



Towards Creativity and Innovation by Integrating Employability Competences into Training Programs for Promoting Graduates Employability

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ABSTRACT: Recently, countries execute strategies that promote employability and improve labor productivity through the cooperation of the university with the business sector in designing and implementing the quality education and accessibility of training opportunities to meet the changeable expectations of employers and society. In this century the employability competencies have a major impact on the basic criteria for employers' recruitment. Hence, increasing employability qualifications are considered the main goal of Higher Education Institutions to maximize the achievement of their development goal by obtaining innovative ways to develop a workforce that is equipped with continually updated skills and knowledge. This work is currently piloted in Training and Sustainable Education Agency (TSEA), Community College, Imam Abdurrahman bin Faisal University, Dammam, Saudi Arabia where (TSEA) organized an employment initiative enhancing employability skills and other skills that enable improve the innovation capabilities of the graduates. This initiative includes three training programs: the first one is Job Oriented Training Program (JOTR), the second is the Qualified Training Program for Specialized Certification (QTPSC) and the third is the Collaborative Training Program (CTP). Each Training Program has been designed to develop graduates' abilities to satisfy current and future requirements in job market with diverse global developments. This research concluded that integrating employability competences in training proved its crucial role in enhancing creativity and innovation needed to create employment opportunities in various sectors for promoting sustainable development.

Keywords: Creativity, Innovation, Employability, Competences-based approach, work-integrated learning.

Abbreviations: HE, Higher Education; WL, Workplace Learning; TSEA, Training and Sustainable Education Agency; JOTR, Job Oriented Training Program; QTPSC, Qualified Training Program for Specialized Certification; CTP, Collaborative Training Program.

I. INTRODUCTION

Education is generally recognized as a major route for people to live happy, productive lives and a key driver of national economic development [1]. The governments have therefore invested heavily in improving access as well as the quality of education to meet the Sustainable Development Goals related to education. HE is often seen as preparing students for Workplace Learning (WL), facing shifts and workplace challenges throughout their careers. Besides, equipping graduates with careers that do not yet exist, a technology that has yet to evolve and that no one has yet thought about to solve issues yet to be established and obstacles that no one has yet discovered [2]. Once students have reached the labor market, they have to work to the invention and retain jobs [3].

Saudi Arabia Vision 2030 focuses on the correlation between education and the labor market, and on the need to improve entrepreneurial skills and competences. Training in universities is commonly seen as a significant factor in ensuring graduates' employability. Graduates who enter the world of work should have strong working knowledge; the ability to work on the latest technology; the capacity for lifelong

learning, the ability to analytically think and solve problems with collaborative and cross-functional teams; the ability to engage in high-quality communication skills, creativity, innovation and social skills [4] to improve productivity and create economic opportunities in the labor market [5, 6].

In many nations, education has been a key concept attracted globally by academics and industries [7-9]. The role of HE has been increasingly emphasized in promoting employability and graduate employment. As demonstrated by the increase in university graduates' jobs as a performance measure of university education [10]. With this intent, the novel trends of countries all over the world are looking to execute strategies that promote employment likelihood for youth and improve labor productivity. A successful transition from university to work needs students' knowledge and academic competences to be used in real working situations [11]. One problem for employers with graduates or their future employees is the lack of employability skills [12]. Recent research in this area reveals how academia, students and business need to work together. Students need to train adequately with the skills required for employability and global citizenship [13].

Recent demands for theoretical advancement in the field of employability study for graduates [14] mean that the various literature branches need to be merged in more coherent approaches such as the model proposed by [15] which redefining the employability of students in six dimensions " human capital, social capital, individual attributes, individual behaviors, perceived employability, and labor market factors". This also ensures that HE institutions better recognize the roles and strengths of individuals in emerging the skills and qualities needed to achieve productive employment outcomes.

The main objectives of this research include:

(1) How to develop the strategies for graduates' employability to achieve creativity and innovations through employment initiative by embedding employability competences based approach into the training program.

(2) How to build human capacities to satisfy current and future requirements at all levels global, regional, and individual.

