all national stakeholders, not only in education and training, but also involving the labour market;
- systematic coordination between national ministries and authorities;
- existence of systems for validation of non-formal and informal learning;
- robust, transparent and (internationally) trustworthy quality assurance mechanisms.

What is the state of Lithuania with regard to National qualifications framework’s?

Stage of development: ongoing work to develop a NQF Development takes place in a 3-year project (2006-2007). Pilot phase started in 2007;

Stated purposes: find the existing 5-level qualifications structure inadequate;
Structural detail: National qualifications framework will be based on learning outcomes. Necessary to include all stakeholders.

General results of survey

The employers’ survey

The analysis of the employers’ survey reveals what are the most valuable competences of the HE graduates. This survey covered about 1500 employers of Lithuania. 77.1% respondents indicated a competence of decision making and leadership as the key competences HE institution graduate should have, while competence to analyze and make research mentioned more than a half of the respondents (57.2%). Social communication competence is also among the most important ones (55.2%), creativeness and self development are also marked competences.

Employer pays very much attention to the personal character or competences of the employee. From the point of view of the employers, self confident, ready to learn and seek for the best results as well as accurate, honest and able to concentrate to the performed activity, self-sufficient and responsible person – is a typical portrait of the most wanted HE graduate as an employee in almost every company in Lithuania.

HE institutions and all the people involved in study process seek to provide and get information about correspondence of graduates’ competences and level of their knowledge to labour market requirements. The most of the information about the competences’ level and demand is provided by the potential employers and former students. In fact there is a tendency that employers demanding a big portfolio of competences are not ready to contribute to the process of gaining required skills and competences for the students and graduates. Here we can mention internships that now in most cases are organized unproductively. Employers themselves do not pay great attention to the process of the development of social competences. VGTU’s experience in cooperation with employers shows that still there is a lot of possibilities in this field. The University by the help of public relations could advertise its activities, inform employers about professional and social competences of the graduates as well as involve employers in to new initiatives via projects and conferences. On the other hand employers and especially associations of the employers could pay more attention to cooperation with HE institutions while seeking correspondence of graduates’ professional and social competences to their requirements. And it is very important that employers together with HE institution make all the efforts in order to prepare high qualified young people to the labour market while challenging future perspectives.

Survey was accomplished according to the Questionnaire for employers, company owners.

In this survey covered 75 department directors (50 male, 25 female persons) from various Vilnius business companies.

The main characteristics of respondents were these:
1) 9.33 percent 25 year old and younger, 90.67 percent senior than 25 year old;
2) Majority of respondents have been employed in current company for more than 3 years.
Respondents were given to answer 16 questions. Than answers were generalized and key results discussed:

1. Survey showed, that majority of employees worked as managers or manager’s assistants.

2. More company owners demanded for employees with master degree. Also, many employers considered that degree is not the key factor accepting an employee.

3. Majority of company owners considered, that specific job position conditionally required the degree or the qualification that employee attended during the education period. But it was not the main factor accepting an employee.
4. As the chart below shows, employers usually take into consideration other documents referring to the educational background of the employee.

5. Respondents tried to assess, using a 5 points scale, what level of needed qualification they acquired during their education program. As the chart below shows, that knowledge and professional competences were mentioned as key qualification elements of very high level in 5 points scale. Personal skills development had the average level among analyzed elements. General competences had rather low level compared with key elements mentioned.
6. Even 93 percent of respondents appreciated *very high* relevance of their qualification for performing the actual job. In contrast, graduated persons appreciated *average* relevance of their qualification for performing the actual job.

7. Employers’ evaluations of employee’s level of qualification were based upon these factors:
1) firstly, upon the level of comfort in performing specific job activities;
2) secondly, upon the level of performance in specific courses;
3) thirdly, upon performance achievements in this job.

8. The chart below shows, how respondents evaluated the gap between qualification elements, required in current job and gained during employee’s education period. Special attention was payed to personal skills development and general competences.
9. Majority of respondents mentioned communication and responsibility as the most important/desirable personal and professional competences for their employee’s job position.

10. Nearly all companies offered professional training for their employees in order to increase their performances for the current job.

![Offering a professional training for employees](image)

11. Even 86.67 percent respondents mentioned, that their employees had acquired additional competences/knowledge important for the successful performance of their job activities, mostly in the ways of formal and informal on-the-job training and additional learning.

![Ways of acquiring additional competences/knowledge, %](image)

12. 57 percent of respondents considered that the education system prepared their employees quite well for the labor market.
13. In general, all the respondents were satisfied with the overall level of quality of their employee’s work.

**The employees’ survey**

In this survey participated 75 graduated and employed (23 male, 52 female) persons from Vilnius, the capital of Lithuania. The main characteristics of respondents were these:
1) 20 percent 25 year old and younger, 80 percent senior than 25 year old;
2) 80 percent had master, 20 percent bachelor degree in business management;
3) Majority of respondents have been employed as managers in different fields or manager assistants in current company for 1-3 years. Only 8 percent of respondents were persistent and have been devoted more than 5 years in current company.

Respondents were given to answer 17 questions. Than answers were generalized and key results discussed.
1. 73,33 percent of respondents proposed that the degree or the qualification that
they obtained during their education was mandatory.

The degree or qualification obtained is mandatory

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<th>Yes</th>
<th>No</th>
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<tr>
<td>27%</td>
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<td></td>
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<tr>
<td>73%</td>
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2. Respondents tried to assess, using a 5 points scale, what level of needed qualification they acquired during their education program. As the third chart shows, that knowledge and professional competences were mentioned as key qualification elements of very high level in 5 points scale. Personal skills development had the average level among analyzed elements. General competences had rather low level compared with key elements mentioned above.

Level of needed qualification acquired during education program, %

<table>
<thead>
<tr>
<th>Level of needed qualification acquired during education program, %</th>
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<tbody>
<tr>
<td>4. Personal skills development</td>
</tr>
<tr>
<td>3. Professional competences</td>
</tr>
<tr>
<td>2. General competences</td>
</tr>
<tr>
<td>1. Knowledge</td>
</tr>
<tr>
<td>84</td>
</tr>
<tr>
<td>90.67</td>
</tr>
<tr>
<td>66.67</td>
</tr>
<tr>
<td>93.33</td>
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</table>

3. Even 80 percent of respondents appreciated average relevance of their qualification for performing the actual job.
4. Mostly, evaluations of respondents’ level of qualification were based upon these factors:
1) firstly, upon the level of comfort in performing specific job activities;
2) secondly, upon the level of performance in specific courses;
3) thirdly, upon performance achievements in this job.

5. The chart below shows, how respondents evaluated the gap between qualification elements, required in current job and gained during education period. Special attention was payed to personal skills development and general competences.
6. Only 20 percent of respondents had Diploma Supplement. Also none of them proposed, that their current job was in accordance with the occupations mentioned in this document.

7. Majority of respondents mentioned communication and responsibility as the most important/desirable personal and professional competences for their job position.

8. 76 percent of respondents have participated in professional training.

9. Even 94,67 percent respondents have acquired additional competences/knowledge important for the successful performance of their job activities, mostly in the ways of formal and informal on-the-job training and additional learning.
10. 72 percent of respondents considered that the education system prepared them not well for the labor market. It is the most critical problem of Lithuania’s education system. Students usually get much theory during their lectures, but they need more practice.

References


Econometric evaluation of education systems

Jozef Dziechiarz, Anna Blaczkowska, Alicja Grzeskowiak
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1. Introduction

The analysis of education systems should concern both qualitative and quantitative aspects. Such a comprehensive approach should create the possibilities of current state observation, progress evaluation and forecasts formulation. The results of the analysis may support the attempts at controlling important processes in education field. This part of the report is intended to introduce econometric and statistical methods, especially multivariate, to the analysis of education systems in European Union countries. The edification must be considered comprehensively, from the lowest level (nursery schools) up to tertiary education institutions. The evaluation of education quality and accessibility ought to be associated with demographical analysis and forecasts concerning the number of persons potentially interested in education. The education systems features may be analyzed at different levels of aggregation: regional, national or international on the condition that the requisite data is provided. This study is focused on diversity, allocation and concentration of chosen educational attributes. The disparities concerning main education indicators were examined at an international level. The analysis of distribution and concentration was carried out at national (Poland) and regional (Lower Silesia) stage as an example.

