Wulff’s Model as a Framework to Evaluate the Quality of Nursing Doctoral Education

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ABSTRACT
Evaluation of doctoral education is a major concern in higher education institutions, and it is one of the research priorities in Jordan determined by the Higher Council for Science & Technology for the Years 2011-2020. This paper suggested a proposed model derived from Wulff’s Alignment Model and the integration of the Quality of Nursing Doctoral Education (QNDE) questionnaire as a formative assessment. This assessment included four domains; program features, faculty members, resources and evaluation. These four domains were assessed through the alignment of the students’, graduates’, and faculty perspectives. Aligning these perspectives will shed the light on improvement opportunities.

Keywords: Assessment of higher education, doctoral education, quality in higher education, quality models.

Introduction
Quality assurance in higher education has increased importance during the last years especially in the period of global recession when the graduates faced challenges to find a place on the labor market. Since then, the quality of higher education and the degree to which it fulfills the practical requirements was a central topic worldwide (Madzik et al., 2014).

In Jordan, evaluation of doctoral education is a major concern in higher education institutions, and it is one of the research priorities in Jordan determined by the Higher Council for Science & Technology for the Years 2011-2020 (HCST, 2010).

Quality means different things to different people and it is either related to processes or outcomes. In addition, the definition of quality can be subjective (Wittek & Kvernbekk, 2011). Elken (2007) concluded that there is no unified definition to quality because it is multifaceted in which different definitions exist for different stakeholders.

Harvey and Green (1993) classified the conceptualizations of quality into five distinct but interrelated categories in which quality can be viewed as: Perfection, exception, fitness for purpose, value for money and transformative. They also stated that although quality standards could identify the components of excellence, it could be almost achievable or unachievable to a certain degree, and that excellence is mainly evaluated by the reputation of the institution and the level of its resources like recruiting right students and providing right environment for knowledge development. Evaluating the quality in higher education needs an understanding of different views that inform the preferences of stakeholders like students, faculty and administrators. Zumeta et al. (2015) suggested that the best approach to quality evaluation is to measure the quality of the output directly like what students learned and their performance in the labor market and how employers evaluate their competencies.

Like other organisations, higher education institutions have customers or stakeholders. In the context of higher education, students are assumed as customers. However, the, donors, accreditation agencies, parents, legislators and the regulators, graduates, faculty and the employers are all stakeholders. In addition, the faculty members are also concerned with research, knowledge development and to serve the profession and the community. Consequently, they take the major responsibility for achieving goals in these areas. On the other hand, administrators are concerned with staffing, cost, resources and facilities, institution reputation, meeting accreditation standards and employment issues. A drop in any one of these could create a perception of sub-standard performance (Chaubey & Krivacek, 2016).

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Because there is no unified definition for quality, different methods and frameworks are used frequently for quality evaluation in a systematic manner (Wittek & Kvernbekk, 2011). A popular framework of quality management is the ISO9000 series. This framework emphasizes decision making, organisational leadership and processes. While, the Total Quality Management (TQM) framework is used to evaluate higher education programs, it emphasizes continuous improvement, process management, evidenced approach to decision making and it is founded on involvement of people and leadership. However, both frameworks are customer focused. The TQM does not set fixed standards for quality but instead it sets improvement as its goal through utilizing three criteria of goal attainment, resource utilization, and adaptability to measure the organisation’s performance. Adaptability refers to the organisational capacity to review its performance and modify its action to fit to the changes in business environment through timely feedback and continuous improvement processes (Chaubey & Krivacek, 2016).

On the other hand, Meirovich et al. (2006) discussed the shortcomings associated by the application of TQM in higher education and they referred it to the dual roles of students and instructors.

