

Higher Education Graduates Competencies: Evidence from Literature Review

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Abstract

The aim of this paper is to review determinants of graduates' competencies of Indonesian Higher Education Institution. Accreditation bodies also appear to measure quality of education through the contributions made towards employability. This research was conducted with the aim of identifying the skills needed by employers in various countries, various definitions related to competencies, previous research conducted in various countries related to job skills requirements and recommendations. The study is based on a literature study of educational reports, empirical and theoretical research papers. Research conducted in Indonesia and other countries as well as comparing situations between countries is also summarized in this paper. Review findings revealed that competencies definitions, employer expectation and requirement differ according to different countries. Employers' needs and also the learners' competency enhancement capabilities should be taken into account in formulating future competency assessments. This study summarizes that universities should identify competency sets that will best serve for the future labor market and align programs to meet those who needed.

Keywords

determinants of graduates' competencies; higher education; quality; employability; skills; employer; labor market



I. Introduction

Improving Graduate Competencies is considered as an important mission within the Indonesian higher education institution community. The Labor market requirements and qualifications of the employer vary by employer and state (Weligamage S. S., 2014). The changing business area today emphasizes the importance of work placement by focusing on skills development and field experience. In order to enhance competitive advantage for graduate employment, students need to develop competencies in addition to the acquisition of subject-specific knowledge (Weligamage S. S., 2014). Higher Education Institutes (HEIs) need to identify ways of consolidate this requirement.

In developing countries, closing the gap between skill development through higher education and its use in the labor market remains a challenge (Hovgaard, 2016); (Atchoarena, 2009). The relationship between higher education and working life is expected to be widely shared in developed countries (Quintana, Mora, & Perez, 2016; Schomburg and Teichler, 1999). Employers have now discovered that there is a need to invest significantly in the creation of cultures in the workplace with clearly defined standards of behavior (Kodithuwakku, Mazuki, & Karuthan, 2018).

The Indonesian Ministry of Research, Technology and Higher Education, (2015) mentioned that development of human resources through higher education must be adapted to the science and technology so that higher education must be oriented to the

competencies required by the world of employment. The direction of Human Resource Development that improving the quality and relevance of education and training that are able to respond to globalization and national development needs in order to improve the nation's competitiveness through the development of educational curricula that can serve the diversity of students, the types and pathways of education, as well as the needs of the job market and regional development; improving the quality and professionalism of educators and other education personnel; provision of quality educational facilities; increased research and dissemination of research results, and implementation of community service. Education must be oriented to the competencies required by the workforce as the percentage of unemployed among educated people continues to increase (Indonesia National Long-Term Development Plan for 2005-2025).

II. Review of Literature

The focused areas of literature search were on the Higher Education Graduates Competencies. However, literature on Determinants of graduates' competencies, Higher Education, Quality, Employability, Skills, and Employer has been subsequently summarized.

2.1 Roles set by Higher Education Institutions to the Graduates Labor Market

The contribution of universities to economic development in the scientific era has been linked to three areas (Piróg, 2014); (Korka, 2010) *producing and accumulating human capital*; (ii) *generating, disseminating and applying knowledge*; and (iii) *innovating and inventing new information and technology*. It was explained by (Davis & Ewan, 2017); (Mitra, Abubakar Y. , & Sagagi, M.S. , 2011), Knowledge Development; education for future studies; creation of new tools and methods; networking and stimulating social interaction; in addition, the ability to solve scientific and technological problems; and start-ups are in the interests of universities and their research. From now on, universities around the world are increasingly devoted to producing highly qualified graduates capable of meeting the changing and complex needs of a modern workplace (Bierema., 2016); (Sleezer, Conti, & Nolan, R, 2003).

