

## A Model for Jordanian National Qualifications Framework

Abdallah Al-Zoubi<sup>1</sup>, Majed Abu Jaber<sup>2</sup>, Adnan Atoum<sup>3</sup>, Bashar Hammad<sup>4</sup>, Mamoun Dmour<sup>5</sup>

### Abstract

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A national qualifications framework (NQF) has become a necessity to support structural reform of the higher education system in Jordan at different institutional levels. The development and implementation of the Jordanian NQF focused on the needs of Jordanian higher education and its key stakeholders; will contribute to organizing the standards of Jordanian qualifications and other awards, and aid transparency of quality assurance at national and institutional levels. The framework also sought compatibility with international norms and expectations, including those of the European Higher Education Area (EHEA), thus assisting mobility, employability and internationalisation in Jordan and its international partners.

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### Introduction

Qualifications frameworks are classification systems for qualifications which are categorized according to a hierarchy of levels with numbers that vary from country to another according to national needs and international requirements. An NQF is in fact a device for the classification and recognition of skills, knowledge and competencies along a continuum of agreed levels and a way of structuring existing and new qualifications, which are defined by learning outcomes in the shape of clear statements of what the learner must know or be able to do whether learned in a classroom, on-the-job, or less formally. The NQF actually indicates the comparability of different qualifications and how one can progress from one level to another, within and across occupations or industrial sectors and even across vocational and academic fields (Pilcher, Fernie and Smith 2015). NQF development has actually been a major international trend in reforming national education and training systems since the late 1990s (Hall 1997, Fernie and Pilcher 2009 and Allais 2017). In fact, the International Labour Organization conducted a comparative study to comprehend the impact and implementation of qualifications frameworks, and key results of labour market outcomes in many countries around the world show that NQFs have acquired acceptance as a mechanism to offer simple solutions to the actual and complicated problem of transition from education to work.

The first nationwide vocational qualifications framework have officially been introduced in the UK in 1987. Australia, New Zealand, Ireland, South Africa and France followed in establishing their national qualification frameworks in the period 1989-1995. Currently, there are 47 countries, participating in the Bologna Process, committed to producing a national qualifications framework and over 150 countries worldwide are now developing and implementing similar frameworks. Many countries in the Middle East and North Africa including Egypt, Oman, UAE, Saudi Arabia, Bahrain, Kuwait, Tunisia, and Qatar have developed national qualification frameworks over the past decade. Jordan however lacks a qualifications framework at the national level and has a stop-start history over the past two decades. In fact, the Arab Labour Organization has assisted the country to develop a five-level framework for the Vocational Training Corporation that cannot be considered as a full NQF. Further, its definition of levels is broad and there is no procedure or methodology to objectively allocate individual qualifications to levels. The European Training Foundation (ETF) worked with the authorities in the period 2006-2008 on a draft NQF, but this did not progress beyond discussions and planning phases.

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<sup>1</sup>Princess Sumaya University for Technology, Jordan

<sup>2</sup>University of Jordan, Jordan

<sup>3</sup>Yarmouk University, Jordan

<sup>4</sup>German Jordanian University, Jordan

<sup>5</sup>University of Jordan, Jordan

In this paper, collective efforts to design and implement a national qualifications framework for higher education in Jordan are described. The pillars of the higher education system and its impact on society are first identified and weaknesses related to unemployment and socio-economic development are characterised. Cooperation with international partners was established to transfer know-how and expertise, particularly with European universities and institutions. Finally, steps, procedures and measures to launch a comprehensive national qualifications framework are described in details and initial results on the uptake and institutionalization of the framework are presented.

### **Education and Employment in Jordan**

Higher education is a key factor influencing standard of living and economic prosperity in Jordan, as it aims to develop, prepare, and train human capital for achieving comprehensive development, resulting in a stronger sense of social and political stability. Even though most of the higher education institutions (HEIs) in the Arab World have been established more than half a century, their main mission is still to focus on quantity rather than quality of graduates. In the last two decades, the higher education sector in Jordan witnessed a prominent development as well as progress evidenced by the increasing number of institutions, enrolled students, faculty members, administrative and academic members; size of expenditures and the financial government support to this significant sector. Universities are spread through the demography and geography of Jordan with total enrollment approaching 310,606 students with about 28,000 students coming from Arab or foreign nationalities. There are 29 universities (10 state and 19 private) and 21 private community colleges with student enrollments in the year 2017 of 28,265 and 14,191 students, respectively.

Statistics published by the Civil Service Bureau in 2013 indicate that out of 274,555 educated Jordanians (BSc and diploma holders) who have applied for jobs, only 3.06% (8,411 candidates) were selected for appointments. In the meanwhile, 280,263 non-Jordanian citizens have been working in the country. Following the implementation of the first measures, unemployment reached 17.1% in 1991 causing the biggest challenges of Jordanian economy. After three decades of the first measure, unemployment in Jordan has reached 14.6% according to a survey conducted by the Department of Statistics in 2016. The unemployment rate for males has reached 12.7% while it was 23.7 % for females with an increase by 1.6% compared to 2015. The same survey results show that the unemployment rate is high among university degree holders (Bachelor degree and higher divided into labour force for the same educational level) by 20.2% compared with other educational levels. In addition, the results show that 50.9% of the unemployed are secondary certificate holders and higher, and that 49.1% have less than secondary school qualifications, and male unemployed percentage of bachelor holders and higher was 22.2% against 76.7% for females which is varied according to educational level and gender.