Another model is the Service Quality Model (SERVQUAL), it is not only a measurement framework; it is also a quality management tool which defines five dimensions for service quality; Tangibles, Reliability, Responsiveness, Assurance; and Empathy. From the perspective of higher education institution, tangible refers to the classrooms, laboratories, campus facilities; student support services departments and personnel. Reliability refers to teaching and learning on schedule and consistent outcomes. Responsiveness refers to the administration and faculty reaction to individual student or group situations on and off campus. Assurance indicates providing a safe and secure campus to earn students trust and confidence. Higher education institutions also aim to create and support multiculturalism and address the needs of minority and international students to reflect on empathy dimension. In this model, higher education institutions are service organisations, and their services are intangible and difficult to be measured. However, the quality of service depends on the attitude of individual customer. In addition, the delivery of services gives more value to customers than the service itself. So, there is always customer involvement in service production and consumption. Also, the model entails identifying the reasons behind the gaps between customer expectations and perceptions, if the customer expectations are greater than their perception, the service will be perceived of low quality (De Oliveira & Ferreira, 2009).

In Europe, promoting the European dimensions of quality assurance in higher education, the European Association for Quality Assurance (ENQA) in higher education forms like an umbrella organisation which represents quality assurance organisations from the European Higher Education Area (EHEA). ENQA promotes European cooperation in the field of quality assurance in higher education and disseminates information and expertise among its members and towards stakeholders in order to develop and share good practice and to foster the European dimensions of quality assurance. Educational institutions in central Europe resisted different models of quality management like the European Framework Quality Management and Common Assessment framework because its introduction rarely resulted in everlasting improvement of quality of higher education (Orsingher, 2006). The ENQA (2009) reported that the focus on organisation management and administration and considering the recommendations given by external consultants without real involvement of internal parties like students and faculty were some of the reasons for such problem. Ensuring the quality of doctoral programs raises the need for continuous monitoring and evaluation of curriculum content delivery and outcomes. In designing and delivering academic graduate programs, meaningful examination of a program's outcomes is one of the most challenging tasks facing faculty and administrators (Sakalys et al., 2001). One issue highly addressed is producing large numbers of graduates who lack the essential research competencies will result in underestimating nursing doctoral research education. Therefore, preparing competent researchers requires matching the number of students with the program’s capacity to provide education, mentorship, and research experiences (Minnick et al., 2010). Actually, nursing doctoral programs are usually governed by specific rules and regulations that control administering the program like the rules related to the course work, qualifying exam, dissertation work and the doctoral advisory committee. However, due to the complex nature of doctoral education, applying specific rules and regulations may control the structure of the program but the way it is administered may not be effective. Accordingly, there is a critical need to evaluate the quality of doctoral education from the perspective of recipients of doctoral education like students and graduates, and from the perspective of providers like faculty members.
Literature review