2. Methodology

The construction of an econometric model demands an appropriate dataset. This scrutiny was performed on the grounds of the indicators formulated in Lisbon strategy and published in European Commission Staff Working Papers. The analyses at national and regional level demanded more detailed data provided by national and regional statistical offices.

The most general international comparisons were obtained by applying multivariate techniques to a set of indicators representing five benchmarks in education and training:

- Key Competences,
- Early School Leavers,
- Completion of Upper Secondary Education,
- Graduates in Mathematics, Science and Technology,
- Participation in Lifelong Learning.

The quantitative representation of these benchmarks is given by a group of indicators, respectively:

- percentage of pupils with reading literacy proficiency level 1 and lower in the PISA reading literacy scale (Benchmark 2010 = 15.5%),
- share of the population aged 18-24 with only lower-secondary education and not in education or training (Benchmark 2010 = 10%),
percentage of those aged 20-24 who have successfully completed at least upper-secondary education (Benchmark 2010 = 85%),

- total number of tertiary graduates from mathematics, science and technology fields (Benchmark 2010 = 783 000),
- percentage of population aged 25-64 participating in education and training in the four weeks prior to the survey (Benchmark 2010 = 12.5%).

The benchmark concerning the number of tertiary graduates in mathematics, science and technology is the only one formulated in absolute values for the whole European Union. A relative indicator was used instead to make the international comparisons possible (Number of tertiary graduates in MST per 1000 inhabitants aged 20-29).

The Lisbon strategy introduced more indicators but not everyone is recorded in all member states what causes difficulties in multivariate analyses due to the lack of data.

The analysis of allocation and concentration at the national level was based on following variables:

- number of tertiary education institutions in 2006:
  - public universities/academies (60),
  - public vocational (35),
  - non-public universities/academies (198),
  - non-public vocational (147),
- number of potential students in 2006:
  - women and men aged 19-24 in urban areas,
  - women and men aged 19-24 in rural areas.

The education systems evaluation comprises results of econometric and statistical multivariate techniques, spatial distribution analysis and concentration analysis.

Multivariate methods allow analyzing many variables simultaneously. As different techniques give answers to different questions, four of them were applied in this research:

I. Linear ordering procedures
   II. Multidimensional scaling
   III. Cluster analysis

Discriminant analysis

I. Linear ordering procedures (taxonomic methods)

Purpose: creation of rankings according to many variables simultaneously.

Method 1: construction of development measure without a standard pattern

Steps of the analysis:

1. Determination of variables character (stimulis, destimulis, nominants).
2. Unification of variables character.
3. Standardization of variables.
4. Calculation of the synthetic measure:

\[ m_i = \frac{p_i - p_{-0}}{p_0 - p_{-0}} \]

Where:

- \( p_i \) – standardized value for object \( i \),
- \( p_0 \) – sum of standardized values representing the best results,
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\( p_{-0} \) – sum of standardized values representing the worst results.

5. Ranking creation.

6. Comparison of several rankings (optional) – Spearman rank correlation coefficient.

Results interpretation:

The synthetic measure (\( m_i \)) takes values from interval \( \langle 0,1 \rangle \). The higher values of the measure \( m_i \) the better position of the object. If two rankings are created according to the measure \( m_i \), their concordance may be compared by applying Spearman rank correlation coefficient that also takes values from interval \( \langle 0,1 \rangle \). Its values close to 1 indicate high results consistency.

**Method 2: construction of development measure with a standard pattern**

Steps of the analysis:
1. Determination of variables character (stimulus, destimulus, nominants).
2. Standardization.
3. Determination of the pattern.
4. Calculation of development measure:

\[
    m_i = 1 - \frac{d_{i0}}{d_0}
\]

where:
- \( d_{i0} \) – distance between object \( i \) and the pattern,
- \( d_0 \) – distance between the pattern and anti-pattern.

5. Ranking creation.

Results interpretation:

The interpretation is similar as in method 1. The difference is in constructing the development measure. Method 2 is based on a pattern, which is an artificial object with “best results”. The development measure (\( m_i \)) is based on the distance between a particular object and the pattern. The measure \( m_i \) takes also values from interval \( \langle 0,1 \rangle \). The higher values of the measure \( m_i \) the better position of the object, as in method 1.

II. **Multidimensional Scaling**

Purpose: construction of a ‘map’ showing the relationships between objects

Steps of the analysis:
1. Calculation of (Euclidean) distances between the individuals.
2. Determination of the number of dimensions.
3. Initial configuration setting.
4. Finding configuration that minimizes Kruskal STRESS (Standardized Residual Sum of Squares) formula:
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\[
\text{STRESS} = \frac{\sum_{i,j} (d_{ij} - \hat{d}_{ij})^2}{\sum_{i,j} d_{ij}^2} \rightarrow \text{min}
\]

5. Evaluation of goodness of fit.
6. Analysis of proximities between objects spatially in the obtained ‘map’.

Results interpretation:

The method is used to create a ‘map’ of units by reducing the number of dimensions. The transformation leaves the original distances configuration undisturbed as much as possible. The goodness of fit can be evaluated by STRESS (0% perfect fit, 0–2% very good fit, 2–5% good fit, 5-10% medium fit, 10-20% poor fit, more than 20% – very poor fit). The reduction of multidimensionality allows the researcher to observe the positions of objects on the plane (if the transformation was done to 2 dimensions) or in space (if the transformation was done to 3 dimensions).

III. Cluster Analysis

Purpose: grouping the objects into classes so that ‘similar’ ones are in the same class

Method 1: Ward’s hierarchic procedure

Steps:
1. Calculation of (Euclidean) distance matrix between individuals.
2. All objects start by being alone in groups of one.
3. The closest objects form groups; the proximity is calculated according to the formula:

\[
d_{R,P+Q} = \frac{N_R + N_P}{N_R + N_P + N_Q} d_{RP} + \frac{N_R + N_Q}{N_R + N_P + N_Q} d_{RQ} - \frac{N_R}{N_R + N_P + N_Q}
\]

where:
\[
d_{RP}, d_{RQ} - \text{distances between groups R, P, Q}.
\]
\[
N_R, N_P, N_Q - \text{number of objects in groups R, P, Q respectively}.
\]
4. Next groups are merged until all objects are matched.
5. Dendrogram is derived as a graphical illustration.
6. Final groups are created by division of denrogram.
7. Comparison of several classifications (optional).

Results interpretation:

The dendrogram built by the agglomerative hierarchic process described above shows all stages of groups formation. The analysis of the length of the ‘branches’ of the tree provides information on the number of final groups to be distinguished. Than the relationship between different groups can be examined.
Method 2: k-means procedure

Steps:

1. Calculation of distance matrix between individuals.
2. Number of groups definition.
3. Random objects allocation.
5. Allocation of an object to another group if it is closer to this group center.
6. Recalculation of the centers.
7. Iterative continuation of the process until stability is achieved, i.e. when:

\[ \sum_{k=1}^{K} \sum_{i \in C_k} \sum_{j=1}^{m} (z_{ij} - v_{kj})^2 \rightarrow \min \]

where:
\( z_{ij} \) – standardized value of variable \( j \) for object \( i \),
\( v_{kj} \) – element of the center of group \( k \) for variable \( j \).

Results interpretation:
Obtained groups are as much homogeneous as possible. Objects belonging to a specific group vary from the others essentially.

IV. Discriminant Analysis

Purpose: evaluation of possibility of separation two or more groups of objects.

Steps:

1. Groups definition.
2. Estimation of discriminant functions:

\[ Z_1 = a_{11}X_1 + a_{12}X_2 + ... + a_{1p}X_p \]
\[ Z_2 = a_{21}X_1 + a_{22}X_2 + ... + a_{2p}X_p \]
... 
\[ Z_q = a_{q1}X_1 + a_{q2}X_2 + ... + a_{qp}X_p \]

3. Evaluation of discriminant functions.
4. Evaluation of discriminant variables.
5. Calculation of discriminant scores and graphical presentation.