This situation reflects that Jordanians are selective in regard to employment, since they prefer certain jobs, and refuse to work in others. Moreover, these numbers imply that high rate of unemployment as well as a lack of skills for certain jobs are considered as big barriers for development and economics in the country. Consequently, determining the various factors that motivate graduates in choosing their future careers is crucial to building policies and strategies for both educational and economic sectors. Developing a systematical qualifications framework that meets employees' needs and aspirations and challenges the high rate of turnover among workers is essential to any employment that aims to attract and retain qualified and highly competitive workers who ensure organizational survival and successes. This qualifications framework should help graduates improve their productivity. Universities may co-operate with other sectors in labour market to match graduate needs, which will be shown in their motives for work and employment stability. Further, following up with graduates should be one of the main missions of universities, which in turn will help them obtain feedback and evaluate performance. Consequently, this may help universities make positive changes in order to meet the demand of students, and address the new challenges and emerging issues in labour market. The qualifications framework should also serve as a basis for any policy and strategy that would be implemented in order to cope with severe economic crisis. One important pillar of any strategy aiming to increase economic growth is by emphasizing on sectors such as labour-intensive, export-oriented manufacturing and tourism that tend to hire women. Without a solid qualifications framework, these policies and strategies may repeat the same mistakes that result in more burden on the economics and barrier to human resources development.

Universities have recently worked on bridging the gap between higher education output and labour market in order to respond to the present and future needs of qualified and specialized cadres in various areas of knowledge; and to compensate for the lack of natural resources in the country by creating qualified human resources fortified by knowledge and efficiency.

However, high unemployment rate among higher education graduates is an indication that a substantial gap between the output of the HEIs and the needs of the labour market is still existing (Mryyan, 2014) and failure of policies and strategies implemented. This gap causes social unrest in the wider Middle East and North Africa (MENA) region (Salehi-Isfahani, 2013) in general and in Jordan in specific. Moreover, this situation represents a significant concern for families and policy makers of higher education (Albert 2000; Pillai et al,2011). This gap is mainly due to miscommunication between HEIs and the labour market, as well as to family background and social class that finally produces the wrong breed of human wealth (Assaad et al, 2017). The impact of the type of higher education institution a person attends on several labour market outcomes while controlling for his or her pre-enrollment characteristics was investigated (Assaad et al, 2017), and found that supply-side issues and institutional incentives have little impact on labour market outcomes while family background plays by far the largest role. HEIs are thus reorganizing themselves towards a dynamic contemporary model in order to meet the constant changing variables in society. Achieving community goals and satisfying labour market needs require optimal utility of human and material capital and resources.

### **NQF Development Considerations**

Qualifications frameworks have been viewed as a practical instrument to improve the relationships between education and employment and seem to continue to acquire acceptance as a mechanism to offer simple solutions to the actual and complicated problem of transition from education to work (Allais, 2011). They seem to inspire learners, educators, researchers and policy-makers to promote demand-led reforms. A review of the European experience in linking learning outcomes to qualifications frameworks revealed that detaching qualifications framework from national developments and experiences usually results in failure (Bohlinger, 2012). However, an NQF cannot reach its objectives without complementary strategies and a well-defined process of integrating qualifications within the educational system in order to ensure that all stakeholders recognize the required changes (Marock, 2011). The most important benefits of NQFs are simplicity, transparency and certificates transferability which enable employers to recognize the competencies of employees outlined by their education documentations, resulting in reducing the mismatch between demand and availability. In addition, certificates transferability across nations has become a necessity in global economies (Lauder, 2011).

Jordan is currently adopting an NQF as it is concerned with the poor articulation between qualifications and actual skills needs in the workplace. The country actually needs to rectify the poor credibility and quality of existing qualifications and training programmes, in addition to the lack of coherence and the rather fragmented nature of the qualifications system. A move towards the creation of a regional common labour market also created an impetus for Jordan to modify its national qualifications systems by taking into account regional comparability and compatibility, especially with Gulf states where many graduates of Jordanian universities work. The NQF is intended to include a variety of qualifications awarded in Jordan, enabling the different systems functioning in the country to be integrated. The NQF has been designed so that its levels correspond to those of the European Qualification Framework (EQF). The approach used is to prepare and identify level descriptors and compare to those awarded in various EU countries.

A preliminary analysis was conducted in order to clarify the rationale behind the development of the NQF which is vital for enabling policy makers to focus on the specific needs of the country and lay the foundation for a needs-led approach to NQF design and implementation. It was also important to clarify priorities, especially where there are significant resource constraints. For example, revising all VET qualifications to create a fully outcome-based modular system is an expensive undertaking and the benefits may not immediately justify the investment. It may suggest focusing efforts on one sector of education and training rather than a comprehensive NQF which includes all sectors of education and training. The final goal may be to build a comprehensive NQF, but it does not need to be a one-stage process.

