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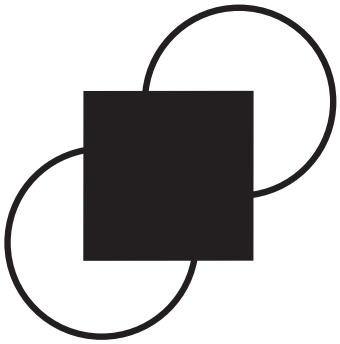
12TH INTERNATIONAL CONFERENCE OF EDUCATION, RESEARCH AND INNOVATION

CONFERENCE PROCEEDINGS

SEVILLE (SPAIN)
11-13 NOVEMBER 2019



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A METHODOLOGY FOR CLOSING THE GAP BETWEEN THE COMPETENCES OF STUDENTS AND RECENT GRADUATES AND LABOUR MARKET NEEDS. THE CASE OF THE REPUBLIC OF NORTH MACEDONIA

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Abstract

The youth unemployment is one of the most pressing problems for every economy. For addressing this issue in the Republic of North Macedonia, numerous project initiatives and activities are in the phase of planning and implementation. Part of these is the implemented project: 'Building capacities for better employability'. Through the project activities, it was proposed to be institutionalized the stakeholder cooperation for matching education curricula according to labour market needs. In order to increase the employability of students and graduates, the main aim which is also the goal of this study, was developing a methodology for closing the gap between the skills of students and graduates and the Labour market needs, by enhancing the entrepreneurial education dominance in high education curricula. Through advanced understanding of the entrepreneurial mind-set, new opportunities in teaching and learning can enhance the University provision. For that purpose, case studies for the best UK practices in employability were developed and a survey for investigating the needs and requirements of the Macedonian high-educational sector was conducted.

The research findings comprised rich informative set of recommendations that was a base for developing the methodology for closing the skills gap. The methodology was organised in four main levels with a number of institutions (actors) and activities (measures) related to them. The application of this methodology resulted with an outline of a stakeholder plan that offers insights into other areas of study and research possibilities.

The contribution of this study is twofold. It adds on the literature for high-sector education and employability, but also it has practical implications for all stakeholders responsible in coping with the unemployment issue. The proposed methodology assists in monitoring the labour market changes and addressing them with improvements in the university curricula accordingly. It could be a powerful tool in the hands of the stakeholders for better employability of the students/graduates and can facilitate whole process. Overall, it will support the Republic of North Macedonia's future strategies at Government, University and Faculty level in their strides toward creating more skilful and employable youth.

Keywords: employability, higher education, labour market needs, skills mismatch, graduates competences.

1 INTRODUCTION

Unemployment, amongst youth (aged between 20 and 30 years), is acknowledged as a macroeconomic and social problem globally, from which even developed countries are not immune to [1]. With 30% unemployment, the Republic of North Macedonia is a country with a high unemployment rate, and 33% of these are youth. In this era when educational institutions are called upon to fulfil more and more roles, often with fewer resources, their function devoted essentially to teaching and research may be weakened by the struggle to be entrepreneurial and market-relevant [2]. These are all topics of high priority for Higher Education institutions, for which there is a plethora of evolving texts and conferences providing guidance for developing effective curricula [3] to meet the demands of the 21st century [4]. Entrepreneurial education has subsequently become one of the fastest growing fields

of education [5]. It is however, widely acknowledged that there is no 'one size fits all' as the culture and context for each establishment and indeed each individual program of study will have its own considerations and agendas to satisfy [6]. Programs and interventions are so diverse that impact studies are scares [7], however it is generally agreed that improving the curricula to increase the employability of students and graduates' from higher education is one approach for addressing the unemployment issue.

At the outset of this paper it should be acknowledged that there are many definitional stances for 'employability', 'enterprise' and 'entrepreneurship' with the terms frequently used interchangeably within Higher Education. This can lead to confusion amongst staff, students and employers. To mitigate for such confusion the term 'employability' is frequently used throughout this paper to encompass all three agendas. However, for clarification [8] the definitions of enterprise and entrepreneurship are adopted, viewing enterprise as "the generation and application of ideas, which are set within practical situations during a project or undertaking. This is a generic concept that can be applied across all areas of education and professional life" [8 p.7] and entrepreneurship as "the application of enterprise behaviours, attributes and competencies into the creation of cultural, social or economic value. This can, but does not exclusively, lead to venture creation" [8 p.7].