Results interpretation:

After deriving discriminant functions, canonical values (discriminant scores) are calculated for objects, what creates a possibility of a graphical presentation of individuals’ configuration. The discriminant functions may be evaluated on the basis of the proportional participation of a given function in the discriminatory power of the whole set. Total structure coefficients bring information about the dependence of the given diagnostic variable and the discriminant function – the closer to 1 the absolute value of the coefficient, the stronger
connection between the variable and the function.

The spatial analysis can refer to disparity, allocation and concentration of chosen features. The allocation of a phenomenon can be examined by using Florence distribution ratio:

$$F = \frac{\sum_{i=1}^{k} (S_i - U_i)}{100} \quad \text{for} \quad S_i - U_i > 0,$$

where:
- $S_i$ – percentage of first examined phenomenon according to a spatial unit,
- $U_i$ – percentage of second examined phenomenon according to a spatial unit,
- $i = 1,2,...,k$ – number of spatial units.

Thresholds for Florence ratio are as following:
- $F < 0.25$ - the examined phenomenon is characterized by a high allocation level,
- $0.25 \leq F \leq 0.49$ - the examined phenomenon is characterized by a medium allocation level,
- $F > 0.49$ - the examined phenomenon is characterized by a low allocation level.

The degree of concentration can be evaluated by Lorenz coefficient of concentration:

$$k = \frac{5000 - \sum_{i=1}^{k} \left( \frac{x_i + x_{i-1}}{2} \right) \cdot n_i}{5000}$$

where: $0 \leq k \leq 1$ (0 – perfect equality, 1 – perfect inequality)

and:
- $x_i$ – cumulative percentage of examined phenomenon for $i$-th spatial unit,
- $x_{i-1}$ – cumulative percentage of examined phenomenon for $(i-1)$-th spatial unit,
- $n_i$ – percentage of phenomenon, for which concentration is examined in $i$-th spatial unit.

3. Results

The Five European benchmarks adopted by the Council in May 2003 are usually examined separately. Report 2005: Progress Towards the Lisbon Objectives in Education and Training states that “The five European benchmarks (...) still pose a serious challenge for EU education and training systems. In the fields of increasing participation in lifelong learning and decreasing the proportion of low achievers in school education, the EU has made little progress up to 2003. In terms of early school leavers and completion of upper-secondary education some progress has been registered (...). However, the benchmark set for the increase in the number of maths, science and technology graduates has already proved more than manageable.” These trends can be easily caught in fig.1.
The performance of member states in the fields of single benchmarks can be presented on the charts (fig. 2).

**Figure 1.** Progress against the five benchmarks (EU Average).
Source: own computations.
The achievements vary from country to country. The best and most uniform situation is observed for upper-secondary completion. Essential disproportions occur in lifelong learning participation. A lot of effort must be done in Bulgaria and Romania to limit early school leavers and improve key competences of pupils. The comparison of states is simple when one feature is considered but the educational competitiveness is a comprehensive matter demanding regarding many features simultaneously. Moreover, variables may be interrelated in such a way that their effects cannot be interpreted separately. From an analytical perspective the education is a multivariate system, thus econometric and statistical multivariate methods are appropriate to study the processes.

Multivariate analyses were carried out for those member states, for which a complete set of data was available. Some UE countries did not participate in PISA scrutiny evaluating students’ competences and for that reason they were not taken into consideration in this study (Cyprus, Estonia, Lithuania, Malta, Slovenia).

The Spearman rank correlation coefficient for these two arrangements is equal to 0.936 what indicates that the rankings have not changed significantly. The most stable situation occurred among states with the highest values of development measure (Finland, Sweden, Ireland, United Kingdom) where the advantageous situation in the field of education was kept in the examined years. The biggest change took place in case of Slovakia that fell down seven positions in the ranking, what can be regarded as a warning signal. Other states either did not change their positions or the changes were not so meaningful (1 – 3 positions).

The application of non-pattern synthetic measure resulted in rankings of states according to the realization of five basic educational purposes (fig.3).
Multidimensional scaling uncovered the configuration of countries according to their performance in the field of five educational benchmarks (fig. 4).

**Figure 3.** Rankings according to achievements in five European benchmarks. Source: own computations.
Figure 4. The two-dimensional ‘maps’ produced by the multidimensional scaling analysis for the five benchmark achievements.
Source: own computations.

The configuration showing points in two-dimensional space revealed the existence of one outlier (Portugal) lying far away from other objects. Moreover, it is a member that took the last place in rankings (fig. 3). In the year 2003 Spain was also marked by results varying essentially from the effects of other states. It is possible to notice close positions of new EU states (e.g. Bulgaria and Romania or Poland, Czech Republic, Slovakia and Hungary). The best performers are located extremely to the right (high values of the first dimension), i.e. Scandinavian countries, Ireland and UK.

Cluster analysis was applied to find out how many homogeneous groups can be distinguished. The dendrogram formation is presented in fig. 5.
Figure 5. Groups formation (Ward’s hierarchic procedure) according to the five benchmark achievements. Source: own computations.

The course of agglomeration process shows the possibility of creation three groups because linkage distances are increasing rapidly afterwards. The way of the division was marked in the figure with the red line. Only three states changed the group from the year 2000 to 2003 (Italy, Latvia and the Netherlands). The classification stability is also proved marked in the figure with the red line. Only three states changed the group from the year 2000 to 2003 (Italy, Latvia and the Netherlands) is located on the left side of the plot and is joined to the others in the last step of the agglomeration what indicates substantial dissimilarities between this group members and other UE countries.

Discriminant analysis was carried out for three classes obtained in hierarchic procedure in order to check whether considered five features separate created groups distinctively. The plots of canonical values, the structure coefficients and the discriminant power indicators are presented in fig. 6 and fig. 7.

Plot of canonical values

First canonical discriminant function values
Total structure coefficients

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Canonical function</th>
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<tbody>
<tr>
<td></td>
<td>First</td>
</tr>
<tr>
<td>Early leavers</td>
<td>-0.37</td>
</tr>
<tr>
<td>Completion upper secondary</td>
<td>0.20</td>
</tr>
<tr>
<td>Key competences</td>
<td>-0.48</td>
</tr>
<tr>
<td>Longlife learning</td>
<td>0.41</td>
</tr>
<tr>
<td>Graduates MST</td>
<td>0.40</td>
</tr>
</tbody>
</table>

Functions discriminant power

<table>
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<tr>
<th></th>
<th>First function</th>
<th>Second function</th>
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<td></td>
<td>73.3%</td>
<td>26.7%</td>
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**Figure 6.** Discriminant analysis results according to the five benchmark achievements in 2000.
Source: own computations.

First discriminant function (on the X axis) represents over 70% capability of the separation of the examined objects. This function is strongly correlated (high absolute values of structure coefficients) with key competences, longlife learning and MST graduates. These three features separate the group marked with red squares from the group marked with blue circles considerably. By contrast, the group marked with green triangles takes low values of the second discriminant function (on the Y axis) connected with early leavers and upper-secondary completion what suggests that these two aspects keep this group apart from the others.

Plot of canonical values
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The availability of tertiary education can be evaluated generally by a simple intensity indicator (fig.8).

Figure 8. Number of tertiary education institutions per 1000 persons aged 19-24 in Polish regions (voivodships). Source: own computations.

<table>
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<tr>
<th>Indicator</th>
<th>Canonical function</th>
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<tbody>
<tr>
<td></td>
<td>First</td>
<td>Second</td>
<td></td>
</tr>
<tr>
<td>Early leavers</td>
<td>0.20</td>
<td>0.66</td>
<td></td>
</tr>
<tr>
<td>Completion upper secondary</td>
<td>-0.11</td>
<td>-0.45</td>
<td></td>
</tr>
<tr>
<td>Key competences</td>
<td>0.28</td>
<td>0.33</td>
<td></td>
</tr>
<tr>
<td>Longlife learning</td>
<td>-0.31</td>
<td>-0.05</td>
<td></td>
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<tr>
<td>Graduates MST</td>
<td>-0.46</td>
<td>0.26</td>
<td></td>
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<tbody>
<tr>
<td>First function</td>
<td>78.9%</td>
<td></td>
</tr>
<tr>
<td>Second function</td>
<td>21.1%</td>
<td></td>
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</tbody>
</table>

Functions discriminant power

Figure 7. Discriminant analysis results according to the five benchmarks achievements in 2003/04.
Source: own computations.