Higher education is considered crucial for developing a productive and dynamic labor force to meet the demands of the global economy (J.L., Kerrigan M.R., & Van Noy M. , 2017); (Ashok, Daniel, Hicks , & Dwight, Jaffee , 2013). Hence, the relationship between higher education and the labor market which has been studied in detail by economists (J.L., Kerrigan M.R., & Van Noy M. , 2017); (Ashok, Daniel, Hicks , & Dwight, Jaffee , 2013), indicated the availability of two main interpretations about the connection between higher education credentials and labor market outcomes (Jackson, 2016); (Tomlinson, 2007). Related to this, (Jackson, 2016); (Tomlinson, 2007) strongly argued that growing numbers of graduates are increasingly colonizing areas of the labor market that were once occupied by non-graduates, leading to a potential mismatch between their level of capacity and its market utility. Thus, the significance of a university degree for the skill requirements of many graduate-level jobs is said to be undeniable, especially in the development of a science-based economy.

2.2 Graduate Employability, Employment, and Unemployment

Employment, Employability, and unemployment are different ideas. Being employed suggests having a job, whilst being employable suggests having the characteristics required

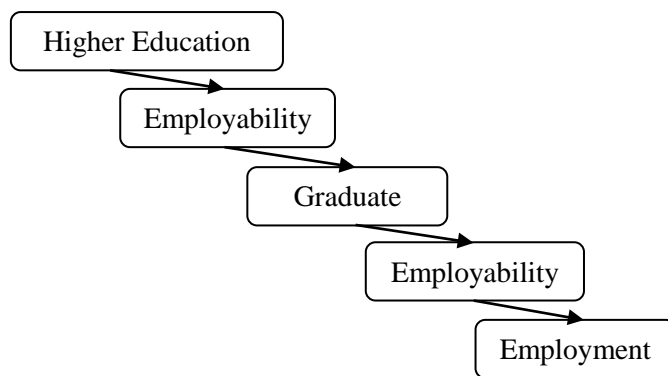
to sustain employment and advance in the workplace. To (Harvey L. , Transitions from Higher Education to Work, 2003), (Lees, Graduate Employability: Literature Review., 2002); (Yorke & Knight, P. , 2006); (Ruge & McCormack, C., 2017) graduate employment is a by-product of job searching process.

On the other hand, unemployment refers to an inability to be employed with one's knowledge, skills and attitudes in the job market (Olukayode, 2017); (Samuel, 2012). In the words of (Babalola, 2015); in (Adepoju & Okotoni CA. , 2018), unemployed graduates keep relying on government and the non-vibrant private sector for job offers rather than providing jobs for others. Employability as a set of accomplishments – skills, knowledge and personal attributes – that make graduates more likely to gain employment and be successful in their preferred jobs, which benefits themselves, the workforce, the society and the economy define by (Tran, 2016); (Weligamage S. , 2009); (Yorke & Knight, P. , 2003).

In many modern neoliberal countries, the continuing contribution of universities to the development of knowledge and skills in the subject has been renamed "employability". (Sin, C. & Amaral., 2017); (Brown, Hesketh, A., & Williams, S. , 2003). Therefore, while the debate on employability dates back to the early twentieth century, employment concepts of the early twenty-first century focused on personal skills and the knowledge and propensity to employ. (Lees, 2002); (Ruge & McCormack, C., 2017). Such changes reflect changes in the nature and characteristics of employment ((Harvey L. , 2000); in (Kamaliah, Samsilah Roslan, Ab Rahim Bakar, & Zeinab Ghiami, 2018), structural changes in labor markets (Sin, C. & Amaral., 2017); (Brown, Hesketh, A., & Williams, S. , 2003) and generally the changing context of graduate employment (Taylor & Govender, C. M. , 2017); (Moreau & Leathwood, C. , 2006). It is clear from the international debates that graduate employability is more than a list of skills, and is culturally and contextually dependent because individual knowledge is both implicit and explicit (Tran, 2016).

The ideas of graduate employability are considered differently among different bodies. For instance, from the employers' point of view, employability is the competence of the graduate to show attributes that employers anticipate will be necessary for the future effective functioning of their organization (Silva, Lopes, B., & Costa, M. , 2016); (Harvey & Green, D. , 1994). Employability appears to refer to 'work predisposition' that is, mastery of the skills, knowledge, attitudes and commercial understanding that will enable new graduates to make productive participation to organizational objectives soon after initiating employment in (Huq & Gilbert, 2017); (Rebecca & Maria, N., 2010).