A special focus was put on identifying the problems that youth encountered after graduating; ones that negatively impacted on their employment potential. The key factor identified was a universally acknowledged mismatch, a skills gap, between the labour market needs and the students' and graduates' skills. This concurred with findings from Bacigalupo [9], for the European Commission's Joint Research Centre, who developed and published the 'Entrecomp' framework. Therefore, the goal of this research was to develop a method to close this gap by enhancing entrepreneurial education within the curricula. For achieving that goal, a project named "Building capacities for better employability" was implemented. Through its four main activities, the Project aimed to institutionalise stakeholder cooperation for developing educational curricula according to the needs of the labour market. This paper elaborates details of the proposed method and approaches.

2 METHODOLOGY

The research comprises qualitative and quantitative data, informed by a literature review of international perspectives on entrepreneurial education. Best practice was identified from the approaches within the United Kingdom, as it is one of the first countries to have developed dedicated enterprise and entrepreneurship guidance for the higher education sector [8]. The experts involved in the development of the UK's guidance were engaged in both entrepreneurial teaching and research at an international level, and moreover, were practitioners as well as academics. This approach with its breadth of perspectives was advocated by Gibb [10]. Therefore, the authors of this study have learned from within practice, and are not merely passive observers [11] and their engagement within the entrepreneurial education community, policy making and business communications, enable them to consider the practical constraints on teaching and learning. The project was subsequently designed, informed by these findings.

The project commenced in September 2012 and was completed in March, 2014, closed with a 'dissemination' conference at the Macedonia Academy for Sciences and Arts. This breadth of engagement is considered critical, as all ministries worked in a partnership approach that enabled full debate as the project progressed.

Importantly, the project led and supported the establishment of the Interagency Board consisting of representatives of main stakeholders as a steering committee for all the activities undertaken. Based on the products it developed, the project provided advice to the Ministry of Education in the drafting of the amendments to the Law on higher education to introduce/strength Career Centres, and Councils in the Faculties as bodies to facilitate the links between the market needs and curricula offered at the Universities.

Based on the analyses and recommendations of the project, the National Board for Accreditation and Evaluation in Higher Education, represented in the Interagency Board, developed its Guidance (May 2013) for self-evaluation of the Universities/Faculties introducing the "employability" (as a prerequisite for introduction of new curriculums, and as one of the indicators for evaluation of the country's current study programs) as one of the criteria for self-evaluation. This criterion's intention being to motivate Faculties to undertake regular revisions of their curricula to reflect market needs.

The Ministry of Education and Science is committed to supporting the continuation of the work of the Interagency board. The networking training session of the Employability Project resulted with the design of a project proposal for twinning project supported by Ministry of Education and Science. This proposal was filed with the EU Delegation in Skopje with the aim to build onto the Employability Project activities. The new twinning programme will assist the National Board for Quality Assurance and Evaluation in Higher Education, as well as Universities/Faculties Career Centers and Councils in its continuous engagement in the higher education reforms, and improvement of the coordination among the higher education and the business community for better employability of the young educated people.

In addition, detailed analysis of the study program of the major Industrial Engineering and Management (IE&M) from the Faculty of Mechanical Engineering, was conducted and on-site evaluation of 200 companies where mechanical engineers (from the major IE&M) worked in order to find the mismatch between competences of the graduates and required skills of the job positions. 5% of the companies were companies that have operations outside of North Macedonia, 38 % were international companies with operations in North Macedonia, while other were small and medium domestic companies. This analysis was one of the cornerstones for development of the methodology presented in the fourth section of this paper.

3 RESULTS

This section will outline the results from the research, which informed the development of the methodology for closing the skills gap.

The purpose of the case studies for UK best practices, an integral part of this project, was to compare and contrast the UK successful examples for improving the employability with the needs and requirements of the University sector in the Republic of North Macedonia. To summarise, the defining characteristics of UK examples were observed to:

- Combine traditional higher education with vocational, professional and academic research
- Delivered distinctive graduate attributes in the areas of employability, enterprise, sustainable education and global citizenship
- Pioneered new approaches to work-based learning and professional practice that enhance workforce and enterprise capabilities

Through advanced understanding of the entrepreneurial mindset, new opportunities in teaching and learning can enhance the University provision [12] [13] [14] in relation to the North Macedonian case, central to this discussion has been the requirement for the University sector to think beyond academic achievement towards the needs and requirements of other stakeholders, especially their own students. The argument to take on board the views and perspective of those beyond academia is compelling. The ‘Ivory Tower’ approach may seem to have little merit in all but a few specialized areas, where the development of PhD students (and ultimately professors) requires extensive academic understanding of research methodologies and theoretical underpinning that ensures robustness of argument and clarity of thinking.