Furthermore, most of the current quality assurance (QA) standards in Jordan, set by the Higher Education Accreditation and Quality Assurance Commission (HEAQAC), are developed in the absence of a framework which would set the standards for qualifications and act as a reference point for defining QA measures for higher education programmes. Hence, it is questionable if the existing standards are the most effective way to promote quality in higher education in the sense of integrating relevance of study programmes to the needs of the society. Jordan is in urgent need of establishing a national qualifications framework that would provide accessible information about standards, and help promote quality, access to study, and linkages to and public/labour market recognition of qualifications, both within the country, regionally and internationally (Jalham, 2015). Overall, the NQF will provide a coherent framework to support Jordan's national skills strategy.

This presents a vision of Jordan in 2025 with a well-educated and highly skilled population that contributes to a competitive, innovation-driven, knowledge-based, participative and inclusive economy.

### **NQF-Jordan Project**

One of the main challenges for achieving quality in HEIs in Jordan centers on the lack of NQF that sets clear, identifiable and consistent standards for all levels of study programmes and qualifications, and the associated QA processes. This situation is clearly stated in the National Agenda (2007-2017) that represents an ambitious effort to create a master plan for reform, future growth and development of Jordan. It states, with regard to improving the quality of HE system in Jordan: “The education and other sectors concerned with the development of human resources, such as the vocational training sector, lack effective mechanisms to coordinate human resources development policies, to monitor and evaluate quality of educational and training programmes”. For example, entities such as the Education Council, Higher Education Council, the Technical and Vocational Education and Training (TVET) Council, and the National Centre for Human Resources Development (NCHRD), conduct policy making and monitoring activities at sub-sector or programme level without any coordination mechanism. This is needed to ensure cohesiveness of their policies and the strategies to develop them, and ensure that they meet economic and development needs.

A consortium of 16 partners from Europe and Jordan, led by University of Barcelona, has successfully obtained funding from the Erasmus+ programme in order to support the structural reform of the higher education system in Jordan, develop a qualifications framework in line with national priorities, and implement at different institutional levels. The project entitled: “Towards a National Qualifications Framework in Jordan”, with acronym NQF-J, commenced on 15 December 2015 and lasted for three years, [www.nqfjordan.org](http://www.nqfjordan.org). The project endeavoured to establish an NQF model that identifies the generic expectations of all levels of higher and educational programmes, expressed as learning outcomes which are based on knowledge, skills and competences.

The project aimed to develop and implement an NQF focused on the needs of Jordanian HE, and its key stakeholders. It clearly demonstrated the standards of Jordanian degrees and other awards, and aided transparency in the QA of HE at national and institutional levels. Further, it was designed to be compatible with international norms and expectations, including those of the European Higher Education Area (EHEA), thus assisting mobility, employability and internationalisation in Jordan and its international partners and ensuring alignment with international norms and expectations.

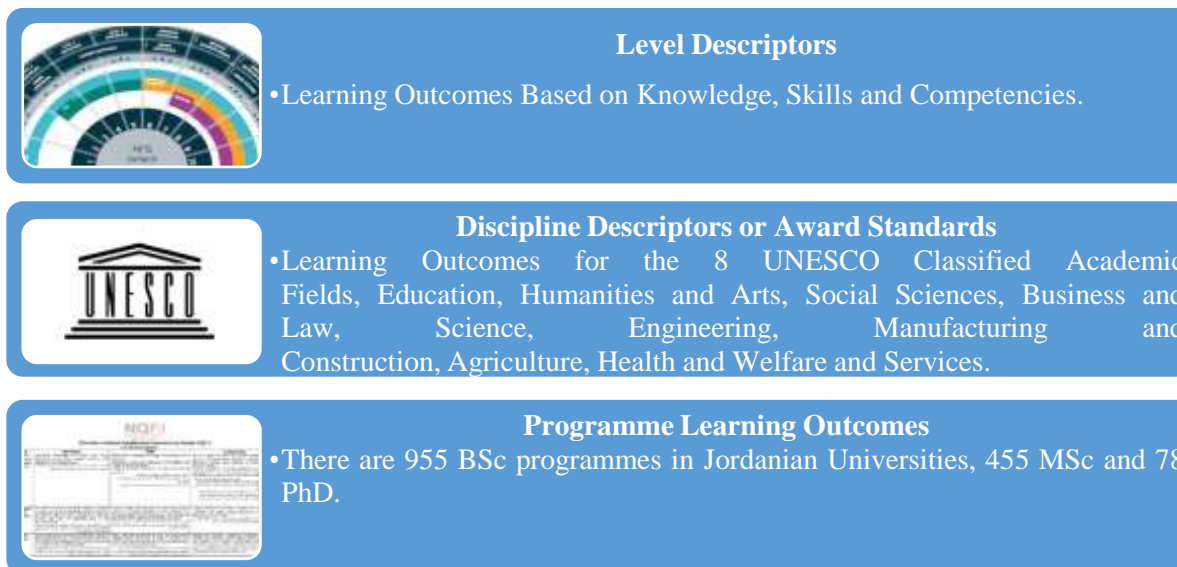
The standards of qualifications at each level were created and established through a number of activities in which descriptors were determined, along with appropriate QA processes, by all stakeholders in higher education. The methodology for setting and assuring the qualifications standards was disseminated among academic institutions, government agencies responsible for QA and accreditation, and a wide spectrum of stakeholders. Additionally, through rigorous comparison with other NQFs, the project aimed to demonstrate the comparability of Jordanian higher education wider awards with international norms and expectations, hence supporting mobility and employability. Other specific objectives of the project aimed to:

- Develop statements at sectorial levels based on learning outcomes,
- Strengthen and support national and institutional capacities for developing an NQF,
- Build the capacity of higher education institutions to produce and assess learning outcomes that are based on descriptors related to different educational disciplines,
- Pilot the new national NQF at partner universities and implement at the level of study programmes,
- Self-certify the NQF against the European framework.