This paper is structured as follows: Section II introduces the literature review related to the conceptualizations of employability, competence-based approach to employability and employability skills. Section III clarifies the concept and the correlation between creativity and innovation. Section IV explores the link of employability competences in HE and WL. Section V illustrates the proposed employment initiative. Section VI Section presents the conclusion, future work and recommendations.

II. LITERATURE REVIEW

A. Conceptualizations of Employability

Hillage and Pollard (1998) [16] described employability as "the ability to self-sufficiently move within the labor market to achieve potential through sustainable employment", As indicated by these authors, on the employer's knowledge, skills and behavior. Similarly, Bridgstock (2009) [17] noted that the University's employability engagement usually focuses on improving individual capacities and skills that employers find attractive for effective employment, good performance and career development.

The concept of employability is also synonymous with the concept of work-readiness. Yorke (2010) [18] argues that work-readiness is preparation the employee with basic knowledge, cultural awareness and confidence necessary to enter into the working world in the 21st century, Although employability concepts are seen as a set of skills, both generic skills, (e.g., communication, teamwork, problem-solving, self-management, planning, and organizational) and personal attributes (e.g., self-confidence, resilience, discipline, loyalty, commitment, integrity) which is necessary for the industry and needed for graduates to secure jobs, but not enough to earn jobs (Bridgstock, 2009 [17]; Holmes, 2013 [19]; Jackson, 2016 [20]). Regardless of the term used, a graduate should be both employable and willing to work for greater jobs (Sachs, Rowe, & Wilson, 2017) [21]. Similarly, Cole and Tibby (2013) [22] indicated that all concepts of employability are based on the ability of an individual to get a job and keep it during the course of his/her career.

Based on Yorke's earlier definition, (Oliver, 2015) [23], indicated that employability is the opportunity to

"discern, acquire, adapt, and continually enhance the skills, understandings and personal attributes that make [students/graduates] more likely to find and create meaningful paid and unpaid work that benefits themselves, the workforce, the community, and the economy".

The concept of employment and employability are not the same. To be employed is to have a job while being employable means that you have the necessary skills to preserve jobs and to improve the workplace (G. Gowsalya, 2017) [24]. The employability of graduates has become a problem which in the global economy is not easily overlooked. A sufficient range of qualifications is needed for graduates to acquire skills and knowledge to equip them for entrance into the workforce. This ability to find and acquire an appropriate job, work well, and Building a career is an important part of a student's life which employers see as attractive in finding and acquiring suitable jobs as well as working well and building up a career [5].

B. A competence-based approach for employability

All employability conceptualizations were based on the need for skills to support individuals to obtain and retain a job in an extremely dynamic labor market in which employability can be represented in a multi-dimensional process which progresses over time through competence-based approaches that conceptual and organizational considerations include: knowledge, awareness and implementation of applied psycho-motor skills, attitudes and the ability to learn how to learn [25-29].

The literature has developed competence-based employability strategies focused on training and improve employees' qualifications, skills and attitudes which contribute to effective labor market performance. A commonly cited concept of employability in WL literature is continued execution, acquisition or creation by optimizing competences [27, 30, 31, 32].

C. Employability Skills

Employability skills have received considerable attention since 1970 when world economic depression led to large unemployment among young people and poor job quality.

Since then, service sector advancement in industrial business development and work organizations have contributed in increasing attention to core employability skills and its inclusion in education and training systems, in particular through the research on "flexible specialization" [33], "learning organization" [34] and "knowledge workers" [35].

Yorke and Knight (2006) [36] described employability as a set of accomplishments – competences, qualifications, abilities, experience and individual characteristics which increase the likelihood of employing graduates and success in their selected careers. The degree of employability of students was described by Diya Shukla (2012) [37]. The assumption was that expanding the curriculum with more apprenticeships and live business ventures would undoubtedly improve the preparatory process and increase the employability of graduates.

Most current employability definitions view it to be a collection of skills, both generic (e.g., teamwork, organizational, communication) and discipline-specific (e.g., the skills and knowledge relevant to engineering,

law or social work), as well as personal attributes (e.g., self-confidence, resilience, discipline) that are employment-relevant and industry-wanted. The hard and soft skills for a graduate are classified by employers as equal value [8, 38].