Therefore, this discussion does not intend to exclude academic thinking, far from it, as academic reliability is central to all University progress and achievements. Moreover, as academia starts to learn from the science related to brain functionality and plasticity, what we initially understood to be non-cognitive or simple thinking, is in fact complex cognition that as a process is drawing great academic interest, especially in terms of creativity [14]. What this discussion does highlight however, is the need to contextualize such thinking within the broader ‘eco system’ of employability and enterprise education.

Our discussion has led us through a debate that considers the unknowns about the pace of change, or what the future holds, and explained the reasoning behind the need for better understanding of the development of skills and abilities that go beyond the mere recollection of knowledge. We have considered the limitations that assessment strategies may place on our learner’s development in terms of being equipped for future opportunities and acknowledged the fact that small businesses have a significant role to play in our understanding as to what is needed to enhance employability skills, and therefore, linking with them is crucial. This, in turn, has led us to consider the changing landscape and definitional limitations of attempting to silo knowledge into subject-specific domains,

employability and entrepreneurship, when the linking concept of the innovative / problem solving and enterprising individual offers insights into ways forward that matches all of our aims and objectives.

We have also been looking for the 'connecting tissue' between educators and the needs of their learners, concluding that alumni/past students offer many opportunities to gain enhanced insights that will enable better planning that is more robustly considered within the challenges that education faces. Our final points relate to the power that good educators who understand the dilemmas can bring not only to their immediate environments, but also through networking and enhanced connectivity, can informed strategic development and policy making.

All of the above combine to suggest that there are clearer ways forward than may have at first been anticipated. Of course, there are limitations to these recommendations, such as even broader engagement and stakeholder analysis, especially in terms of quantifiable and data driven findings. To this end, an outline of a stakeholder plan is introduced (Fig. 1) that, whilst it is beyond the scope of this particular investigation, offers insights into other areas of study and research possibilities.

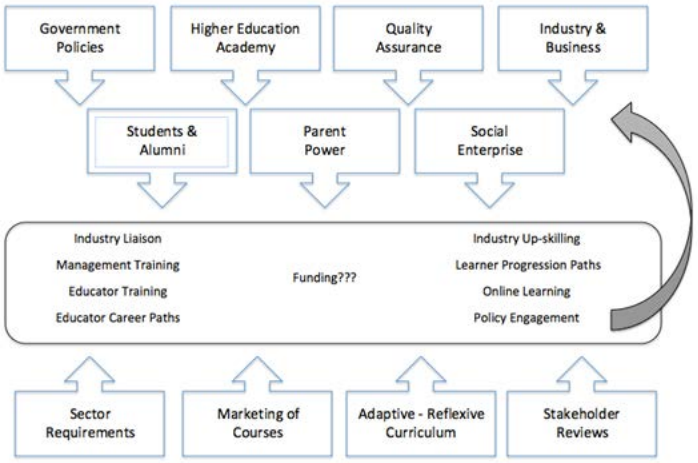


Figure 1. Stakeholder and engagement strategies – a proposed model for the development of a interconnected stakeholder approach to developing employability skills in the Republic of North Macedonia. Presented to representatives of the North Macedonian Government and the British Embassy in Skopje, 18 October 2013.

3.1 Main principles of the Methodology for closing the gap between competences of students and recent graduates and labour market needs

The developed Methodology targets a wide range of Institutions (actors) in the process of closing the gap between competences of students and recent graduates and labour market needs, extended from international (supra-macro) level to single student, and single subject (sub-micro) level.

Table 1. Methodology for closing the gap between competences of the students and recent graduates and labour market.