### **NQF-J Prototype**

After involved discussions, the project proposed a hierarchy for the NQF, divided into three main parts as presented in Fig. (1), and structured within three layers:

1. Level descriptor that describe learning outcomes based on knowledge, skills and competencies.
2. Discipline descriptors or award standards learning outcomes: these include the 8 UNESCO classified academic fields (education, humanities and arts, social sciences, business and law, science, engineering, manufacturing, agriculture, health and welfare and services). Four of these fields were chosen in this project which are engineering, sciences, education and business.
3. Programme learning outcomes.



**Fig. (1): Proposed NQF three main parts: level, discipline and programme learning outcomes.**

Extensive activities and deep discussions and consultation with stakeholders resulted in a proposed NQF which was based on eight levels, four of which for higher education that include diploma (level 5), BSc(level 6), MSc (level 7), and PhD (level 8). The process involved activities such as:

1. Study visits have taken place to EU partners which allowed representatives from Jordan to have a first-hand look at EU experiences and learn closely of the procedures for implementing NQF in Ireland, Spain and Estonia. The participants were given the opportunity to talk to QQI, ANECA and the Estonian Quality Agency for Higher and Vocational Education (EKKA). During the visits, workshops were held such as an “In-Service Training for Academic Staff and Study Programme Managers on HE Curriculum Development”.
2. Expert groups were formed in order to draft discipline descriptors. The group designed an online questionnaire with specific emphasize on the need to have engaged participation from presidents and vice-presidents of all university in the country. In addition, group members have actually met with the High Education Council, receiving positive support.
3. A national conference on NQF development was held with participation of representatives from the Ministry of Higher Education and Scientific Research, the Higher Education Council, all universities and various stakeholders.
4. The Jordanian partnership continuously discussed the recommendations of the Minister of Higher Education and Scientific Research, particularly the necessity to include diploma programmes awarded by community colleges and existing or new technical programmes atNQF levels.
5. Members of the steering committee of the project held a meeting with the Minister of Higher Education who provided valuable feedback on the progress and development of the NQF.

Consortium members have eventually been able to prepare the first draft of the descriptors of the four higher education levels as shown in Table (1).