Plot of canonical values for the year 2003/04 reveals that changes appeared in education systems. Two features: longlife learning and graduates in MST are significantly associated with the first discriminant function which represents almost 80% capability of the division of the examined objects. A clear separation of the group marked with blue circles can be noticed when regarding these features (X axis values). The second discriminant function correlated remarkably with early leavers and completion of upper-secondary education separates group marked with red squares from the group marked with green triangles (Y axis values).

The allocation and concentration analysis of tertiary education was performed at the national and regional level in Poland. The availability of tertiary education can be evaluated generally by a simple intensity indicator (fig.8).
Intensity indicators show that the best situation in the field of availability of tertiary education exists in mazowieckie and podlaskie voivodships (central-eastern and north-eastern part of the country). Poor accessibility occurs in south-eastern regions and in the lane from lubuskie to warminsko-mazurskie voivodship.

To evaluate the condition of regions more thoroughly development measure with a standard pattern was calculated (fig.9)

![Graph showing development measure with a standard pattern](image)

**Figure 9.** Tertiary education institutions allocation in relation with persons aged 19-24 by voivodships in Poland in 2006

Source: own computations

Two parallel lines demonstrate the typical interval that was determined by utilizing the formula: the mean of the development measure ± standard deviation of the measure. Three regions are developed extraordinarily, especially mazowieckie voivodship. Two voivodships have much poorer educational offer than the others (lubuskie and opolskie).

Another multivariate technique, i.e. k-means procedure was applied to acquire homogenous groups of regions (fig.10).

![Map of Poland showing regional distribution](image)

**Figure 10.** k-means clustering results for voivodships in Poland. Source: own computations.
Polish voivodships were divided into three consistent groups. Underinvestment of northern regions can be noticed instantaneously. The groups were labeled (best, average, worst) according to the values of the development measure. Additional information about the allocation and concentration of tertiary education was received by utilizing Florence allocation ratio and Lorenz concentration coefficient. Florence ratio calculated for the whole country is equal to 0.13 what indicates high allocation level (fig. 11). No particular concentration of tertiary education institutions is observed.

The availability of schools is good for potential students. Certainly, in mazowieckie voivodship, where the capital is located the offer of the universities is richer than anywhere else. The worst performers in this field are lubuskie, opolskie and warminsko-mazurskie voivodships. However, the mobility of young people aged 19-24 is sufficient enough to use the offer of neighbouring regions or even universities situated far from the dwelling place.

Florence ratios vary with each type of tertiary education institutions. The worst distribution with \( F = 0.44 \) (the most intense concentration) characterizes non-public universities/academies. Public vocational universities are next with \( F = 0.34 \). Non-public vocational universities are marked by the similar, somewhat smaller Florence ratio (\( F = 0.32 \)). Finally public universities/academies are identified as the best distributed (\( F = 0.16 \)). To conclude, rather small concentration indicates high tertiary education accessibility therefore potential students have wide and diversified educational offer. Similar results were obtained on the basis of the Lorenz concentration coefficient (k), which takes value 0.18 for Poland what indicates a very uniform distribution of tertiary education institutions in the relation to number of potential students according to the Polish voivodships. This equality is reflected also on the Lorenz curve (fig. 12)
Figure 12. Lorenz curve: concentration of tertiary education institutions in relation to persons aged 19-24 according to the regions in Poland. Source: own computations.

The analogous analysis conducted for lower level administrative units gives the possibility to evaluate the allocation and the concentration in a particular region (as an example Lower Silesia – Dolnoslaskie voivodship was considered – fig. 13).

Figure 13. Distribution of tertiary education institutions in units representing the second level of local administration in Lower Silesia region. Source: own computations.

Florence ratio (F=0.45) indicates medium allocation level in Lower Silesia region. The concentration of academic institutions in Wroclaw (capital of the region) is indisputable, but it also emerges in administrative districts lying in the lane from the north-western to the...
The only limitation is statistical data availability. Permit confronting educational offer with labour market needs.

The analysis was supplemented by Lorenz concentration coefficient and Lorenz curve (fig. 14).

**Figure 14.** Lorenz curve: concentration of tertiary education institutions in relation to persons aged 19-24 according to the districts in Lower Silesia

Source: own computations.

Lorenz coefficient equal to 0.54 denotes significantly bigger concentration in Lower-Silesia administrative districts than in the whole country. This phenomenon is also proved by the Lorenz curve (marked blue in fig.14) showing much more remarkable deviation from the equality line as compared with fig.12.

4. Conclusions

Econometric and statistical analysis turned out to be very useful in analyzing education systems. Special attention should be focused on multivariate techniques as they provide additional information in comparison with univariate or bivariate analysis. Methods applied in this scrutiny are quantitative and therefore objective. Multivariate approach allows examining complex phenomena comprehensively. Moreover, the results can be lucidly shown in a simple graphical presentation. One of the most important advantages of this methodology is the possibility to present objects characterized by many variables in two-dimensional space as a result of dimension reduction.

Presented methods allow evaluating the attractiveness of a particular object (educational unit) in relation with the others or with the development pattern. Current analysis of the position should be helpful to adjusting its attributes in the future. Suggested techniques **give the description of phenomena and create forecasting possibilities. The evaluation and prediction of the situation should support the control of processes and improve usage of existing and future potential of educational systems.**

All analyses may be performed at various levels: international, national or regional. The only limitation is statistical data availability.

The **spatial analysis allows detecting regions, which demand investments in education sphere.** Adjustment of other variables e.g. concerning labour market would permit confronting educational offer with labour market needs.
Higher education qualifications in Romania\(^2\)
- Recent trends art -

1. Values and principles

The fundamental aspect that focuses the experts’ attention in a first stage of CNCIS development refers to the necessity of definition of the *structural complex* and the *functioning values and principles*. In this respect, the framework should be transparent, coherent and significant for all the categories of people interested: students, graduates, teaching staff, the civil society as a whole. To support this approach, a set of common values and principles needs to be identified (fig. 1) which will have the role to guide the complex process of CNCIS drawing up, implementation and permanent updating.

![Diagram of values and principles]

**Fig. 1** Common values and principles needs to be identified

**a) Evenness and accessibility**

CNCIS will contribute to the development of an inclusive society capable to offer equal access opportunities to education, completed through the certification of the qualification. The key to success is to share the feeling of responsibility by life-time learning by all the categories interested, so that the development of a society is facilitated wherein all the individuals have the possibility to develop their own potential to the maximum. And this, in its turn, will guarantee the fact that the educational offer will be grounded on the needs and demands of the individual.

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\(^2\) As presented in the consultative document addressed to the Universities by the Ministry of Education, Research and Youth - ACPART
b) Comprehension and coherence

CNCIS should sustain the development and recognition of all types of qualifications/titles, as well as the setting up of the coherent relationships among them (on the vertical - among studies cycles and on the horizontal – inside a class of qualifications depending on the field). The clearness of this framework will lead to the increase of the qualifications’ value from the interested categories’ point of view. This approach offers in its turn the possibility of some alternative development routes of the progress in the university road-map.

c) Transparency and simplicity

It is utmost that all the CNCIS elements be completely visible and readable. The relationships among all the CNCIS elements should be logical, clear and intelligible, so that both students and employers have all the necessary data to compare the qualifications. The need of guaranteeing the CNCIS transparency will influence its development, functioning and implementation process. Even if the CNCIS drawing up is a complex approach, its interface with the broad public should be clear and easy to understand. The interested ones should be capable to identify the relevant qualifications, to compare them and find out the inputs and outputs in the training programmes to finalize with their certification.

d) Quality

CNCIS will be drafted through correlation with a set of principles and general standards. The qualifications’ definition standards will have to be defined in relation with a set of quality standards, and the quality guarantee processes will accompany all the CNCIS development, implementation and updating actions.

e) Relevance

CNCIS should be relevant for all users: students, education providers, society as a whole. CNCIS will facilitate the students and higher education graduates’ active integration approach in the community by recognizing their professional and personal competences, the management competences of their own resources and their active participation in cultural, economic, political and social level.