Level	*Institution / Actor*	*Activity / Measurement*
International (macro)	EU / OECD / World Bank / World Economic Forum / UN-related organizations, etc.	Directives / Communiqué / White papers / Measures …. related to: - Higher Education - Employment (Employability), especially of young people - Entrepreneurship and Entrepreneurial education - Innovation, science and technology (and research and development) - Academy – Industry collaboration - Sustainable business practice

National (macro)	Government	- Definition of strategic areas / national priorities for the next 15-30 years in the areas of economic development (eg. ICT, automotive industry, renewable energy, etc.) in order to forecast further profiles and opportunities for development - Develop national level strategies for Higher education and employment - Providing funds to support higher education and employment of young people
	Ministry of: Education and Science, Labour and Social Affairs Economy, Information Society and Administration	- Legal regulative - State/Ministry level procedures – developing and taking responsibility for graduate destination surveys and their dissemination. - Trends and initiatives - Economic conditions and comparisons - Social welfare and social needs
	Employment Service Agency State statistical office Board for Accreditation and Evaluation in Higher Education Agency for Entrepreneurship Promotion Fund for Innovation and Technology Development	- Professional (career) advices for choosing the University / Faculty - Support for employment of young people - General analysis of the gap between labour market and competences of the graduates - Providing 'once a year' information to Universities about unemployment rate of different profiles. Approval of new study programs / Evaluation of current study programs (with special focus on employability and the needs of small as well as large businesses) And to develop National Guidance for the University sector on Enterprise, Entrepreneurship and Employability. See UK Quality Assurance Agency Guidance at: http://www.qaa.ac.uk/Publications/InformationAndGuidance/Pages/enterprise-entrepreneurship-guidance.aspx And UK Higher Education Academy Guidance on defining and developing approaches to employability at: http://www.heacademy.ac.uk/resources/detail/employability/A-framework-for-higher-education-institutions Support to start-up and spin-off companies from students and university staff Digital infrastructure – strategic development and management
	Employers Chambers Entrepreneurs/ Business Foreign investors	Direct impact and suggestions for improvement of curriculum / noting trends and changes in business needs Direct support to internships International partnerships and strategic directives
Micro	Faculty	- Strengthening career centre services - Support Alumni organization as a main source for feedback from former students (newsletter and social community) - Coordination of internship program - Strengthening capacities of the Board for trust and cooperation with the public
	Major (Department)	- Survey of at least 100 companies where former students are / are likely to be employed - Development of case study (simulation regarding employment) before introduction of new course or study program
Sub-Micro	Single subject/course	- At least once a year consultation with minimum 10 practitioners (companies, entrepreneurs, administration and public sector) asking for input for subject content improvement and making it more real – sector (business/administration) oriented and the monitoring and evaluation of learning outcomes - compared to the need of business. - Continuous comparison of the study program with syllabuses of similar subjects/courses in the country and internationally
	Student	Each student is responsible for his/her professional development: - each student is in charge for his/her activities regarding employability issues, proactive approach towards use of university career services, etc.), - key decisions regarding choosing University/Faculty, elective subjects, companies for internship and for project assignments are made by students themselves.

	Family (parents / spouse)	- Early childhood is the most important period of the life of the children where main attitudes toward work are developed. Parents have also great obligation for right early career guidance of their children. - After marriage spouses are having significant influence to career/professional path of his/her wife/husband

It is acknowledged that there are significant challenges in embedding employability and engaging all stakeholders in the process for developing enhanced provision, hence the framework has to address employability systematically and holistically. Developing a single element of the eco-structure will have limited traction, as each element is interdependent on others.

3.1.1 International Level (Supra-macro)

At the macro level a significant amount of work is being undertaken internationally. The United Nations Conference for Trade and Development for example, produced a review in 2012 that considered investment practice for sustainable development [15].

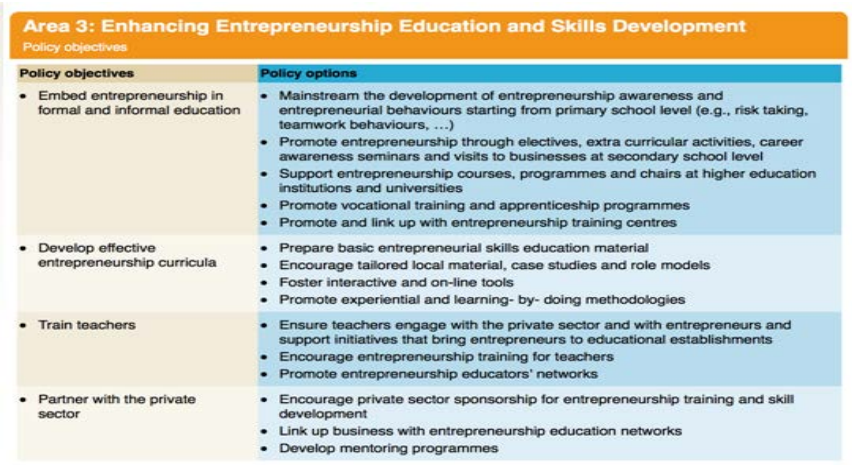
UNCTAD is a global centre of excellence dealing with issues related to investment and enterprise development in the United Nations System. It builds on three-and-a-half decades of experience and international expertise in research and policy analysis, fosters intergovernmental consensus-building, and provides technical assistance to developing countries [15].