**Table (1): Proposed Level Descriptors for the Jordanian Higher Education System.**

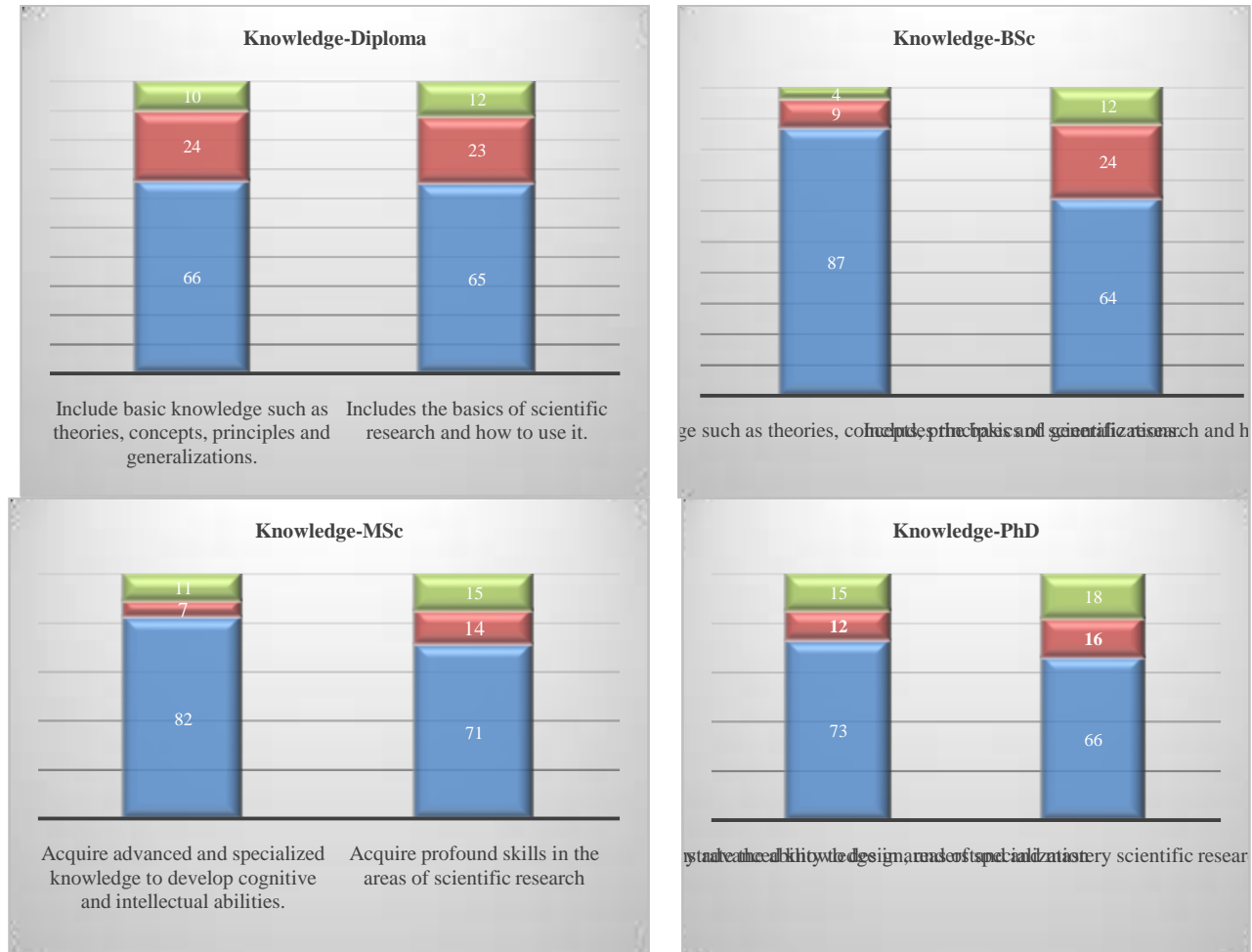
Level	Knowledge	Skills	Competencies
<b>Diploma Level 5</b>	Provide specialised knowledge of a broad area. Some theoretical concepts and abstract thinking, with significant underpinning theory.	Demonstrate comprehensive range of specialised skills and tools. Determine solutions and responses to well-defined and varied unfamiliar problems. Evaluate and use information to plan and develop strategies	Act in a range of varied and specific contexts involving creative and non-routine activities; transfer and apply theoretical concepts and/or technical or creative skills to a range of contexts. Exercise personal autonomy and take responsibility for own work and the work of others and/or for allocation of resources; and function within, multiple complex and heterogeneous groups.
<b>BSc Level 6</b>	Provide learners with good understanding of theories, concepts, principles, and generalizations pertaining to the field of study, as well as methods of scientific research and ways of employing them in the specialized field.	Acquire skills, demonstrating mastery and propose innovative solutions required to solve problems in a specialized field of study taking into account the related theoretical knowledge and the practical experience.	Manage technical activities, projects or groups; fully cooperate with others, taking responsibility for decision-making in a field of study.
<b>MSc Level 7</b>	Attain specialized knowledge and develop cognitive and intellectual abilities in a field of study as the basis for originality and research with critical awareness at the interface between different fields.	Apply specialized problem-solving skills required in research and/or innovation in order to develop new skills, knowledge and procedures to high level including novel and emerging technologies.	Handle and manage complexity; formulate judgments; transform good practice; study contexts that are unpredictable and require new strategic approaches; initiate actions; critically assess oneself as well as the teams working with; lead a group and take responsibility for it and for contributing to professional knowledge and practice.
<b>PhD Level 8</b>	Attain highly specialized knowledge at the most advanced frontier of a field of study and at the interface between fields; demonstrate an ability to conceive, design, implement and master skills and methods of research with scholarly integrity.	Be capable of critical analysis, evaluation and synthesis of new and complex ideas; solve critical problems in research and/or innovation and to extend and redefine existing knowledge or professional practice.	Demonstrate substantial authority, innovation, autonomy, scholarly and professional integrity and sustained commitment to the development of new ideas or processes at the forefront of study contexts including research. Be able to make progress in cultural, social and technological aspects in all areas in a knowledge-based society.

The questionnaire was actually designed to probe the opinion of higher education leaders and society at large. It consisted of a number of questions for each level and for each component of the knowledge, competencies and skills learning outcomes. The respondents were asked to choose the appropriate answer for each item and give their feedback when the item is not appropriate or needs modification. The questionnaire was posted online at the link <http://international.psut.edu.jo/Lists/NQFQuestionnaire/overview.aspx>. All university presidents, vice presidents, deans and head of departments in Jordanian universities were requested by email to fill in the online questionnaire. A total of 140 responses were received.

The respondents' feedback on the four level descriptor pertaining to the knowledge component for diploma programmes is shown in Fig. (2), where 66% of respondents thought that the phrasing of including basic knowledge such as theories, concepts, principles and generalizations was appropriate, whereas 24% found it inappropriate and 10% thought it needed modifications. For the question on whether the level descriptor includes the basics of scientific research and how to use it, 65% of respondents thought that the phrasing was appropriate, whereas 23% found it inappropriate and 12% thought it needed modifications. For BSc programmes, 87% of respondents agreed that the phrasing of including basic knowledge such as theories, concepts, principles and generalizations was appropriate, whereas 9% found it inappropriate and 4% thought it needed modifications. Similarly, for the question on whether the level descriptor includes the basics of scientific research and how to use it, 64% of respondents thought that the phrasing was appropriate, whereas 24% found it inappropriate and 12% thought it needed modifications.



However, for MSc level descriptor, respondents were asked whether the phrasing highlighted the need to acquire advanced and specialized knowledge to develop cognitive and intellectual abilities, with 82% reacting positively, 7% negatively and 11% thought it needed elaboration and modification. When the question on whether the level descriptor reflected the need to acquire profound skills in the areas of scientific research, 71% reacted positively, 14% negatively and (15%) thought the text requires modification.