2. Guidelines

With the National Agency for the Higher Education Qualifications and Partnership with the Economic and Social Environment (ACPART), as a national authority in the field with the task to develop the CNCIS, it is imperative that it sets up a set of action guidelines with a view to draw up and implement the CNCIS, which will include both the roles it will accomplish in relationship with the other institutions implicated in the process of defining the university qualifications, and the procedural operational landmarks circumscribed directly to the approach assumed. (fig. 2).

a) Consultations and inclusion

All categories of bodies interested by the CNCIS will be consulted permanently by the ACPART Agency. Their diversity poses an exhaustive approach, both at national and international level, such as sectorial, university consortiums consultations (it will begin with 8 consortiums in the following fields: information technology, communications, electrical technology, automatics, electronics; car building, fine mechanics, equipments and apparatuses; chemistry, petro-chemistry; constructions; financial, banking, insurance activities; public administration and communication; tourism; transports), geographical areas, university groups, and a comprehensive approach of the consultation, their approach being to be the important aspect in connection with the CNCIS development. In this way, the answer to the needs expressed both by the academic and the economic environment will be assured.
The consultation with all the categories of the CNCIS actors, and, at the same time, beneficiaries will be completed through the reunions of the Consultative Council, of the specialty Commissions, as well as through seminars, work reunions, workshops, conferences etc. Likewise, the ACPART will carry out dissemination activities of the methodologies and procedures on qualifications.

The ACPART has a permanent dialogue with the institutions implicated in the qualifications problematic, and in the organization and development of the higher education activities:

- It collaborates with the Ministry of Labour, Social Solidarity and Family – MMSSF and the social partners (sectorial committees, employers’ associations, trade unions, professional associations) with a view to match the higher education qualifications with the labour market needs, with its permanently changing needs;
- It collaborates with the institutions implicated in the development of the National Qualifications Framework (CNFPA, CNDIPT, higher education institutions, high-schools) with a view to identify the coherent ways of articulation of the higher education qualifications with the other qualification levels (ex. TVET) and with the EQF, implicitly;
- It collaborates with the ARACIS to monitor and comply the contents and quality of the university study programmes correlated to the qualifications demands (whose definition and description belongs to the ACPART).

b) Research and assessment

All the actions of the ACPART Agency will be founded on deep preliminary researches capable to aim at the national (the development needs of the higher education institutions and of the labour market) and the international situation, given the progresses recorded in various fields such as the information technology and communication, the social and economic activities in general. As guideline, the research activity will fulfil an anticipative/predictive function towards the
occupational analysis (occupations), specific to a qualification, categories of competences, structures and competence generic units and indicators of the competence generic units. The programmes of studies, expressed in terms of the higher education follow the levels 1 – 5, corresponding to the pre-university education. The levels 6, 7 and 8 corresponding to the European Qualifications Framework - EQF). The levels 6, 7 and 8 corresponding to the higher education follow the levels 1 – 5, corresponding to the pre-university education. Each qualification correlated to a certain cycle of studies /education level (licence, master, doctorate) will be defined on the basis of the general description of the education results, expressed in terms of general competences for a field of studies and specific competences for the programmes of studies, as well as transversal competences specifically defined for the programmes of studies.

The landmarks of defining competences and higher education qualifications, implicitly, will be the fundamental professional roles identified on the basis of an occupational analysis (occupations), specific to a qualification, categories of competences, structures and competence generic units and indicators of the competence generic units. The

3. National Framework of Qualifications

The CNCIS is a levelled system, corresponding to levels 6, 7 and 8 (in accordance with the European Qualifications Framework - EQF). The levels 6, 7 and 8 corresponding to the higher education follow the levels 1 – 5, corresponding to the pre-university education. Each qualification correlated to a certain cycle of studies /education level (licence, master, doctorate) will be defined on the basis of the general description of the education results, expressed in terms of general competences for a field of studies and specific competences for the programmes of studies, as well as transversal competences specifically defined for the programmes of studies.

The landmarks of defining competences and higher education qualifications, implicitly, will be the fundamental professional roles identified on the basis of an occupational analysis (occupations), specific to a qualification, categories of competences, structures and competence generic units and indicators of the competence generic units. The
above mentioned landmarks are used by the ACPART and the higher education institutions to:

- Define competences and qualifications for the programmes of studies (within the fields of studies) on cycles of studies / educational levels (licence, master);
- Define competences and qualifications for the fields of studies on cycles of studies / educational levels (licence, doctorate).

These elements are the basis for the CNCIS and the Higher Education National Registry of Qualifications (RNCIS) construction. Likewise, they will be used by the ACPART to monitor and certify the new qualifications of the higher education.

A possible pattern of **structure of qualification’s description** could be seen as a hierarchy that includes the combination among the learning results, the contents (subjects) and the cycles of studies where they are enforced / carried out.

<table>
<thead>
<tr>
<th>Qualification’s description</th>
<th>Quadrant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title</td>
<td>Quadrant 1</td>
</tr>
<tr>
<td>Authority in charge of the certification</td>
<td>Quadrant 2</td>
</tr>
<tr>
<td>Quality of the signatory (s) of the qualification (diploma)</td>
<td>Quadrant 3</td>
</tr>
<tr>
<td>Cycle of studies and field of studies</td>
<td>Quadrant 4</td>
</tr>
<tr>
<td>Summary of the qualification’s function</td>
<td>Quadrant 5</td>
</tr>
<tr>
<td>Activity sectors or types of occupations accessible to the diploma/certificate owner</td>
<td>Quadrant 6</td>
</tr>
<tr>
<td>Ways of access to qualification</td>
<td>Quadrant 7</td>
</tr>
<tr>
<td>Links to other certifications</td>
<td>Quadrant 8</td>
</tr>
<tr>
<td>European or international agreements</td>
<td>Quadrant 9</td>
</tr>
<tr>
<td>Legal basis</td>
<td>Quadrant 10</td>
</tr>
<tr>
<td>Other information</td>
<td>Quadrant 11</td>
</tr>
</tbody>
</table>

### 4. Methodological tools of description of the university professional qualifications

With a view to describe the higher education qualifications two categories of complementary grids were set up:

- „Grid of qualification’s describing on studies / specializations programmes” for the cycle of licence and master studies, respectively. „Grid of qualification’s description on field of studies” for licence and doctorate. These grids will be filled in by the specialty Commissions agreed at the ACPART level, in the first stage.

- „Grid for the identification of the correlations between the competence enforced units and the study subjects”. This grid will be filled in by the higher schools, in the second stage.

These are part of the set of tools for the drawing up of the Higher Education National Qualifications Framework (CNCIS) and aim to:
Identify the specific professional competences of the graduate who gets a university professional qualification correlated to a programme of studies at a licence or master level;
Identify the general professional competences of the graduate with licence or doctorate studies who gets the university qualification correlated to a field of studies;
Correlate the enforced units of competence with the study disciplines in the tuition plan.

The grids give the identification framework of the competence enforced units (specific/general professional competences depending on the programme/field of studies) by setting up the categories (see Conceptual delimitations, pc. F), structures and competence units (G), their indicators, respectively (H).

The internal logics of conceiving and the grid’s structure (1) of describing the qualifications on study programmes and study fields result directly in identifying:
- The occupations (the social-professional status);
- The professional roles corresponding to the qualification;
- The competence enforced units (for the specific professional competences, for the general professional competences respectively).

The description of the qualification for the study programme will stay at the basis of the qualification’s description for the study programme which subordinates the respective programme (through the fundamental identified occupations and functions). In the same way, the competence enforced units subsumed to the specific professional competences for

The internal logics of conceiving and the grid’s structure (2) of identifying the correlation between the competence enforced units and the study subjects have as a direct result the identification of the subjects that lead to the development of the competence enforced units.

Therefore, the approach as a whole is based on the following logical diagram:

5. Conceptual framework for the Grids of qualifications’ description

A. Cycles of studies are the three sequential levels identified through the Bologna Process – (first licence, second - master and third cycle - doctorate) wherein the qualifications of the European higher education are positioned (cf. EHEA Document - Bologna). The three cycles of studies correspond to the learning levels 6, 7 and 8 of
the EQF (cf. the Documents of the European Commission in Brussels) being described in terms of learning results which could be correlated with the qualifications and qualifications’ frameworks in Europe.