Whilst not focussing specifically on transitional countries, many of the lessons may still be pertinent. For example, investment policies for development in an international context, and changing policy environments indicate that investment gaps are not issues limited to large multinational companies. Moreover, acknowledgement of the value of intellectual properties and associated innovation can be key attributes to any developing economy.

Enterprise development. Domestic enterprise development is a key transfer mechanism for the development benefits of investment to materialize. At the same time, especially for foreign investors, the presence of viable local enterprise is a crucial determinant for further investment and for partnerships. [15 p.18]

UNCTAD have also produced a specific policy framework that emphasises the need for a holistic view [16]. Offering 6 checklists that range from optimising regulatory environments to enhancing entrepreneurship education (Area 3) – Fig. 2 [17]. The three-year developmental process highlighted two primary aspects that bear direct relation to our discussion here.

- The availability of entrepreneurship education
- The success of higher education institutions in enterprise-relevant research and in commercializing results of research



Area 3: Enhancing Entrepreneurship Education and Skills Development

Policy objectives

Policy objectives	Policy options
• Embed entrepreneurship in formal and informal education	• Mainstream the development of entrepreneurship awareness and entrepreneurial behaviours starting from primary school level (e.g., risk taking, teamwork behaviours, …) • Promote entrepreneurship through electives, extra curricular activities, career awareness seminars and visits to businesses at secondary school level • Support entrepreneurship courses, programmes and chairs at higher education institutions and universities • Promote vocational training and apprenticeship programmes • Promote and link up with entrepreneurship training centres
• Develop effective entrepreneurship curricula	• Prepare basic entrepreneurial skills education material • Encourage tailored local material, case studies and role models • Foster interactive and on-line tools • Promote experiential and learning- by- doing methodologies
• Train teachers	• Ensure teachers engage with the private sector and with entrepreneurs and support initiatives that bring entrepreneurs to educational establishments • Encourage entrepreneurship training for teachers • Promote entrepreneurship educators' networks
• Partner with the private sector	• Encourage private sector sponsorship for entrepreneurship training and skill development • Link up business with entrepreneurship education networks • Develop mentoring programmes

Figure 2. Policy objectives for Enhancing Entrepreneurship Education and Skills Development [17].

The EU also takes a broad perspective when considering the issue of employability, for example their literature review by their Joint Research Centre does not just consider young people, but also

considers older workers and migrants. The 'Literature Review on Employability, Inclusion and ICT, Report 1: The Concept of Employability with a Specific Focus on Young People, Older Workers and Migrants' [18] notes that, amongst other issues, the very definition of employability remains the topic of debate, and this can cloud the issues.

The simple dictionary definition of 'employability' is 'the quality of character of being employable'. More broadly, it can be conceptualised as 'gaining, sustaining and progressing in employment'. [19]

The latter definition implies that simply getting people into work is insufficient, and that a longer-term goal of gaining and sustaining levels of employment is a more appropriate measure, hence it is this perspective that drives our discussion. Other key factors discussed here will reappear as our text evolves, for example these include the need for a person-centred approach, flexibility and adaptability, innovative thinking and self-efficacy – the confidence to function within business related situations and contexts.

Mathuros [20] sees mobility as a key issue, but acknowledges that before any discussion can start, the government of any country needs to be able to see where they currently stand, and the potential directions for development actual are. They therefore call for countries to:

Assess current and anticipate future skills shortages through strategic skills planning. Governments and industry associations should analyse capacity and productivity risks for each job type, such as mechanical engineers, and develop policies to mitigate anticipated shortfalls. [20]

The World Economic Forum dedicates a special page on their website - Employment, and key themes such as the breadth of stakeholder engagement, especially between business and education.