**Fig. (2): Feedback on the appropriateness of the phrasing of the learning outcomes pertaining to knowledge components for levels 5-8 of the proposed NQF.**

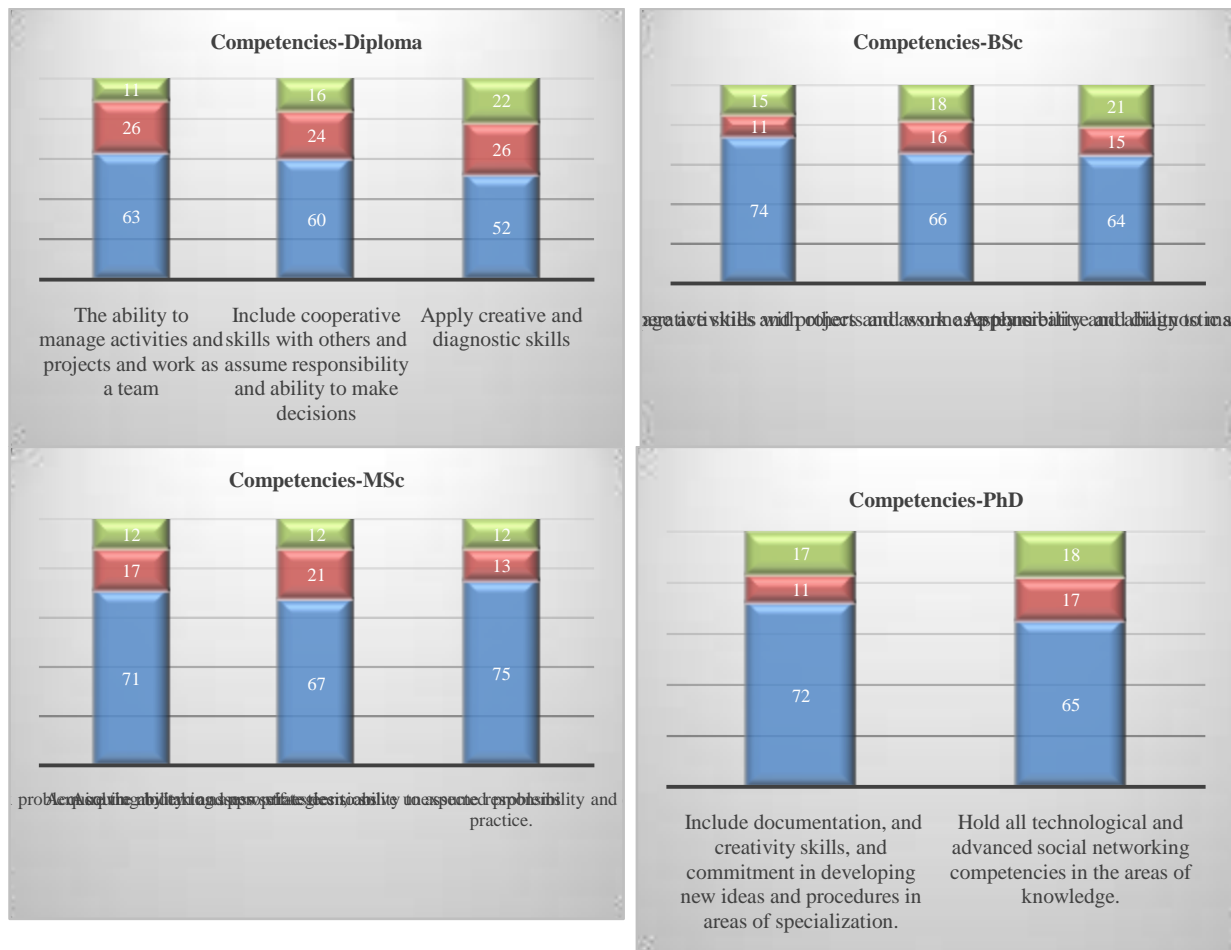
Further comments and feedback received from respondents about the knowledge component of the level descriptors pertaining to the diploma academic programmes emphasized the need to add new technologies and e-learning tools, and embed applications and training, while BSc programmes required focusing on industrial training and scientific research. For MSc programmes, priority must be given to specialized knowledge and experimental scientific research with self-educate tools, labs and instrumentation, abilities and opportunists for integration in society and problem-solving strategies for the nation. For PhD programmes, there was a need for practical experience to acquire advance knowledge, aspire for internationalisation and worldwide recognition and enabling creativity and innovation.

The respondents' feedback on whether the four level descriptor pertaining to the competencies component is shown in Fig. (3). For diploma learning outcomes, 63% of participants agreed that the phrasing encompassed the ability to manage activities and projects and work as a team, 26% disagreed, and 11% believed it required adjustment, while 60% reckoned it included cooperative skills with others and assume responsibility and ability to make decisions, 24% disagreed and 16% recommended rephrasing, and finally, only 52% though that the phrasing apply creative and diagnostic skills, 26% disagreed and 22% thought it needed modifications. Similar findings were obtained for BSc programmes, where 74% of participants agreed that the phrasing encompassed the ability to manage activities and projects and work as a team, 11% disagreed, and 15% believed it required adjustment, while 66% reckoned it included

cooperative skills with others and assume responsibility and ability to make decisions, 16% disagreed and 18% recommended rephrasing, and finally, 64% thought that the phrasing apply creative and diagnostic skills, 15% disagreed and 21% thought it needed modifications.