Dahiru Sale, (2016) [39] considered three key components of employability, including :

1. Core work skills: which defined as technical skills that involved specialized knowledge and competence in the flexibility of the use of equipment and instruments (electric power, automotive technology and other specialist skills) for specific specialized tasks.

2. Generic skills: These skills defined as core employ ability skills are widely divided into several social skills (e.g. learning to learn, communication, teamwork and problem-solving) which particularly identified in some learning methodologies (e.g. ICT skills, information searching skills, and experts' consultation) [40, 41, 42], and

3. Personal attributes skills: These skills referred as good behaviors and characteristics in fieldwork courses (integrity and ethics skills) for obtaining, maintaining and excellence in employment. Therefore, employability skills should be incorporated into all curriculum, and are better achieved through learning methodologies that encourage communication, team-work, problem-solving skills among others as well as linking training with the current requirements of the labor market for predicting and developing skills for future jobs [43].

III. CREATIVITY AND INNOVATION

A. Creativity

Creativity and creativity have been identified as core competences for the 21st century, especially in view of the reality that the two competences will foster human development by generating positive aspects. Such skills have been tested in various ways [44].

Creativity can be regarded as a multidimensional framework that integrates cognitive factors, environment, educational, community and cultural characteristics [45, 46]. So, it was appreciated for its significance for the advancement of personal and professional success[44]. Accordingly, creativity is defined as the process of mental and social production of thoughts, concepts and suggestions.

B. Innovation

Innovation is the implementation of creativity to achieve new value and can be applied to products, services, business models and processes. It is also important for the productivity of individuals and companies and necessary for global economic and social progress [47, 48]. Naturally, creators and innovators can have different characteristics and perspectives [49].

C. The correlation between creativity and innovation

The relation between creativity and innovation can be defined as synonymous, distinct features or complementary [50, 51]. The concept of the complementary framework of creativity and innovation is the most inclusive where this framework consists of two phases: the creativity phase (generation of new ideas)to solve the problem followed by the innovation phase that focuses on the implementation and acceptance of the idea.

Finally, these facts demonstrate that creative learning is necessary from primary school to HE, which encourage students to want to really know, to explore alternative topics and moving beyond classroom teaching. This shift in approach to education includes reconsideration in teaching strategies and challenges in traditional teaching styles to promote the skills required and considered the core competencies of the 21st century for students and future professionals [44]. Thus, Innovationrelies on new teaching and learning strategies and sustenance for students. The goal is to use sufficient technology to provide better skill training for more people, but without compromising their future[45]. Figure 1, shows the different skills of the 21st century.

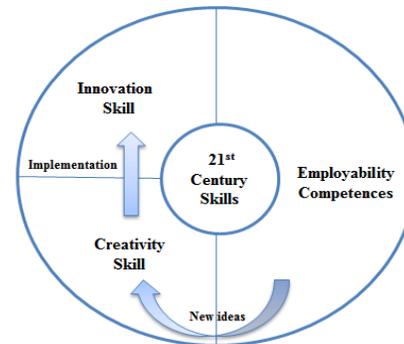


Fig.1. 21st century skills.

IV. EXPLORING THE LINK OF EMPLOYABILITY COMPETENCES BETWEEN HE & WL

In this section, the literature on expert employability Frameworks in the HE and WL context is discussed.

Inge Römgen, *et al.*, (2019) [29]introduced an overview of the definition of employability competences in HE by incorporating similarities and differences of four models in HE which led to producing six dimensions of employability. Also, they presented a summary of all the six main frameworks in five dimensions in WLwhich led to producing five dimensions of employability.

A. Dimensions of Employability in HE

The study of HE literature shows that the idea of employability in this context is frequently formulated across four models. These models are Knight and Yorke"USEM" model (2004) [36], Dalcre Pool and Sewell"Key to Employability" model (2007) [52], Bridgstock"Career management for maximum employability" model (2009) [17] and Hinchlie and Jolly " Concept of the graduate identity " model(2011) [53].