The World Bank also highlight the need for strategies that address the potential mismatch between training and the ever-changing environment, especially when it come to the value of current and quickly changing knowledge creation [4].

Thus, we see from outset that maintaining a broader perspective is advantageous in the context of employability, and it is this perspective that drives International policy making and advice to Governments.

3.1.2 National (Macro) Government Level

Following the arguments above, all countries have strengths and weaknesses when it comes to the type and nature of employment opportunities in their countries. Concerns over 'brain drains' of the most talented students are common, whether they are from the rural regions to the main cities or from small countries to larger ones, and the Republic of North Macedonia is no different in this context.

It therefore becomes important to map and understand labour movement and labour opportunities, and to map these to educational opportunities within the country. Moreover, Government needs to be aware of the latest labour restrictions, or lack of, within the European Community.

Mapping exercises will also enable a degree of 'forecast ability' to be developed, so that funding decisions can be strategically made, and with an eye towards future opportunities and labour / skills / social trends.

In order to understand the University / business / employment landscape, there is a clear need for an annual survey, with Universities self-reporting on their Business and Community Interaction. Universities can report on the number of businesses they engage with, how many businesses start up and how many survive after 3 years.

All of the above is reliant on a well-informed, educationally relevant, approach to teaching, learning and assessment strategy. Case studies and guidance from the European Commission [19] is continuously evolving and events such as Guarda Polytechnic's Conference for Enabling Teachers for Entrepreneurship illustrate the need for dissemination of what to some, may appear to be unusual and potentially different methodologies. This requires centralized government support, and in the case of the UK, this is realised through the funding of the Higher Education Academy (HEA) and the Higher Education Quality Assurance Agency (QAA). For example, HEA provide specific national guidance on teaching for employability and QAA provide quality-driven guidance for all UK Universities. Initiatives such as the development of strategic partnerships and the enhancement of business university interaction through internships are other areas in which Government can support the development of business - university learning strategies. These in turn can be periodically reviewed, as per the UK's 'Wilson' Wilson, T. A 2012 and 'Witty' reviews [21].

Finally, trade organisations and chambers of commerce can also be engaged with government support. The recent UK All Party Parliamentary Group for Micro Businesses 'An Education System Fit for an Entrepreneur' (2014) illustrates the way through which policy can be developed through enhanced understanding of what business needs are and how they may be met.

3.1.3 Regional / Local (Mezzo) University Level

As a result of growing concern about the employability levels of graduates in the UK, Dacre Pool and Sewell [22] developed a framework for working with students in higher education for the UK's Higher Education Academy, in order to assist the UK University sector to develop their employability rates. This and other models can be found in the document 'Defining and Developing your approach to employability' and through dissemination proceedings such as the HEA's employability conference. Five essential components are considered to be degree subject knowledge; generic skills suited for a range of contexts; emotional intelligence; career development learning; and experience – of both work and life.

Hence it can be seen that only one component in this model is the degree topic itself. Further to these attributes, self-efficacy, self-confidence and self-esteem, developed through reflection, are considered to be extremely important. Labour market information, advice and guidance services can enable enhanced perspectives.

Employability is related to new business development, which in turn is related to innovation. It is widely acknowledged that innovation is often reliant on seeing beyond the norm, or perhaps in a university context, beyond your own discipline. This also has implications, as interdisciplinary and cross Faculty learning is often a rare occurrence, be it due to financial constraints or geographical locations, yet we need to address the need to look wider as opposed to simply looking deeper within the disciplines. This can only be achieved if University senior managers appreciate the limitations that such policies bring to the learning environments that they create.

However, against these understandings it must also be noted that not all academic staff wish to focus on student destination outcomes, but prefer more emphasis on academic attainment levels, which they are more accustomed to evaluating and testing. These perceptions also relate to the evaluation of staff members, recruitment strategies and progression into senior roles. Thus, a more balanced University sector is required to meet the demands of the 21st Century student. Education Ministries as far away as Taiwan and the Association of American Universities and Colleges in America are well aware of the challenges these perspectives bring.

Understanding alumni, their developing roles in employed contexts can greatly assist this journey of discovery, hence more localised understandings as to where students find employment will offer great benefits. Moreover, how the student's learning has empowered them (or not) could also bring enhanced understanding to their own University and the sector as a whole. Career services also have a role to play here, as do quality enhancement panels and new course provision developers.