Respondents have also shown good agreement with the phrasing for the learning outcomes of MSc programmes, with 71% agreeing that it manages complex problem solving by taking appropriate decisions, 17% disagreeing and 12% asking for modifications.

Whereas 67% thought it encompasses the need to acquire modern and new strategies to solve unexpected problems, 21% did not concur and 12% asked for modifications, and 75% agree that it suggested the necessity to acquire the ability to assess self-esteem, ability to assume responsibility and contribute to the knowledge and professional practice, 13% disagreed and 12% required rephrasing. Comparable results have been obtained for PhD programmes, where 72% thought the level descriptor included documentation, and creativity skills, and commitment in developing new ideas and procedures in areas of specialization, 11% disagreed and 17% asked for modifications, and that 65% thought held all technological and advanced social networking competencies in the areas of knowledge, 17% disagreed and 18% asked for modifications.



**Fig. (3):**Feedback on the appropriateness of the phrasing of the learning outcomes pertaining to competencies for levels 5-8 of the proposed NQF.

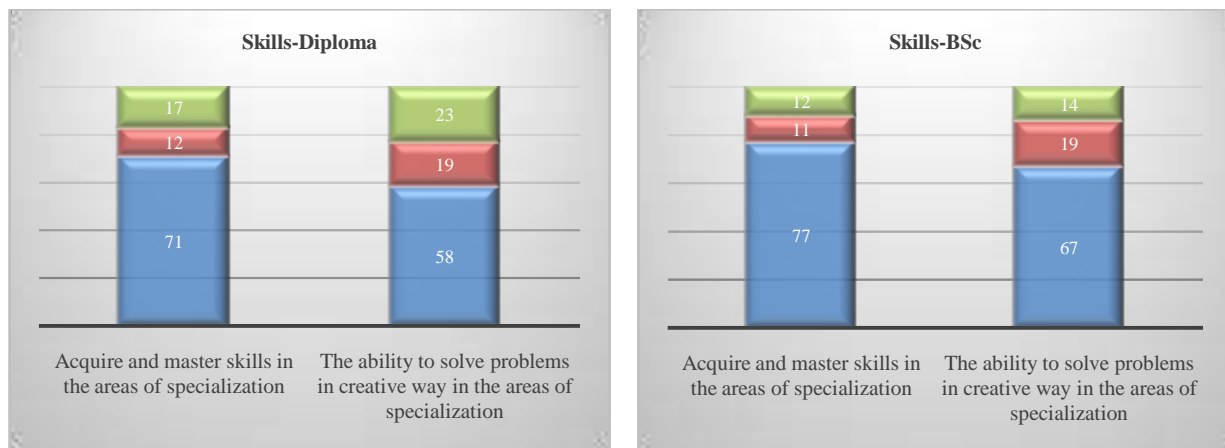
Further comments received from respondents about competencies pertaining to the diploma academic programmes emphasized the need for hands-on-activities, practice and participation with experienced people, creativity, and exposure to industrial environments, while BSc programmes require practice with experienced professionals, integration of technology and social networking competencies that can be implied in decision making process, tools and means that make them possible, application of technical skills and the acquisition of real-life problem-solving skills, focus on team work especially in graduation projects and strengthening the abilities of students in creative thinking.