1. (Applying) disciplinary knowledge. It refers to knowledge, understanding and ability to apply and grow academia through intellectual engagement, innovation and reflection on achievement [53].

2. Transferable generic skills. These skills are the foundation of the individual's success and improvement of outcomes. For example, generic skills involve "information literacy, working with technology, written and oral communication, working in teams and numeracy, interpersonal skills, written skills, presentations skills, IT and numeracy".

3. Emotional regulation. Emotional intelligence enhances students ' ability to regulate and express feelings, which can improve employability skills, inspire

personal motivation, enhance relationships and reinforce individual health.

4. Career development skills. These skills are recognized as an important factor in developing career building capacity. There are different skills to advance this competence, such as "knowledge to effectively apply for and obtain work; to reflect one's competences, abilities in a desirable manner for employers or clients" and improves opportunities for success and occupational satisfaction.

5. Self-management. This skill qualifies the person to self-evaluate, assess their practices and the various aspects of their identity. Moreover, this dimension could include the concept of metacognition.

6. Self-efficacy. The key components of employability are self-efficacy, self-confidence, and self-esteem. These components are correlated with the willingness to act, encouragement, constructive actions in the face of challenges, the development of positive relationships and lifelong learning [54].

B. Dimensions of Employability in WL

This section concerned with six frequently-cited conceptual frameworks (different approach and dimensions) in referring to the employability that focused on competence-based approaches in the workplace. These frameworks arranged from oldest to recent, respectively, as a framework of DeFillippi and Arthur (1994) [55], expresses the career competencies by distinguishing between three categories: "know-why", "know-how", and "know-whom" competences. A framework by Hall, 2004 [56], Fugate, Kinicki, and Ashforth (2004) [57], introduces employability as "a form of work specific active adaptability that enables workers to identify and realize career opportunities". A framework of McArdle, et al., (2007), combines social and human capital. A framework of Van der Heijde and Van der Heijden (2006) [27], defines five employability criteria. A framework of Akkermans, et al., (2013) [3], excludes "job skills and work competencies, which are aimed at successfully performing a job". A framework of Peeters, et al., (2019) [32], introduces the concept employability capital involves knowledge, skills, attitudes and social services.

1. Human capital. This dimension means both to job-specific knowledge, skills and attitudes and meta-cognitive, which qualify graduates to succeed in the labor market. Accordingly, Human capital requires needs subject-specific knowledge and ability but also an analysis of the labor market and prospects for advancement, including interpersonal employment skills or (active) career management.

2. Reflection on self and organization. This dimension emphasizes understanding the role of the employee in the work environment including knowledge of personal priorities, beliefs, desires, ambitions, motivations, strengths and weaknesses. As such it encompasses career identity, self-awareness, and career competencies. Besides, the individuals' identifies the goals and values of the organization and to what degree they're willing to assume responsibilities together.

3. Lifelong learning and (active and passive) flexibility. This dimension involves flexibility which means a willingness and ability to evolve and adjust to

changing circumstances and conditions. However, it also requires knowledge, skills and behaviors for lifelong learning.

4. Social capital. It indicates the incorporation of knowledge, skills, and behaviors into specific social networks to establish mutual social relationships. As such, it involves team working skills and communicative career competencies.

5. A healthy work-life balance. This dimension demonstrates how work and life interact with each other. It encompasses the management of resilience and stress as well as the personal or private and labor requirements of the individual (contrary to it).

C. Integrating the Dimensions of Employability Competences in HE&WL

First, the robust similarity applies to the first dimension, "Human capital" (WL) and "(Applying) disciplinary knowledge" and "Transferable generic skills"(HE). These dimensions aim to develop the experience and knowledge required to do the work. Next, a parallel between "social capital" (WL) and some "transferable generic skills" can be drawn. The dimension of "social capital" is much wider than "generic skills", which typically include networking skills (writing and verbal communication and teamwork). Therefore, HE students should be aware of the importance and growth of professional networks [59]. Thirdly, "Lifelong learning and (active and passive) flexibility"(WL) can be linked to "Career development skills"(HE). In this situation, all components of the study reveal that continuing learning is regarded as essential to (keeping) of employment opportunities and also the ability (pro) to adapt actively and passively to changing situations and conditions. A fourth equivalent interests with the dimensions "Reflection on self and organization"(WL) and "Self-management" and "Self-efficacy"(HE). These dimensions address metacognitive skills and focus on your own beliefs and goals (motivation, ambitions, and identity). [60].