The dramatic increase in the number of doctoral programs during the last years draws attention toward the quantity and the quality balance. The quality of these programs are assessed and monitored all over the world by different means (Coetzee et al., 2015; Comiskey et al., 2015; Jae Kim et al., 2012; Ketefian & McKenna, 2005; Minnick et al., 2010; Kim et al., 2006; 2010; 2014; 2015; McKenna et al., 2014; Miki et al., 2012; Özdemir et al., 2014). However, reaching the balance between the quantity and the quality of these programs is a continuous need. Many researchers surveyed doctoral students and faculty as the most important stakeholders in higher education programs either to evaluate the quality, to identify barriers to quality or to find out improvement opportunities. For the national and international benchmarking of the quality of nursing doctoral programs in South Africa, and as a part of the international collaborative study, a cross-sectional survey design was used. Data were collected from 12 deans, 26 faculty, 26 doctoral graduates and 63 students from 15 nursing schools that offer a nursing doctoral program by means of structured email-mediated QNDE surveys. Significant differences were recognized among the groups were graduates scored their program quality most positively and faculty scored it most negatively. All of the groups rated the quality of their doctoral programs as good, but certain problems related to the quality of resources, students and faculty were identified (Coetzee et al., 2015). In this realm, a qualitative study was conducted by Nabolsi et al. (2014) at the University of Jordan to explore the nursing doctoral graduates' experiences. They reported that exploring graduates' experience evaluate and identifies challenges, strengths and weakness in the program. Azzam and O’laimat (2016) investigated the quality of postgraduate programs in the schools of education at the Jordanian universities from the perspectives of 184 faculty. The faculty rated the overall quality of the programs as moderate. Similarly, another study conducted at King Khalid University, the aim was to evaluate higher education programs from the perspective of 50 faculty and 279 graduate students. Both groups rated the overall quality as moderate. However, there were significant differences between their perspectives regarding the availability of quality standards and academic accreditation in which the faculty perceived it more positive (Al-Sufran, 2015). At the same university, Abu Na’ir et al. (2016) surveyed master and doctoral students to identify the barriers that hinder the development of higher education programs from their perspectives. McEwen and Bechtel (2000) stated that monitoring helps in establishing common and distinctive characteristics of doctoral programs and may lead to a greater understanding of the educator’s role who prepares nurses to assume greater responsibilities and leadership in the future. As a result, emerging criteria and new models for assessment of doctoral education were developed to improve outcomes. Maki and Borkowski (2006) encouraged faculty and academic leaders in their book to reassess teaching and learning process and to investigate the efficacy of educational practices such as the dissertation, that have historically led to awarding the doctorate. They also stated that formative assessment is essential in ensuring quality of doctoral education. Furthermore, they emphasized the importance of listening and responding to students to support them in their educational journey, and for graduate students to reflect on the relevance of their studies after graduation. Coetzee et al. (2015) reported that regular evaluation of the quality of nursing doctoral programs provide feedback to faculty and administrators, and provides an opportunity to carry out both national and international benchmarking.

The Alignment Model

The previously addressed models were originally developed in the world of business, and then it started to be used in different fields like the quality of health care services (Talib et al., 2011), and quality of education (Sahney et al., 2004; Venkatraman, 2007). On the other hand, other models were developed within the context of education like Wulff’s Alignment Model of teaching effectiveness which is a framework that emerged from the need to capture the complexity of teaching and learning. The basic components of the Alignment Model are students, faculty, content, context and outcomes (See Figure 1). The model suggests that aligning the components together will improve learning outcomes. In addition, the model illustrates how the key components of context, content, instructor and students all interact to shape learning (Martin-Williams, 2008), and that aligning components together could be achieved by formative assessment which is an improvement-based, internally centered and ongoing assessment process (Wulff & Nerad, 2006).
The Alignment Model is a result of 20 years of research done by Donald Wulff and others at the Center for Instructional Development and Research at the University of Washington. The model provides researchers, faculty, instructional developers, and administrators a path to approach the complex nature of effective teaching and learning (Wulff & Jacobson, 2005). The first premises underlying the Alignment Model emphasize the alignment of the program components with the formative evaluation and the feedback on the components to achieve the desired outcomes and improve the quality of the program. The second premise entails that constituents of the program must engage in reflective decision making about how to proceed, what type of data most helpful, how to analyze and interpret data and what approach needed for adjustment. Faculty members are the primary decision maker and students have the role as participants not subjects. The third premise is that the Alignment Model requires ongoing, cyclical efforts of assessment, because the basic components interact in a dynamic process (Wulff & Nerad, 2006). This is especially true, because the socialization process in which students move from knowledge users to knowledge producers changes the students' needs and expectations. The change in the desired outcomes is also affected by future direction at the national, institutional and programmatic level. Accordingly, ongoing formative assessment is essential in ensuring quality of doctoral programs (Maki and Borkowski, 2006).