There are several alternative models developed by researchers to understand the parties and their role in the implementation of recruitment skills in higher education institutes. All stakeholders (government, university system administrators, employers and graduates) should participate in this process to identify the skills requirements, how to improve those skills and address the skills gaps. (Williams, Dodd, L. J., Steele, C., & Randall, R., 2015); (Harvey, Locke, W., & Morey, A. , 2002) presented the simple model of employability, it's called the magic bullet model. According to the model shown in Figure 3.1, magic bullet is that students are somehow addressed employability as a result of their having been a student, which leads them to be employed.



Source: Harvey (2002), employability and diversity
Figure 1. A 'Magic Bullet' Model of Employability Development

The higher education institution has the opportunity for improved employment opportunities, which allows the graduate to gain "employment" and therefore employment (Figure 3.1). There is an enslavement of the causes between child labor and child labor. This reference is used as an authorization to use (refer to) higher labor costs as an indication of the institution's employment utilization (Williams, Dodd, L. J., Steele, C., & Randall, R., 2015); (Harvey, Locke, W., & Morey, A. , 2002).

III. Result and Discussion

3.1 Competencies that Matter in the Graduate Labor Market

Many terms are used in the literature to describe competencies: 'generic skills', 'attributes', 'characteristics', 'values', 'core skills', 'underpinning skills', 'employability skills', 'qualities' and 'professional skills' (Virtanen & Tynjälä, P. , 2018); (De La Harpe, Radloff, A. , & Wyber, J. , 2000). Baker & Henson in (Molla, 2013); (Cuthbert & Molla, T. , 2015), graduate attributes / competencies are 'capabilities students develop at the university that goes beyond content' and increases 'the chances of acquiring and maintaining different types of employment'. From a humanistic philosophical vantage point, (Kreber, 2016); Barnett, 2006) classifies graduate attributes/competencies not as mere knowledge and skills but as qualities and dispositions that enable the individual effectively function in the world of complexity and constant change.

Universities around the world are more demanded to provide highly skilled graduates who are able to react to the ever-changing and complicated needs of the contemporary workplace (Bierema., Navigating professional white water: Rethinking continuing professional education at work, 2016); (Sleezer, Conti, & Nolan, R, 2003). Employability or employment of graduates is taken as key performance indicators in many countries to measure the university or Programme performance (Weligamage S. , 2009). These indicators are called employment indicators. Performance measures of graduate labor market outcomes are likely to feature as an important element in the prospective student's information set (Taylor & Govender, C. M. , 2017); (Smith, McKnight, A. , & Naylor, R. , 2000). For example, in United Kingdom first destination survey to measure the employment performance was conducted (HEFCE, 2003). They calculated two types of indicators using the survey information as the percentage of graduates who are employed or in further study, among all those who are employed, unemployed, or studying; and the second showing the percentage employed among those who are employed or unemployed. The Graduate Careers Council of Australia in association with Australian higher education

institutions administers the Graduate Destination Survey and the Course Experience Questionnaire (CEQ) to gather information from graduates. Performance indicators used as Graduate full-time employment, Graduate full-time study, graduate wages, overall achievement, Good Teaching and Generic skills (Report of AEPL, 2003).

Improving employability skills of the graduates 'is not a new topic and policymakers are still making plans to improve graduates 'skills to meet the demand of the current workforce. Higher education Institutions are one of a key player in enhancing employability and their responsibility to identify how they can enhance skills of their 'future employees'. Generic skills are the key term used as employability skills in most of the countries, but what is meant by this term varies in different countries. Other than HEIs, student and employers can also be considered as important parties to get involved in this process. Students and Employers can be taken as real customers in higher education.

The list included the ability to seek out new information, problem-solving ability, ability to work on one's own without supervision, numeracy, written communication skills, formal presentation skills, team-working skills, computing/IT skills and the ability to identify solutions to customers' business problems.