As well as the similarities, the two frameworks also have unique dimensions. Whereas highlights "Emotional regulation" as a cluster of competences in HE literature, WL presents the dimension. "A healthy work-life balance". Here, (IngeRömgen, et al., 2019) [29] argue in both ways for complementarity. Emotional regulation, on the one side, is a phenomenon that can be seen in every kind of (social) situation, or the capacity of controlling and resonating around emotions [61] which plays a role in the workplace as well.

Also, different studies indicate a correlation in terms of the working environment between "emotional regulation" and "Social capital" dimensions, as "Social networks" have shown their significance tool in the workplace for managing emotions [62]. On the other hand, "A healthy work-life balance", in HE where students must learn how to address different requests and interests (conflicting) [63]. This research emphasizes that this dimension is relevant to the HE context. Figure 2, depicts all dimensions and corresponding links for employability competences in HE and WL.

It is necessary to evaluate the capacity of an employee to recognize the strengths and weaknesses of a student or worker, including all sizes and linkages. Employability

can be measured through:

- Self-reports or questioning teachers and supervisors.
- Sick leave monitoring as an indicator of "A healthy work-life balance"
- Career path monitoring to measure Life long learning and (active and passive) flexibility.

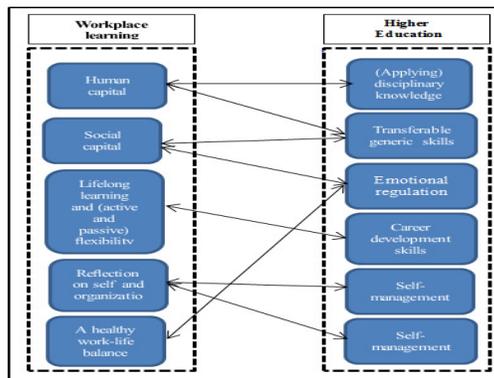


Fig. 2: Mapping between the dimensions of employability Competencies in HE and WL.

V. PROPOSED EMPLOYMENT INITIATIVE

Training and Sustainable Education Agency (TSEA), Community College, Imam Abdulrahman bin Faisal University, Dammam, Saudi Arabia where (TSEA) has organized an employment initiative to developed graduate employability by embedding employability competences into three training programs that enable to build graduates' internal capacity, enhance creativity, innovation capabilities and improve competitiveness to attain successful employment outcomes.

The employment initiative based on how employability can be integrated into an academic program that applied during, before and after a student's time at university to build and develop graduates' knowledge of career opportunities from an early stage. The employment initiative includes three training programs: the first one is Job Oriented Training Programs (JOTR), the second is Qualified Training Program for specialized certification (QTPSC) and the third is the Collaborative Training Program (CTP).

Each training program has been designed to meet requirements to develop graduates' abilities to satisfy the current demands of today and future needs on all levels of national, organizational and individual. Besides, graduates should develop knowledge and skills relevant to the responsibilities of their careers and work environment. The relations between the suggested training programs are shown in Figure 3.

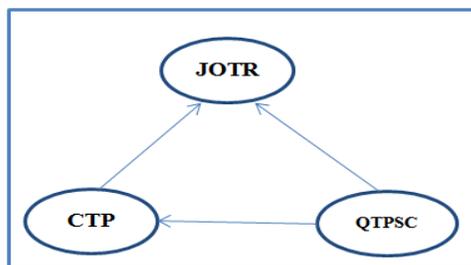


Fig. 3. Training programs for enhancing employability.

1. Job Oriented Training Programs (JOTR). Job Oriented Training Programs is a flexible education system under the cooperation efforts of college with private sector companies and organizations where TSEA at Community College undertakes communication with the private sector companies and organizations to organize training courses in which trainees are trained with the basic skills and knowledge for each profession.