<table>
<thead>
<tr>
<th>Bologna</th>
<th>EQF</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cycle of studies</strong></td>
<td><strong>Learning level</strong></td>
</tr>
<tr>
<td>Licence</td>
<td>6</td>
</tr>
<tr>
<td>Master</td>
<td>7</td>
</tr>
<tr>
<td>Doctorate</td>
<td>8</td>
</tr>
</tbody>
</table>

B. **Programme of studies /specialization** consists in all activities of drawing up, organization, leading and effective completion of teaching, learning, assessment and research in a field that leads to getting a university professional qualification. The study programmes are differentiated on: (a) the university professional qualification’s level given by the cycle of studies /learning level: licence, master, doctorate; (b) form of education: day courses, evening courses, reduced attendance courses, distance education etc.; (c) the specialization’s field of knowledge, in accordance with the academic division of knowledge and the labour’s professional division. A study programme consist of: (a) an educational plan which includes all the disciplines that contribute to getting a university professional qualification, successively disseminated on years of study and with weights expressed in ECST study credits; (b) programmes or files of the disciplines where the following are formulated: the thematic of teaching, of learning and the practices associated to teaching and assessment; (c) the students’ and the teaching staff’s organization in the period of carrying out the study programme; (d) the system of assurance of the academic quality of the activities of achieving the study programme (cf. the ARACIS Methodology (2006), pg. 14 , our underlining.).

C. **Field of studies** is defined through general and specific professional knowledge, abilities and competences. The field of studies includes one or several programmes of university studies /specializations.

D. **The educational plans** should include the fundamental disciplines, the field’s specialty disciplines and complementary disciplines, which have in return the status of obligatory, optional and facultative disciplines, in accordance with the normative demands as set at national level.

- **The fundamental disciplines** guarantee the training and development of the competences, of the basic abilities and attitudes. These disciplines are obligatory.
The specialty disciplines guarantee the deepening of the specific operational contents. These disciplines could be obligatory or optional.

The complementary disciplines extend the intellectual and professional horizon by moulding some communication and transfer abilities (ex: foreign languages, physical education and sport, IT&C). In principle, these disciplines could be optional or facultative, except for the physical education and the foreign language, which are obligatory.

E. From the occupational or of the socio-professional status’ analysis, carried out within this approach at the level of the occupations identification only from the area of a university professional career, derives the fundamental and common professional roles to all the qualifications subsumed. In this respect, the activities and/or attributions subordinated to them could be used as landmarks, outside the grid.

F. The fundamental professional roles correlate with the major areas of competence the graduate should be capable to demonstrate in order to be certified the professional qualification. The identification of the fundamental professional roles implicates, mainly, at the same time, the delimitation of the major areas of competence, asked for through the qualification in a programme of studies, in a field of studies, respectively, but, at the same time, followed by the employers at the place of work, in the profession’s exercising activity.

G. The categories of competences identified are:

- Generic/transversal competences – referring to those acquisitions which transcend the field, the programme of studies with a trans-disciplinary nature respectively (team work abilities, linguistic abilities, IT abilities a.s.o.).
  Generic/transversal competence means to use the fundamental knowledge, abilities and other acquisitions’ (such as values and attitudes) transferable, multifunctional set which any human subject needs to personally and professionally get hired, integrate and develop. Very often, these competences have a very stressed attitude-valuable dimension. We find here, within the category of these competences:
  - Oral and in written communication in the mother language;
  - Communication in a foreign language;
  - IT&C utilisation in the professional field;
  - Problem’s resolving and decision-making;
  - Capacity of integration and communication with the experts from other knowledge fields, in various situations (team work);
  - Recognition and respect of diversity and multi-culture;
  - Inter-personal abilities;
  - Ethical commitment;
  - Autonomy of learning;
  - Leadership;
  - Initiative and entrepreneurial spirit;
  - Openness to life-time learning;
  - Commitment towards the professional identity, development and ethics.
✓ Professional competences:

- General professional competences
- Specific professional competences

Professional competence is the proper use of an integrated, dynamic, coherent and open set of knowledge, abilities (ex: cognitive, action-like, relational, ethical abilities) and other acquisitions (ex: values and attitudes) specific to a profession with a view to successfully fix the problem situations occurring in the respective profession, in conditions of efficiency and efficacy.

**General professional competence** is the integrated, dynamic, coherent and open kit of knowledge, abilities (ex: cognitive, action-like, relational and ethical abilities) and other acquisitions (ex: values and attitudes) developed within a larger framework of the field of studies.

**Specific professional competence** means the use of the integrated, dynamic, coherent and open set of knowledge and abilities (ex: cognitive, action-like, relational and ethical abilities) and other acquisitions (ex: values and attitudes) within the more restrained framework of a programme of studies /specializations.

H. The competence structures and units

Both the specific professional competences (correlate to the programmes of studies), and the general professional competences (correlated to the field of studies) will be defined on the two structures of competence:

**I. Knowledge competences,**
**II. Functional-action-like competences,**

which, in their turn, result in the following generic units of competence representing the structural-functional elements of any type of competence:

**I. Knowledge competences,**
1. Knowledge, understanding and use of the language specific to the programme/field of studies;
2. Explanation and interpretation of the states-of-mind, phenomenas, processes, ideas and trends belonging to the programme/field of studies.

**II. Functional-action-like competences,**
3. Enforcement and transfer of the conceptual-technical abilities and problems’ resolving within the programme/field of studies;
4. Critical-constructive and assessment-like reflection (value judges) at the programme/field of studies’ level;
5. Creative-innovative behaviour in the programme/field of studies.

The competence units’ indicators were set up as a hierarchy in accordance to a set of pre-defined criteria corresponding to each cycle of studies (licence, master, doctorate). Each criteria is similar to a standard of performance, their role being to define the minimum acceptable general level of the learning results which composes the professional competence defined for a certain cycle of studies (licence, master, doctorate).

In a subsequent stage, the identification grid of professional competences specific to a programme of studies/specializations will be enforced within the desks with a view to forge the university professional standards (depending on the qualification’s social and
professional status) corresponding to a certain programme of studies.

In this way, the competence units’ indicators will subsequently serve to elaborate the study plans, and also to authentically assess the certified qualification, by setting a common reference framework.

For each indicator, with a view to identify the competence enforced units (specific/general professional competences) on the three study cycles (licence, master or doctorate), the following criteria could be considered:

- The type of knowledge representing the basis to enforce the respective abilities and their level of complexity
  Examples: elementary, complex or advanced level of knowledge;

- Development level of the mental, physical etc. processes which intervene in the execution of the competence enforced units
  Examples: the development and implementation of the creative approaches; the development and implementation of some creative-innovative strategies; the development and implementation of some complex creative-innovative strategies.

- Type of product/outcome wherein the respective competence enforced unit gets shape
  Examples: projects, portfolios, lab works, empirical researches, innovative researches a.s.o.;

- Field of application of the competence unit:
  Examples: well-defined situations, poor-defined situations, non-defined/new situations.

To formulate (define) each competence enforced unit, indicators are used as follows:

**I. Knowledge competences:**

**1. Knowledge, understanding and utilisation of the language specific to the study programme/field:**

a. Type of knowledge and their complexity level:
   – elementary/nodal;
   – complex;
   – advanced, integrated in paradigm, meta-theories.

b. The development level of the knowledge, understanding and use processes of the specific language of the study programme/field:
   – singular knowledge, understanding and use;
   – knowledge, understanding and use through integration within functional structures;
   – knowledge, understanding and use through integration within paradigms, meta-theories.

c. Field of application of the competence units:
   – well-defined situations;
   – poor-defined situation;
2. Explanation and interpretation of ideas, phenomenas, processes, states-of-mind and trends belonging to the study programme/field

a. Level of manifestation of explanation and interpretation processes:
   – singular/individual explanation and interpretation;
   – integrative-like explanation and interpretation;
   – explanation and interpretation in a manner of some complex paradigmatic constructions.

b. Type of knowledge and their complexity level:
   – elementary/nodal;
   – complex;
   – advanced knowledge.

c. Application field of the competence unit:
   – well-defined situations;
   – poor-defined situations;
   – contexts of research, development, innovation.