3.1.4 Micro / Faculty and Department Level

Much of the above discussion can inform the Faculty, department and even course level managers in the Universities. For example, maintaining a data base of alumni, engaging with them so they may return to their programs of study to act as role models / inspiring students to consider their personal career paths and the option to consider self-employment as a valuable careers choice, are all merit able outcomes. Alumni can be case studies, set student projects, support delivery and be involved in the assessment process. After the initial (and possibly funded) process has evolved, it should become self-perpetuating and the culture of self-learning should pervade the process, to the benefit of all.

Implementing a departmental action plan and capturing good practice requires broad stakeholder engagement, not just the views of the academic community. Therefore, specialised surveys relating to the courses and specialisms represented should be developed, so that the micro issues can inform careers services through specially designed surveys and the development of an archive of case studies that are pertinent to the type and nature of learning taking place.

Faculties and departments should actively provide opportunities for inter-disciplinary networking, possibly using the delivery of generic information as a stimulus. By way of example intellectual property, branding, trade-marking and marketing skills could provide core activities that trigger inter departmental learning. Ideas competitions in addition to that of business plan competitions, for example developing ideas to make you more employable, could also offer considerable benefits.

Embedding employability in the curricula has to be undertaken with reference to the curricular context and the demands of the external social and or business environment. It is also important to ensure that enterprise and entrepreneurship are referenced together and not perceived as disparate elements.

3.1.5 Sub-Micro / Subject-course Level and Student – Family/Parents level

The lowest level that can helps in increasing the employability among students and graduates, is maybe the most important. Our suggestion is that each subject/course should have direct impact on increasing students' employability skills. Key questions that each teacher/professor should ask about his/her course are:

- How my subject/course will increase student employability skills?
- What are the competences that will my student gain from my subject/course and will increase his/her chance to be more employable?
- What are the direct outcomes from my subject/course related to the working place and professional qualifications needed for that job?
- Do my students understand that their ideas have commercial value?
- What do my past students say and what did they value (or not value) about their education for employability?
- Do past students maintain contact and can they assist teachers and professors by extending their networks of business contacts?
- Can my course change direction in response to employer's needs and feedback?

Family is also one of the key cornerstones for early development of work/job related habits. Parents very often have key role for advising their children for choosing higher education establishment. However, these aspects are not the focus of this paper.

4 CONCLUSION AND RECOMMENDATIONS FOR FURTHER RESEARCH

As the worldwide economic crisis appears to be passing, countries around the world have been pulling back on public investments in education and skills. In some cases, the increased costs of education are being passed onto individuals through higher fees and on employers through cutbacks in public subsidy. Industries as diverse as tourism, oil, manufacturing or healthcare are looking to hire more skilled workers. Central to the understanding of where the jobs and growth of the future will come from is good intelligence about the labour market.

In that direction authors of this paper were main implementers of the project "Building capacities for better employability", financed by the UK Embassy in the Republic of North Macedonia. The focus of the project was on the higher education system and its surroundings. One of the main outputs of the project is in this paper, which presents a methodology for closing the gap between competences of the students and recent graduates and labour market needs.

We structured the Methodology in four main levels with a number of institutions (actors) and activities (measures) related to them. Primarily, UK experience with 'employability issues' was used as a lens, although as best world-wide practices were also reviewed and considered.

The methodology is submitted for public debate to the main stakeholders (Universities, Ministry of Education and Science, Ministry of Labour and Social Affairs, Ministry of Economy, Chambers of commerce, Associations of employers, State Employment service agency, State statistical office, Board for accreditation and evaluation in higher education, etc.) in the Republic of North Macedonia for further evaluation and improvement.

However in the context of this particular study, the concepts developed here are considered to have much merit, and insights such as these can form the basis of new research projects - which in turn will also help our understanding of what may be required and how adaptable and flexible our education systems may have to become, especially in the face of new technologies and models of learning, where up to date data and informed insights are available within seconds, and at the touch of a button of a smart phone or other mobile device.

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REFERENCES

[1] H. Lau, H. Hsu, S. Acosta, T. Hsu, “Impact of participation in extra-curricular activities during college on graduate employability: an empirical study of graduates of Taiwanese business schools,” *Educational Studies,* vol. 40, no. 1, pp. 26-47, 2014.