**The proposed model**

In this paper, the Alignment Model will be modified to include the graduate perspective beside the students and the faculty perspectives. The content component will be measured by a formative assessment that evaluates the 4 dimensions; program features, faculty members, resources and evaluation process using the Quality of Nursing Doctoral Education (QNDE) Survey Questionnaire. Nursing doctoral education will represent the context component in the Alignment Model. The outcome component in the proposed model is evaluation of the quality of nursing doctoral education, represented by areas of agreement and disagreement regarding the 4 domains of QNDE that is used to assess the perspective of students, graduates and faculty members. As a quality approach, aligning these perspectives together will accordingly measure the achievement of the desired outcomes.
The higher education institutions should continuously improve the quality of their services to meet the demands and interests of their stakeholders (Donlagic and Fazlic, 2015). Kasetwar (2008) identified the key stakeholders of higher education institutions as: students, educationalists, parents, faculties, institutional management, legislative bodies, trainers, education loan providers, researchers and academics, industry, society, politicians, judiciary. Accordingly, these categories of stakeholders could differ according to the characteristics of the educational system and their inputs depend on the purpose of assessment or monitoring. In the proposed framework, the stakeholders are: students, graduates and faculty members (See Figure 2.). They are selected to evaluate the quality of nursing doctoral education using the QNDE questionnaire survey; students' and graduates' version and faculty version as a formative assessment. So, the type and nature of the used formative assessment will determine the selection of key stakeholders and vice versa, and the type of formative assessment should entirely serve the intended purpose of the assessment and evaluation.

**Why QNDE as a formative assessment?**

There are two different methods of assessing a doctoral program, formative assessment that is conducted for the purpose of improvement and the summative assessment used mainly for external decision makers like accrediting bodies and governmental bodies. Formative assessment provides feedback to faculty and students regarding the achievement of program outcomes and quality of the program. The faculty and students are actively involved in formative assessment in which their experiences in the program support the administrators’ decisions of the program review. In formative assessment the students play a key role as being providers and users of the formative data and provide them with the opportunities to acknowledge how the program is utilized what they brought to it and help them feel as taking part in the program direction (Maki & Borkowski, 2006).

The American Association of Colleges of Nursing (AACN) was the first to develop and revise the Quality criteria, Standards, and Indicators (QCSI) for doctoral programs in nursing through the International Network for Doctoral Education in Nursing (INDEN). In 2000-2001, the first evaluation criteria were widely used and specific to the context of doctoral education in the United States (INDEN, 2004). The INDEN’s recognized the diversity in monitoring systems for the quality of doctoral programs around the world. Accordingly, they decided to review these issues and develop criteria to promote high quality doctoral education in nursing through national and international collaboration. Thus, a committee of 15 members from eight countries, covering five continents was formed. The members were experienced educators and leaders in doctoral education in nursing in their countries. The committee investigated the quality in doctoral education over 3 years, mainly by electronic communications. The committee was looking to receive an international input to develop QCSI but this was not possible for most of countries. Consequently, they used the Position Statement of the American Association of Colleges of Nursing on “Indicators of Quality in Research-Focused Doctoral Education in Nursing” (ACNN, 2001) as a framework to give structure to INDEN’s quality criteria. Additional information was included to provide a global context and flavor. Then, they shared the last draft of their report with INDEN’s membership in November 2003 (Kim et al., 2006). Most of INDEN’s membership supported the principles developed by the committee. However, some expressed concern that QCSI criteria may not be appropriate to some countries and different types of doctoral programs especially where the main approach of study is through research with no formal coursework. These concerns allowed the committee to clarify that the QCSI are applicable for most programs because a lot of features are common in different types of doctoral education across countries (Kim et al., 2006). Afterward, they conducted another study to develop guidelines for QCSI for doctoral programs in nursing that may be used globally. They used the QCSI as a basis for their work, consultation with international experts, and performed literature review. They found that, the nature of the mission, the quality of faculty, the students, the curriculum, program administration, and resources were the major criteria of quality of doctoral program. They provided sufficient detail of the sub-criteria, standards and indicators for each of these criteria to provide guidance for quality doctoral programs in nursing. Experts from across the world agree that the QCSI would be applicable for most program types even research focused programs. Accordingly, this QCSI serves as guidelines for most doctoral programs in the world and formed the base for the Quality of Nursing Doctoral Education (QNDE) survey and was used across countries for national and international benchmarking of nursing doctoral program.
Later, cross-sectional descriptive study was conducted in Korea by Kim et al. (2012) from October 2006 to January 2007 as a part of an international study of the quality of nursing doctoral education. Specific aims were to examine the validity and reliability of the QNDE questionnaire, and identify areas for improvement. Seven deans, 48 faculty, 52 graduates and 87 students from 14 nursing schools participated. Data were collected via an online version of the QNDE questionnaire evaluating four domains: program, faculty, resources and evaluation. The results revealed high correlation between the 4 domains, and established the content and construct validity, and construct reliability of the questionnaire.