II. Functional-action-like competences:

3. Application and transfer of conceptual-technical abilities and problem’s resolving within the study programme/field:

a. Complexity degree of the conceptual-technical abilities:
   – elementary;
   – complex;
   – complex.

b. Type of problems that could be resolved:
   – simple problems;
   – problems specific to micro-projects;
   – problems specific to research processes.

c. Application field of the competence unit:
   – well-defined;
   – poor-defined;
   – new, specialized.

4. Critical-constructive and assessing reflection (judges of value) at the level of the study programme/field:

a. Level of development of the critical-constructive and assessing reflection processes:
   – critical-constructive analysis;
   – critical-constructive and assessing reflection;
   – critical-constructive and assessing reflection.

b. Type of knowledge and their complexity level:
– elementary;
– complex;
– advanced.

c. Type of product/outcome in which it transforms:
– simple enounces;
– judges of value;
– integrated pattern of knowledge and action.

5. Creative-innovative behaviour in the study programme/field
a. Level of development of the creative-innovative behaviour:
– development and implementation of creative approaches;
– development and implementation of some creative-innovative strategies;
– development and implementation of some complex creative-innovative strategies.

b. Type of product /outcome in which transform:
– solutions to typical, elementary issues;
– instruments of investigation and supervised micro-researches;
– projects of relevant research and GISTRY
The process of Educational Documents Recognition – Case Slovakia

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Abstract

In accordance with long year lasting traditions in Europe education is considered to be an integral part of cultural heritage. Mainly in the past two decades development focused on as wide diversification in educational systems as possible. Such a tendency aimed at guarantee to maintain national education and conception. Parallelly with this process also the significant increase of student and professional mobility was present. Such a development meant a conflict in above mentioned tendency. Differences in educational systems especially complicate processes of recognition of educational documents. Therefore individual states strive for solving this problem on the national and international level while following common aims in the field of education.

1. Introduction

Recognition of educational documents became the focus of interest at the beginning of 90´s when the study and professional mobility among countries increased by opening the borders. Gradually relevant legal regulations were created aiming at managing the process of recognition in education in Slovak Republic. Institutional frame for this process was ensured by organizational structure of the “Institute of Educational information and forecast” in 1991. The Centre for equivalence of educational documents has been successfully included into international cooperation ENIC/NARIC. By this step basic conditions for following the actual development trends in the field of recognition of educational documents were established.

ENIC (European Network of Information Centres) cooperation has been initiated at the process of implementation of Lisbon Agreement on recognition in EU by the European Council and UNESCO. ENIC consists of national information centres of countries belonging to European Cultural Assembly or to UNESCO organization in EU region. In spite of the fact that some competences of ENIC offices can be various, in general they provide information on: diploma recognition, academic degrees, education system in countries involved in ENIC cooperation, advantages of study abroad, practical issues regarding mobility and equivalency.

NARIC (National Information Centres for Academic Recognition) as an initiative of European Commission has been established in 1984. This network concentrates on improving the academic diploma recognition and periods of study in EU member states, countries associated in Central and Eastern Europe and Cyprus. NARIC centres in separate countries have been delegated by the Ministry of Education. The scope of their activities are...
various when comparing individual countries. In majority of countries higher education institutions are independent. They carry out individual decision making in accepting international students and in recognition of the certain part of the study. Thus the main aim of NARIC offices is to provide information and advices in relation to the international educational systems and qualifications.

From the multilateral and bilateral agreements point of view “acquis communautaire” is not referring to recognition of documents in education. Here other international organizations’ agreements are applied (e.g. UNESCO, European Council). Slovak republic has currently valid bilateral agreement on mutual recognition of qualification with following EU member states: Germany, Hungary, Czech republic, Romania and Poland. Memorandum of understanding is signed with Austria. From third countries out of EU there is signed bilateral agreement with Croatia. Slovak republic is a signatory of Convention on higher education qualifications’ recognition in European region (Lisbon 1997). Thus mutual recognition of studies, certificates, diplomas and degrees obtained in other countries of European region presents significant progress in academic mobility support.

2. Methodology

The paper aims at introducing the current system of educational documents’ recognition in Slovak republic by focusing on analysis of legal regulations in this field. Source data and information was collected from the Ministry of Education in Slovak republic. Paper is worked out on the basis of the “Report of the Ministry of Education in SR - Audit of the contemporary recognition process in education and on the proposal to facilitate the recognition process” (July, 2006). Governmental document also reflects valuable remarks and comments of Academia in Slovak republic.

3. Results

Due to diversity of the solved topic the legislative framework in Slovak republic referring to recognition in education is concerned to be very extensive. Thus the overlapping of individual legal regulations and lack of legal regulation in certain fields are present.

3.1 Legal regulation of recognition in education - case Slovak Republic

A. Recognition of the part of the study at the higher education institution abroad

Decision on recognition of the part of the higher education studies is made by the higher education institution in Slovak republic providing students with study programme in the identical or related study branch. Higher education institution compares study programmes and in case of need – if there are evident essential differences in the study content – prescribes student carrying out complementary exams.

Centre for academic recognition issues on request of student or higher education institution (where student is interested in continuation of study in Slovakia) professional opinion to recognition of the part of the study at the higher education institution abroad. Centre for academic recognition examines the fact whether the higher education institution abroad (where student has been studying before) is an institution accredited by the state. If so, the Centre for academic recognition transfers the evaluation of the study into the Slovak grading scale.
B. Recognition of the completed higher education

Centre for academic recognition issues professional opinions in the form of:
- Recommendation
- Certification
- Decision

The process of the recognition depends on the fact if the submitted official document:
- Is submitted for recognition for academic or professional purposes
- Is issued by the EU member state or not

B.1 Recognition for academic purposes

Recognition for academic purposes contributes to possibilities' development in the field of education and supports traditional forms of mobility. In practice student is allowed to complete the study at the higher education institution and obtain the certain appropriate diploma in one state and continue in higher level of study in other state – which recognizes degree obtained in the state of origin. In Slovakia there are many students interested in such a recognition and there is an advantage of gradual development of cooperation among educational institutions.

Recognition of education of citizens of Slovak republic and EU member states

Document on education obtained abroad after completing the 1st, 2nd or 3rd cycle of the higher education is being recognized by the higher education institution in Slovakia in the identical or relative study branch. Equivalence of these documents on education is regulated by Act No. 131/2002 Coll. on higher education with Amendements and regulation No. 238/2005 Coll. on procedure at recognizing of education documents. If there is no higher education institution in Slovakia providing identical or relative study programme recognition is carried out by the Ministry of Education of Slovak republic.

Recognition of education from non EU member states

Document on education obtained abroad after completing the higher education of the 1st or 2nd cycle is recognized identically as in the case of EU member states. The equivalency of these documents on education is regulated by Act. No. 131/2002 Coll. on higher education with Amendements.

B.2 Recognition for professional purposes

Document's recognition on education for professional purposes aims mainly at elimination of barriers in professional mobility coming from existence of differences in national education systems. Everyone who obtains a certain competence in appropriate state which qualifies for operating a specific profession is allowed to use this qualification for carrying out profession in this state without any difficulties. Those who plan to carry out profession in other state than the state of his/her origin (where he/she obtained qualification) is obliged to have the qualification recognized in the state where the profession is planned to be carried out.
Recognition of education of citizens of Slovak republic and EU member states

The right to work as a regularly paid employee or entrepreneur in the area of other EU member state than the original one belongs to basic rights of EU citizens. Professional recognition has become the tool of assuring “European dimension” of the education and professional activity in EU. Professional recognition of documents in EU differentiates carrying out of:

- “regulated” professions
- “not regulated” professions

in Slovak republic.

Recognition of education of citizens of Slovak republic and EU member states – for the purpose of “regulated” professions in Slovak republic

Recognition of documents on education regarding “regulated” professions is regulated by the Act No. 477/2002 Coll. on recognition of professional qualifications. According to this Act “regulated profession” is defined as a professional activity or a set of professional activities which can be carried out only on condition of qualification regulated by law. “Qualification” is defined as an education and practice eventually other special conditions e.g. certificate on integrity, membership in appropriate Chamber of the Estates etc.