[2] J. Ben-David, Centers of Learning: Britain, France, Germany, United States. New York/United States: McGraw-Hill, 1997.

[3] J. Biggs, “Enhancing teaching through constructive alignment,” Paper presented at 20th International Conference on Improving University Teaching Location*,* Hong Kong, July 10, 1995.

[4] World Bank, “Skills & Employability,” 2014.

[5] F. Sirelkhatim, Y. Gangi, T. Nisar, Entrepreneurship education: A systematic literature review of curricula contents and teaching methods, *Cogent Business & Management*, vol.2, no.1, 2015.

[6] D. Rae, Connecting enterprise and graduate employability: Challenges to the higher education culture and curriculum? *Education + Training*, vol. 49, no. 8/9, pp. 605-619, 2007.

[7] A. Valero, B. Parton, A. Robb, *Entrepreneurship Education and Training Programs around the World: Dimensions for Success, Directions in Development*, Washington/United States: World Bank, 2014. Retrieved from: http://dx.doi.org/10.1596/978-1-4648-0202-7

[8] Quality Assurance Agency, “Enterprise and Entrepreneurship Education: Guidance for UK Higher Education providers,”2018.

[9] M. Bacigalupo, P. Kampylis, Y. Punie, G Van den Brande, *EntreComp: The Entrepreneurship Competence Framework,* Seville/Spain: European Joint Research Centre, 2016.

[10] A.A. Gibb, *Towards the Entrepreneurial University: Entrepreneurship Education as a lever for change,* National Council for Graduate Entrepreneurship report, 2005. Retrieved from URL: http://ncee.org.uk/wpcontent/uploads/2014/06/towards_the_entrepreneurial_university.pdf

[11] P. Sikes, A. Potts, Researching Education from the Inside: Investigating Institutions from Within. London/UK: Routledge/Falmer, 2008.

[12] N. F. Krueger, “The cognitive psychology of entrepreneurship” in *Handbook of entrepreneurship research: An interdisciplinary Survey and introduction* (Z. J. Acs, D. B. Audstretsch eds.), New York/United States: Springer, 2005.

[13] A. Penaluna, K. Penaluna, I. Diego, “The role of creativity in entrepreneurship education” in *Handbook of Research on Entrepreneurship and Creativity* (R. Stemberg, G. Krauss eds.), pp. 360-397, Cheltenham/UK, Northampton/US: Edward Elgar Publishing, 2014.

[14] A. Penaluna, K. Penaluna, C. Usei, D. Griffiths, Enterprise education needs enterprising educators, *Education + Training,* vol. 57 no. 8/9, pp. 948-963, 2015.

[15] United Nations Conference on Trade and Development, *Investment policy framework for sustainable development,* 2012a. Retrieved from URL: http://unctad.org/en/PublicationsLibrary/webdiaepcb2012d6_en.pdf

[16] United Nations Conference on Trade and Development, *Entrepreneurship Policy Framework and Implementation Guidance,* 2012b. Retrieved from URL: http://unctad.org/en/PublicationsLibrary/diaeed2012d1_en.pdf

[17] United Nations Conference on Trade and Development, *Enhancing Entrepreneurship Education and Skills Development,* 2012c. Retrieved from URL: http://unctad.org/en/Pages/DIAE/Entrepreneurship/EPF-3.aspx

[18] European Commission, *“Entrepreneurship Education: A Guide for Educators”,* 2013.

[19] European Commission, *"The Concept of Employability with a Specific Focus on Young People, Older Workers and Migrants",* 2013. Retrieved from URL: http://ftp.jrc.es/EURdoc/JRC75518.pdf

[20] F. Mathuros, *"World Economic Forum report calls for greater talent mobility to prevent global labour crisis,"* 2014. Retrieved from URL: http://www.weforum.org/news/world-economic-forum-report-calls-greater-talent-mobility-prevent-global-labour-crisis

[21] T. Wilson, "A Review of Business-University Collaboration Department for Business," Innovation and Skills, 2012. Retrieved from URL: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/32383/12-610-wilson-review-business-university-collaboration.pdf

[22] P. Sewell, L. Dacre Pool, "Moving from conceptual ambiguity to operational clarity: Employability, enterprise and entrepreneurship in higher education," *Education + Training,* vol. 52, no. 1, pp. 89-94, 2010.