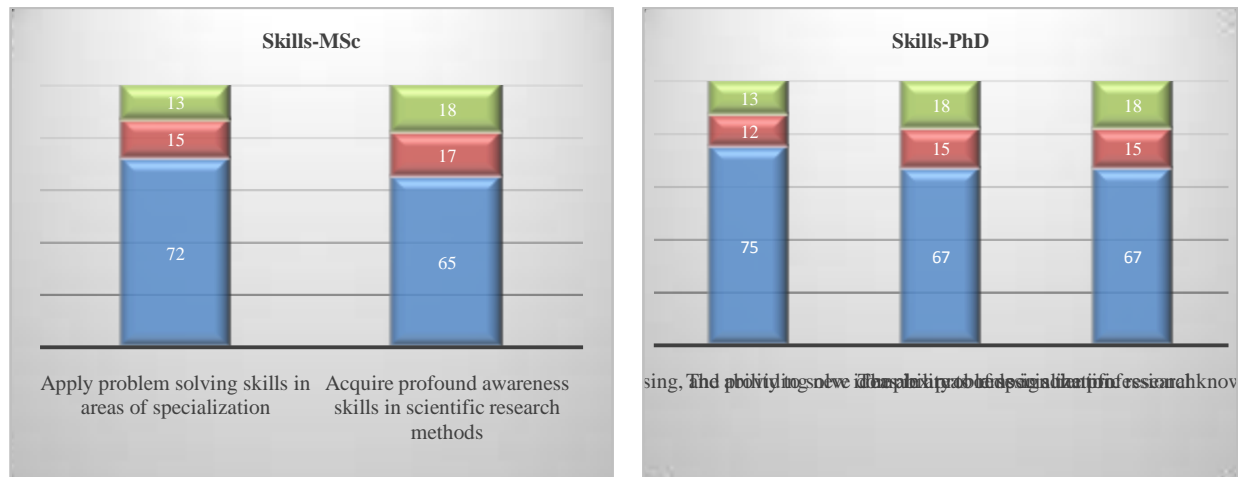


On the other hand, respondents stressed on the need in MSc programmes to update the strategies in teaching and learning process to be able to adopt problem solving approach, risk assessment and risk analysis of unexpected problems, attending many workshops to enhance research and experience, integration of technology and advanced social networking competencies, scientific research-driven projects; developing critical thinking strategies; handling technological aspects that help in the development of the field. While for PhD programmes, training on developing solutions and producing creative life-related or practical treatments of problems, and research oriented tasks were required.

The respondents' feedback on whether the four level descriptor pertaining to the skills component is shown in Fig. (4). For diploma programmes, two questions were asked, the first whether the descriptor clearly describes the need to acquire and master skills in the areas of specialization with 71% of participants responded positively, 12% negatively and 17% called for modifications; and the second was about the descriptor depicting the ability to solve problems in creative ways in the areas of specialization where 58% reacting positively, 19% negatively and 23% indifferently or demanding rephrasing. The same two questions were asked for BSc programmes, with 77% were in agreement that the phrasing properly describes the need to acquire and master skills in the areas of specialization, 11% in disagreement and 12% indifferent, whereas 67% were in agreement that the phrasing appropriately described the ability to solve problems in creative way in the areas of specialization, 19% disagreed and 14% called for elaboration.

Furthermore, two questions were posed for participants about MSc programmes, the first was whether the phrasing for the level descriptor was appropriate to describe the ability to solve problems in creative way in the areas of specialization where 72% reacted positively, 15% negatively and 13% indifferently or called for modification, and whether it described the need to acquire profound awareness skills in scientific research methods, 65% responded positively, 17% negatively and 18% requested rephrasing. In addition, three questions were presented for participants about skills requirements in PhD programmes, the first was whether the text entails the ability of analyzing, assessing, and providing new ideas in areas of specialization, with 75% responding positively, 12% negatively and 13% indifferently, while 67% reacting positively when asked if the phrasing treated the ability to solve complex problems in scientific research, 15% negatively and 18% demanding modifications, finally with the same resulted when asked about the ability to redesign the professional knowledge and practices.





**Fig. (4): Feedback on the appropriateness of the phrasing of the learning outcomes pertaining to skills for levels 5-8 of the proposed NQF.**

Additional recommendations and comments were received for diploma programmes including the need to encompass practical and problem-solving exercises in creative ways, to execute policies and directions and to focus on selection and orientation with transformation from theory into practice. Several participants suggested to consider the inclusion of a 3-6 credit hour practicum components course to be covered by experts from industry and to devise a comprehensive plan of critical thinking and problem solving to enable students to be creative in their areas of specialty. Suggestions for BSc programmes included the need for training and participation of industry in final graduate projects to enhance students' skills, inclusion of courses related to technical skills and writing, accommodate industry internship programmes, focus on selection and orientation towards hands-on-practice, and exposure to real problems solving under proper supervision in order to strengthening the abilities of students to master skills and solve problems. For MSc programmes, participants emphasized the need for creative skills, and inclusion of courses on human interaction and behavior, while for PhD programmes, participants suggested the need for forecasting before analyzing, focusing on soft skills and hands-on experience, deeper involvement in solving national problems and focusing on analytical and assessments skills.

### Future Steps and Legalization

The developed level descriptors by the project were approved and incorporated into the NQF of higher education which was developed by a national committee appointed by the Government of Jordan in January 2017 as part of a general NQF covering all levels and all types of education including school education, vocational and technical education. The objectives of the committee were to contribute to defining the minimum requirements for qualifications at the national level through learning outcomes for each qualification, guide institutions in planning and review processes, help employers, quality evaluators to identify the expected knowledge and skills of graduates in each qualification, facilitate the recognition of qualifications between countries as well as transfer between the local educational institutions and enhancing the integration among various systems and educational sectors in Jordan. The NQF proposal of the National Committee has been submitted to the prime ministry and has been approved. The government, through the HEAQAC, is currently working towards enacting the proper legislation which will provide the legal framework for implementation of the NQF shown in Fig. (5).



**Fig. (5) Proposed National Qualification Framework for Jordan.**

Further elaboration of the framework is currently being undertaken with all stakeholders involved including government departments, higher education community, industry and private sector, society at large, parents and students. Detailed discussions on the discipline and programme learning outcomes are also taking place with few pilots being tested for 4 different programmes at 6 universities partner in this Erasmus+ project.

### Conclusions

A national qualifications framework has become a necessity to support structural reform of the higher education system in Jordan in line with national priorities, and to implement at different institutional levels. The development and implementation of a framework focused on the needs of Jordanian higher education and its key stakeholders; clearly demonstrate the standards of Jordanian degrees and other awards, and aid transparency in the QA at the national and institutional levels. The framework also sought compatibility with international norms and expectations, including those of the European Higher Education Area (EHEA), thus assisting mobility, employability and internationalisation in Jordan and its international partners.

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