JOTR implemented after a student's time at Community College. The training duration is from 6 to 12 months. At the end of the training, the trainee will be awarded a certificate and pursuing his job with the employer with whom he has signed a contract before joining the training program. The condition for admission in this training is that the graduates must have participated in both training program QTPSC and CTP. Besides, the qualifications of the graduates should meet the offered job. The partnership of companies to enhance employability is important because "employability skills are

defined as skills required not only to gain employment but also to progress within an enterprise to achieve one's potential and contribute successfully to enterprise strategic directions" [64]. Accordingly, Community College provides its students with academic qualifications while employers offer formal training that allows employers to easily select their future employees.

2. Qualified Training Program for Specialized Certification (QTPSC)

Certification can allow graduates to achieve a stable, active and successful career at all levels. Earning students' Specialized Professional Certifications (SPC) will greatly reward students, including higher salary prospects, increased demand for jobs and enhanced job stability. Furthermore, special qualification demonstrates graduates' ability to learn and develop constantly in their field, both of which are essential attributes for success in broader occupations, such as team leadership or complex jobs. **QTPSC** implemented during a student's time at Community College. In this training program, the faculty members in community college were managed various training courses that qualified to specialist certificate such as:

- CCNA (Cisco)
- Cybersecurity
- Mobile Application
- SQL & Database Design (Oracle)

3. Cooperative Training Program (CTP)

CTP is a structured practical training academic program and employers to improve student's skills for employment upon graduation. **CTP** implemented during summer vacation before the last year of graduation from Community College. The training duration is 12 weeks with 10 weeks of onsite training/practical work and 2 weeks for preparing the technical report and oral presentation. This training provides students complementary knowledge and training to deal with real-world problems in a professional environment. The students must join in the organization and work under the supervision of two supervisors (one from the organization and one from the college) to accomplish the training.

VI. CONCLUSION, FUTURE WORK AND RECOMMENDATIONS

This study adds insights to develop the strategies for graduates' employability to achieve creativity and innovations by employment initiative by embedding employability competences based approach into training schemes which are relevant and are important means to show how evolutionary creativity and innovation are optionally enabled to enhance graduates employability. Creativity and innovation are the main outcomes for integrating employability competences into training programs that are an essential part of career growth and development. Thus, intensifying the quality and scope of training should be prioritized to sustain creativity and innovation for human resource and performance development. The findings of this study have significant implications for student learning efficiency, including the development of employability capabilities for promoting graduate employability. A suggestion for further research should be evaluating the nature of training, designing and implementing packages and analyzing the performance of trained graduates in enterprises. Additionally, showing how far training can practically help enterprises to overcome the various problems by improving workers' idea generation and implementation.

Recommendations supported by Pre-requisites for employability

Producing employable graduates' is a part of the process of education. It encompasses the full educational vision of values from imparting knowledge and understanding to develop the skills and attributes. Employability skills are not as narrowly prescribed and defined as in the past [65,66]. So the recommendations supported by pre-requisites for employability of graduates that must be considered are defined as follows:

- 1- All graduates will require significant reskilling and upskilling in areas such as analytical thinking, innovation, awareness and skills to address the challenges of the modern workforce problems and enable them to keep pace with digital transformation.
- 2- Graduates must be intended to enter into the world of work, not lack knowledge in their subjects, new skills, and confidence to ensure the students of HE to get connected to employment.
- 3- Participate in work experience, placements and internships.
- 4- The faculty members must be providing required training to secure employment besides the teaching of subjects to meet the requirements of employers
- 5- Instead of finding any job, it must encourage youth to do some self-business.
since there are lots of vocational and self-employment skills which youth can learn.
- 6- Graduates must be involved in extra-curricular activities and co-curricular activities (e.g. student societies, clubs and competitive sport)
- 7- Graduates must be promoted their ability for making good career decisions and gain career development/management skills.
- 8- Graduates must aware of various employment opportunities, have high ambitions, expertise to manage their careers, sufficient work experience and the opportunity to apply successfully for jobs

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