Table 1. Competencies acquired by graduates in the HEIs

Competencies/Attributes Need to be Acquired by Graduates	
Mastery of ones own field of study /discipline	Research Skills
Competencies on Multidisciplinary knowledge	Time management skills
Ability to rapidly acquire new knowledge (i.e., Alertness to new opportunities and know how to come up with new ideas and solutions)	Interpersonal and Communication Skills and Emotional Intelligence (including self-awareness, strength of character, confidence, motivation, Leadership & Assertiveness)
Teamwork skills (i.e., Coordinating activities and Managing tasks/ Negotiating skills)	Critical Thinking Skills
IT skills (Computer skills)	Creative Thinking and Visioning Skills

Source: (University of East Anglia (UEA), n.d.)

3.2 Higher Education Structure in Enhancing the Employability Skills and Job Opportunities of Graduates

The role of structure in enhancing employability have been described and analyzed in increasing depth and breadth in universities like the Anglo-phone category through four aspects. Firstly, a much larger role for central authorities in defining the goals and methods of the university can be considered. This is true of universities that previously had detailed centralized control and universities that previously enjoyed high levels of autonomy (Brenann, Kogan, M. , & Teichler, U. (Eds.) , 1996); Musselin, 1999, 2004).

Secondly, the creation of powerful managerial infra-structures which paralleled and to some extent replaced the academic structures of deans, heads of departments and professors by professionals or academics which used to be based on collegial decision-making bodies have been become integrated in the administrative line of the organization and thus become part of top-down decision-making structures (Brenann, Kogan, M. , & Teichler, U. (Eds.), 1996).

Thirdly, in many countries the power of academically dominated senates has been paralleled or replaced by councils, boards or trustees who incorporate representation from the world of business, public services and politics could be observed. These and their chairpersons, in particular, reinforce the corporate nature of the reformed university (Brenann, Kogan, M. , & Teichler, U. (Eds.), 1996). Finally, a power movement to appoint institutional leaders (rectors, presidents or vice presidents) who are closer to the position of CEO of a corporate body. This means that the central authorities speak less in detail about the laws and regulations in their daily operations and budgetary decisions, and focus more on the management of objectives based on objectives and (Brenann, Kogan, M. , & Teichler, U. (Eds.), 1996).

Employers have also concern about graduates' ability to preserve with change and to add value by continuing to learn and develop in the workplace (AGR, 1995; (Harvey, Moon, S., Geall, V. , & Bower, R., 1997). Therefore, structures of higher education are expected to contribute to the development of employability skills and responsibility to facilitate opportunities for employment. It also has an advisory role with regard to employee engagement and the graduate employment market; Centre for Enterprise: for leading and supporting the sustainable development of innovation, enterprise and entrepreneurship amongst staff, students and partners; Department for Curriculum and Quality Enhancement: for promoting and supporting the development of appropriate curricula, learning, teaching and assessment strategies and activities which develop employability; The Students' Council: for enabling and encouraging students to develop personal and employability skills through volunteering, clubs and activities, community involvement and other extra curricula activities; and The University Learning and Teaching Committee: for monitoring and reporting on implementation as part of its overall monitoring of Learning and Teaching Strategies.

In the meantime, activities of employability in HEIs are aimed at developing both 'hard' and 'soft' skills, whereby the former is described as job searching techniques; providing help with job search; CV writing; contacts with employers; help with finding and securing work placements/internships; careers events and fairs; computer skills; research skills; time management; literacy; provision of temporary and vacation work. These hard skills are essentially demanding mastery and practice of a body of knowledge. And soft skills are included as career identification and planning; interview practice; understanding of career and how it works; communication skills; decision-making skills; presentation skills; and team working skills. These soft skills require the development of considerably inter- and intrapersonal skills. Furthermore, soft skills, according to Towner (2000); (Santiago-Font., 2017), refer to - those attributes that enable effective teamwork, communication, presentation, leadership, customer service, and innovative problem-solving.