Act No. 477/2002 Coll. refers to citizens of EU member states and their relatives who intend to carry out “regulated profession” in Slovak republic as physical persons authorized to do business or persons in the status of responsible deputy except of professions such as architect, veterinary doctor, professional activities stated in the Attachment No. 1 of the Act (these professional activities are regulated by special legal regulations for example the profession of advocate).

Act No. 477/2002 Coll. regulates also the process of recognition of higher education, higher vocational education, complete secondary vocational education and secondary vocational education. The process of recognition of documents on specialization of medical employees is regulated by special legal regulation.

Ongoing progress in harmonizing educational systems in EU, ambitions at creating common higher education area, legislative implementation of Bologna principles lead to one common significant direction: elimination of borders and differences in education. In this process of elimination Slovak republic realized significant progress in the field of documents recognition certifying completing higher education studies of the 3rd cycle. Document on obtaining the degree of the 3rd cycle of higher education in EU member state is recognized by the Ministry of Education in SR automatically. Automatic recognition is proved by issuing the “Certificate on automatic recognition”. Thereby the area for enhancing mobility of young graduates of PhD. study in Slovakia is created. Definitely it can be considered to be an essential contribution to the scientific community, students of universities and all parties involved.

Procedure of recognition of professional qualification according to the Act on “recognition of professional qualification”:

Applicant submits the Centre for academic recognition or the relevant institution a written application where the concrete regulated profession (which he/she intends to carry out in Slovak republic) is stated. Except of the application form also the following relevant documents must be attached:

- Identity card
– Certified copies of documents on education
– Transcript of Records or Diploma supplement
– Confirmation on vocational training carried out
– Stamp of the value 3000 Slovak Crowns
– Other relevant documents if regulated by special legal regulation

Applicant is required to submit also the certified translation of educational documents to state official language.

“Centre for academic recognition” issues the “decision on qualification recognition” after investigating the application form. “Decision on qualification recognition” is issued in 2 possible forms:
– Recognition
– Refuse

The Centre comments only on educational documents in the frame of the decision. In case the “regulated profession” carried out is conditioned by further conditions (practice, integrity etc.) the Centre acts as “first step decision entity”. Final decision is accordingly issued by relevant institution e.g. trade authority, other relevant Ministry.

Recognition of education of citizens of Slovak republic and EU member states – for the purpose of “not regulated” professions in Slovak republic

In case the profession which is intended to be carried out by the EU citizen in accepting state is not regulated in this state, it is not required to apply for educational document recognition. Relevant profession can be carried out under the same conditions as state citizens of accepting state. The value of the educational document depends on the labour market not on legal regulation. Employers are authorized to require their potential employees to identify themselves by relevant documents – confirming their qualification.

3.2 Activities of the Centre for academic recognition

The Centre for academic recognition was established by the Ministry of Education-order of the Minister no. 12/2004-I (13 May, 2004). The Centre was established as the 7 office body in Slovak republic. In relation to the wide content of administration of the Centre the existing number of state employees was not sufficient. Due to this fact the organizational structure of the Ministry of Education was changed. At the same time 2 new offices were established on 27. December, 2005.

Basic activities of the Centre are divided into more work fields with various levels of difficulty. Procedures realized by the Centre are as follows:
– Assessing of the study abroad
– Assessing of the part of the study abroad
– Recognition of the completed education abroad
– Recognition of qualification of Slovak republic and EU citizens obtained abroad for the purpose of “regulated” professions in Slovak republic
– Certifying automatic recognition of the higher education of the 3rd cycle obtained abroad
– Confirming pedagogical ability obtained in Slovak republic
– Issuing the confirmation on higher education document’s authenticity obtained in Slovak republic

Administration is distributed among employees of the Centre according to language skills – according to the state of origin of the educational document. From the work difficulty
point of view activities of employees are about the same level.
As it is visible from the Table no.1 - from 2001 there is a significant increase of
competences of the Centre and permanent increase of application forms.

**Number of application forms**

**Table No. 1**

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Application forms</th>
<th>Number of application forms for recognition of „regulated“ profession</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. half of the year</td>
<td>2. half of the year</td>
</tr>
<tr>
<td>2001</td>
<td>1240</td>
<td>3255</td>
</tr>
<tr>
<td>2002</td>
<td>1330</td>
<td>3910</td>
</tr>
<tr>
<td>2003</td>
<td>1530</td>
<td>3950</td>
</tr>
<tr>
<td>2004</td>
<td>2001</td>
<td>5210</td>
</tr>
<tr>
<td>2005</td>
<td>1560</td>
<td>5340</td>
</tr>
<tr>
<td>until 31.05.2006</td>
<td>1520</td>
<td>Presumption 5500</td>
</tr>
</tbody>
</table>


Material and technical facilities of the Centre for academic recognition is satisfactory and meets minimal conditions for carrying out work of this sort related to international administration.

### 3.3 Bilateral agreements on mutual recognition of documents on education and professional qualification

Recognition of the education obtained abroad for the purpose of continuation in study (academic recognition) is not involved in the European Law. Therefore in EU member states and in associated countries there is an offer to establish and exploit bilateral agreements for the purpose of enhancing academic mobility via academic recognition.

Slovak republic joined to majority of international Conventions after 1989 (until 1989 The Czecho-Slovak Socialist Republic joined only to 2 international Conventions – UNESCO Convention and so called Prague Convention). In complex of bilateral agreements there were mainly agreements between states which political orientation was identical. When the new independent Slovak republic came into existence bilateral agreements on mutual recognition were signed with Czech republic, Croatia, Hungary, Germany, Poland, Romania and Ukraine. In case of Austria the Memorandum of understanding on recognition of professional qualifications related to higher education was signed.

Contemporary policy in the field of bilateral agreements establishment is derived from the priorities of foreign policy of Slovak republic (membership in various international organizations such as OECD, EU and NATO). Proceeded changes in the field of education - mainly in higher education- are extraordinary dynamic. It is very important that Slovak republic would keep up with these changes. Therefore it is essential to develop multilateral activities in the field of bilateral agreements’ establishment and to divide the target object from two points of view:

1. First – very important point of view – is the interest of citizens of Slovak republic in target state either from the academic or professional aspect. The Centre for academic recognition carried out the mapping and analysis of all applications. Based on the achieved
results we can state that there is the highest academic interest in: Australia, France, Great Britain and Germany.

2. Second – important point of view – are states where there is the highest interest in study in Slovakia. The Centre for academic recognition found out from the previous analysis that the highest academic interest in Slovakia is in those states where citizens with Slovak nationality live (Serbia, Russia, Ukraine). These students are interested in study in Slovakia and study in Slovak language.

Based on the above mentioned results following steps appear to be essential:

- To continue in establishing the bilateral agreements on mutual recognition of educational documents. Priority states should be mainly EU member states and Australia. Higher effort should be developed towards to other states – where it is possible to export Slovak higher education in order to extend transnational education.
- To implement into the practice “The Code of good practice” in order to provide and extend opportunities of transnational education in Slovak republic.
- To create the Legislation on recognition of informal education.

4. Conclusion

The Policy making in the field of education does not belong to EU priorities from the common legal regulation point of view. In spite of this fact common initiatives become more and more significant. Development process was essentially initiated by one of the founder of common Europe Robert Schuman. In 1963 he already predicted “the idea of united Europe will not be realized via European institutions only but also by the influence of intellectual points”. Very clear explanation on development in the field was expressed later by Jean Monnet: “If I had opportunity to start again with building common Europe I would start with culture and education”.

By entering of Slovak republic the EU the whole process and legislative frame has been changed. The right of permanent residence, the right for work in the EU member state different than own state, mobility of students and young employees – these are conditions assured by the European Community which can be exploited by EU citizens. The Conception of free movement of labour force is thereby a basis for well functioning European space for professions and education. The paper was worked out on the basis of the “Report of the Ministry of Education in SR – July 2006” and the main purpose was to introduce the current system of documents recognition in Slovak republic.