Implications and conclusion

The aim of this paper is to present the applicability of the Alignment Model as a framework in the assessment of nursing doctoral education and to explain the importance of using the QNDE survey questionnaire as a formative assessment within that framework.

As discussed earlier, the adoption of the Alignment Model to assess nursing doctoral education has multiple benefits. First, through aligning the components, it provides the opportunity to examine the intersections between the components and help to avoid misleading information that may arise if each component is examined individually and isolated from other components. Revealed information may indicate the need for further assessment of any of the individual components. Furthermore, understanding interrelationships will shed the light on areas for improvement. Second, utilizing QNDE survey questionnaire as a formative assessment in the alignment model emphasize the importance of continuous and cyclical methods to evaluate nursing doctoral programs instead of the traditional view in which evaluation is conducted over long periods of time or when it is compulsory. Finally, involving the most important key stakeholders like the students and the faculty members in formative assessments will reveal valid information and will help in deciding what modifications can be made to enhance alignment, and accordingly improve the quality of nursing doctoral education. Ultimately, achieving the desired outcomes.

In conclusion, Alignment model as a framework for assessing nursing doctoral education has a collective advantage over other frameworks like TQM and SERVQUAL models. It resembles the former in being founded on involvement of stakeholders and setting improvement as a goal to reach desired outcomes. Involving students, graduates and faculty members in formative assessments and accordingly decision making process achieves better responsiveness which is one of the SERVQUAL dimensions. However, it is not only customer focused, but also considers faculty members as providers of services. Utilizing the Alignment model as a framework to assess nursing doctoral education through QNDE survey questionnaire as a formative assessment will give more thorough insight and understanding of the educational situation. Consequently, it will ease the road toward continuous improvement to achieve desired outcomes.

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استخدام نظرية وولف ك إطار نظري لتقديم جودة التعليم لدرجة الدكتوراه بالتمريض

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ملخص

بعد تقديم جودة التعليم لمرحلة الدراسات العليا من التحديات التي تواجه المؤسسات التعليمية، وهي من أولويات البحث العلمي في الأردن التي أصدرها المجلس الأعلى للعلوم والتكنولوجيا عن الأعوام 2011-2020. تعرّض هذه الورقة نموذج مفتوح مرتبطاً من نظرية وولف التي ظهرت أساساً في مجال التعليم وتوضح كيفية استخدامه لتقديم جودة التعليم لدرجة الدكتوراه في التمريض وذلك باستخدام مقياس ثري بالمعلومات يكون من أربعة محاورات: جودة كل من: برامج الدكتوراه، الأساتذة، المصادر، ونظام التقييم، حيث يتم تقييم هذه المحاور من وجهة نظر الطلاب الخريجين والأساتذة، وبناء عليه يتم تقريب وجهات النظر ومقارنتها حتى سلط الضوء على فرص تعزيز جودة البرنامج.

الكلمات الدالة: تقييم التعليم العالي، التعليم في درجة الدكتوراه، جودة التعليم العالي، نظريات تقييم جودة التعليم العالي.