3.3 Study Conditions for the Graduates' Employability and Employment

Nowadays, the introduction of technology into the classroom is shifting the nature of delivering education to students. It is increasingly giving way to a new form of electronic literacy, more programs, and educational materials are made available in electronic form, teachers are preparing materials in the same format; and students are generating papers, assignments, and projects in electronically (Hall., 2017); Chinnammai, 2005). Moreover, Video projection screens, books with storage device servers and CD ROMs, as well as the emergence of online digital libraries, are nowadays replacing blackboards. All exams and grades are regularly becoming available through computerized and notebooks are starting

to give way to laptops. Also, students can be examined through computer managed learning systems and do tutorial exercises on a computer rather than in a classroom.

Further, the effects of Extra-Curricular Activity (ECA) on students' experiences, outcomes, and future job prospects are well documented. Researchers have examined a number of ways in which ECAs benefit students. (Lewis, 2018); (Kaufman & Gabler, J. , 2004), found that activities such as music and dance, public service, inter-scholastic team sports, and student government all improved students' likelihood of getting into college. These activities provided hands-on skills and training, alongside opportunities to increase one's self-esteem and investment in school life. Employers may also favor certain ECAs such as those indicating responsibility, reliability, and maturity. Tchibozo (2005) cited in Lido, Morgan, & Solomon (2011); D. Jackson (2017) found that certain ECAs undertaken at leadership level gave better access to large firms, job security, and protection against unemployment. It is, therefore, clear that there is a need for a better understanding of the long-term impacts of extracurricular activities during study times for the success in the later transition to the world of work.

Therefore, areas covered in 'the study conditions' for employability-skills development include work experience of several types like sandwich courses, 'live projects', semester and shorter placements, visits, and work-shadowing; and opportunities for structured reflection on work experiences. Proper and job-related learning comes not just from doing work experience but also (and significantly) from reflecting on the experience; embedded and explicit skills development in programs of study; free-standing electives (skills development, career management, etc.) and centrally-provided services such as careers advice; and helping students recognize what they have learned from extracurricular activities (HEFCW, 1999).

Nonetheless, there are concerns in some circumstances about the Higher Education Institution's poor infrastructure, outdated teaching facilities, curriculum and teaching methods. Adding to those difficulties and challenges are the insecure relationships between the HES and the labor market, the poor research capability of universities, and the tenuous research–industry linkage gap (Fatseas, 2010; Tuyet, 2016). Together, these operate as obstacles preventing the ability of universities to enhance the capability of their graduates for employment (Thi Tuyet, 2014, 2016). Therefore, unless these deficiencies are addressed, the likely success of universities in carrying out their graduate employability-related tasks are to be diminished; and the study conditions of students are to weaken (The World Bank, 2008; Tran & Swierczek, 2009; Montague, 2013). For example, in Vietnam, the inherited infrastructure of most universities was found to be antiquated and teaching methods have remained traditional – focused on transmitting knowledge from the teacher to the student (Stephen, et al. 2006; Vu, Dang, & Tran, 2007; Dapice, et al., 2008; Thuyet 2016). Of course, changes along such many fronts may require time, support, funding and effort to allow universities to address the new labor needs of the economy.

3.4 Curriculum Relevance to the Graduate Labor Market

Curriculum in higher education literature has been defined from several perspectives. Yankson (2013); Ruge, G., & McCormack, C. (2017) claimed that curriculum is better conceptualized as a site for social interaction among students, faculty, and content. Higher education curriculum needs to be responsive to the interests of employers and take a planned action to equip graduates with the required and up-to-date employability skills (Barnett, 2006:51). Knight & Yorke (2000); Yorke (2001); Ruge, G., & McCormack, C. (2017) believed that HE curricula can make a difference to personal beliefs and approaches. Along with this, curricula offered in HEIs should be well designed with

objectives that address both local and international issues (Yankson, 2013); Anane, Addaney, (2016). In relation, Knight & Yorke (2000); Ruge, G., & McCormack, C. (2017) warn against making four common mistakes when it comes to curriculum change for employability: rational curriculum planning, which begins with statements of goals and learning outcomes; scorched earth change, when the old is thrown out for the new; fast change; paper changes – change without change; and it is only a minority of students who are able to gain employment which directly utilizes the academic content of their degree programme. Objectives are glasses through which we see where we want to go or what the end product would look like.

Curriculum relevance can be tested from the development of discipline-specific skills. These are the skills traditionally included in university curricula to address specific occupational requirements. These skills originate in specific domains, disciplines or subject matter areas. For instance, a biochemistry graduate should have the ability to apply principles to biochemistry practice in order to design and carry out laboratory experiments. A graduate in statistics should possess the ability to apply appropriate statistical techniques to the analysis and interpretation of data (Bridgstock, 2009; in Ruge, McCormack, 2017). Because the skills developed in career management programs are highly personal, applied and depend on reflective processes, traditional instructional methods are unlikely to be as successful as more personally engaging methods.

Meanwhile, a curriculum for employability, according to Knight & Yorke (2004); Thi Tuyet. (2016) involves higher education students in developing: understandings about work; skilful practices (the deployment of skills in different and/or new situations); efficacy beliefs (legitimate self-confidence in one's capacities to achieve and succeed at work), as well as metacognitive capabilities. Knight & Yorke (2004); Thi Tuyet. (2016) explains work-related learning as involving students learning and the world of work in order to enable them to enter and succeed in the world of work and their wider experiences. As a result, work-related learning encompasses university students in four interrelated fields of study: self-learning: skills, self-confidence, life and career opportunities (efficiency and goal recognition); acquire and practice personal skills and values in the world of work (skills); experience the world of work (or its facts) to provide ideas and learn about working life, which is mainly related to higher education (awareness); Try to learn how to learn and handle a variety of situations, including (of course) those at work and those at the center of self-management and development.

3.5 Study Behavior and Employment Opportunities of Graduates

The term study behavior is associated with learning style by Moreland (2005); Finch, Peacock, Levallet, Foster, (2016). In his definition, learning style refers to a set of individual characteristics which are relevant for individual differences i.e., preferences in the learning process. It may be conceived as a relatively stable trait of people. Researchers have identified various definitions of the term learning style. Saransin (1999:1); Lindberg, Bohman, Hulten, Wilson, (2017) defines learning style as: a certainly specified pattern of behavior and/or performance according to which the individual approaches a learning experience, a way in which the individual takes in new information and develops new skills, and the process by which the individual retains new information or new skills.

IV. Conclusion

In conclusion, this document discussed the results of the research on different qualification studies and practices concerning aspects, determinants of graduates' skills, higher education, quality, job opportunities, competencies, employer, labor market, aligning employer needs, the nature of employability, international perspective with respect to employability and employability as indicated by the report.

The current transformation business environment underlines the importance of education specifically higher education for employability, focusing on the development not only competencies / skills but also practical experience. In order to enhance competitive advantage for graduate employment, students need to extend competencies/employability skills in addition to gain subject-specific knowledge and study programs need to recognize the way of improving that requirement. For instance, Competencies/Attributes Need to be Acquired by Graduates developed by The Association of Graduate Recruiters (AGR), in University of East Anglia (UEA) (n.d.): (i) Research Skills (Mastery of one's own field of study /discipline), (ii) Time management skills (Competencies on Multidisciplinary knowledge), (iii) Interpersonal and Communication Skills and Emotional Intelligence (including self-awareness, strength of character, confidence, motivation, Leadership & Assertiveness) (Ability to rapidly acquire new knowledge (i.e., Alertness to new opportunities and Know how to come up with new ideas and solutions)), (iv) Critical Thinking Skills (Teamwork skills (i.e., Coordinating activities and Managing tasks/ Negotiating skills)), (v) Creative Thinking and Visioning Skills (IT skills (Computer skills)). How could these attributes be delivered within the teaching and learning process?

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