Development of Students' Assessment System to Conform Academic Standards at Faculty of Nursing Tanta University: A Case Study

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Project Abstract:

The development of students' assessment system at Faculty of Nursing Tanta University is a challenging area in nursing education. This case study aimed at exploring students' evaluation system at Faculty of Nursing Tanta University Tanta Egypt and presents and highlights the background, methods key findings and outcomes from the project of "Development of Students' Assessment System to Conform Academic Standards at Faculty of Nursing Tanta University" in order to provide a model for change and development of nursing education. The presented project was one of the competitive projects of the "Program of Continuous Improvement and Qualification for Accreditation" of higher education in Egypt. The evaluation project was sponsored by the Egyptian Ministry of higher education and Tanta University. The project objectives included four components: development of Code of Practice for students' evaluation, adoption of standardized competency-based assessments, adoption of an electronic system for students' evaluation, and formation of a Question Bank. The project duration was 18 months that was extended 6 more months as a result of the circumstances encountered by the country during the implementation of the project.

Introduction:

The process of the project included declarations and commitments of the university, the faculty, the dean, the principle investigator, the University Project-Management-Unit Director (UPMUD), and the Manager of Quality Assurance Center Tanta University Branch. Endorsement Letter of Tanta University confirmed its commitment to and role in the project "Development of Students' Assessment System to Conform Academic Standards at Faculty of Nursing Tanta

University" with the Program of Continuous Improvement and Qualification for Accreditation through participation in the project by 40% (L.E 400,000 Egyptian pounds in cash) for attainment of the project objectives was conducted. The endorsement letter was printed on the official letterhead of the (partner) institution and stamped with the official stamp of the institution/PMU stamp. The Faculty of Nursing Tanta University developed two committees for the purpose of this project (the management and the implementation committees / teams) and an organizational structure endorsement letter of both committees confirmed their commitment to and role in the project was conducted. Additionally, a list of the names, positions, academic credentials, and professional experiences of academic and non-academic staff starting with the members of the project management team, and followed by the participants involved in the project implementation was involved in the project. The participants CV's were also joined in an Annex.

The project methodology included many activities, such as meetings, development of tools for data collection, data collection, needs analysis, SWOT analysis, reviewing the Faculty of Nursing Bylaw, reviewing relevant and recent literatures, developing standardized theoretical and clinical examinations, formation of books, brochures, and posters including the guidelines and the instructions of the new developed assessment methods, and preparation of the infrastructure of OSCE lab, the unit of electronic system for students' evaluation, the printing center of the faculty, and the question bank lab. Additionally, workshops on the developed students' assessment methods were conducted for both students and staff members. Data were collected through questionnaires, letters and interviews. Findings suggest the benefits of the project to both the students as well as the teaching staff. Both are able to identify and use the developed methods of students' assessment, such as Objective Structured Clinical Evaluation, the objective exams (multiple choice questions "M.C.Q.", true and false questions "T & F", and the matching questions), the acquisition of skills to adopt the electronic system for students' evaluation, and to formulate a question bank for the six scientific nursing departments at

the Faculty of Nursing Tanta University Egypt.

1) The project basic data:

Project Title: "Development of Students' Assessment to Conform Academic Standards at Faculty of Nursing Tanta University"

Project Acronym: "Multiple stations Examination/Clinical Skill Assessment/Standardized Patient Examination, Objective Assessment, & Academic Standards/ Faculty Bylaw"

Institution: "Tanta University Faculty of Nursing"

Project Partners: Tanta University and Program of Continuous Improvement and Qualification for Accreditation

Budget Information:

A. Requested fund (from Program of Continuous Improvement and Qualification for Accreditation)   (L.E) = 535000

B. Total co-financing from Tanta University   (L.E) = 400000

C. Total co-finance from other partners   (L.E) = 000000

Total Budget (Sum A + B + C):   (L.E) = 935000

The following were the financial constraints that had to stick for:
Tanta University Institutional Co-financing of the project was 40% and the "Program of Continuous Improvement and Qualification for Accreditation 60%.

Project Size: Large

Project duration: (18) Months + (6) Months extended due to the circumstances encountered by the country at the time of implementation of the project, started from October 2009 to September 2011.

2) Project Team:

Table (1) indicate the number of staff involved in the project

Category	Number of Staff involved in the project
I. Administrative Committee / Project Management Team	
Assistant Staff:	2
Teacher/lecturer/Assistant Professor:	6
Associate Professor:	1
Professor:	2
II. Implementation Committee / Project Implementation Team	

Assistant Staff:	10
Teacher/lecturer/Assistant Professor:	7
Associate Professor:	1
Professor:	1
Non-academic Staff:	6
Total number of academic and non-academic staff involved in the Project:	36

3) Faculty / Institute Data:

University: Tanta University

Faculty/Institute: Faculty of Nursing

The date of establishment of the Faculty: 1982

Table (2) Total number of the Faculty/Institute students for academic year: 2008/2009

First year	Second year	Third Year	Fourth year	Total
384	346	319	409	1458

Table (3) Total number of the postgraduate students for academic year:

Diploma	Master	PhD	Total
0	71	30	101

Table (4) Number of the staff members of the faculty:

Prof.	Assoc Prof.	Lecture	Total	Number of the outside or leave
3	2	43	48	25

Table (5) Number of Assistance:

Assistant Lecturer	Demonstrator	Total	Number of the outside or leave
32	24	56	4

Table (6) The number of faculty administrators:

Student affair	Financial management	Other administrative affairs	Postgraduate	Technicians
5	8	21	1	10

Table (7) Educational programs granted by the faculty (undergraduate):

SN	Program	Program courses
1	Bachelor Degree in Nursing Science	43
Total number of programs= 1		Total number of courses (unrepeated) = 43

Duration of the program:

Four years + one year internship

Program level (in the credit hour system):

Not Applicable

Table (8) Educational programs granted by the faculty (postgraduate): ten programs

SN	Program	Program courses
1	Medical Surgical Nursing Departments	8
2	Maternity and Gynecological Nursing	8
3	Pediatric Nursing	10
4	Psychiatric Nursing	7
5	Public Health Nursing	7
6	Nursing Service Administration	7
7	Critical Care Nursing	8
8	Geriatric Nursing	6
9	Nursing Education	8
10	AIDS Nursing	6
Total number of programs= 6		Total number of courses (unrepeated) = 74

List of scientific Departments:

1- Medical Surgical Nursing Departments

2- Maternity and Gynecological Nursing Departments

3- Pediatric Nursing Departments

4- Psychiatric Nursing Departments

5- Public Health Nursing Departments

6-Nursing Service Administration Departments

Table (9) Ratio of the staff member to the students

Ratio of the staff member to the students	1:32
Ratio of the staff member on-the-job to the students	1:64

Background:

Faculty of Nursing, Tanta University is competing to achieve accreditation through implementation of the Quality Assurance System in nursing education. As development of students' evaluation system is one of the Quality Assurance System requirements, the faculty is trying to adopt new objective methods of evaluation. So long as assessment of theoretical and clinical competence is of great importance when evaluating the expected learning outcomes of nursing education, our faculty challenges in assessing both the theoretical and clinical competences. Although nursing educators applied various methods in an attempt to find an appropriate tool, including written and oral exams, seminars, role play, group discussion short and long practical cases, yet the majority of examinations at the faculty are of the old traditional type. They are neither evidence-based nor community-based nor performance-based assessment methods. They are unreliable, invalid and non objective. The conventional clinical and theoretical

examination is beset with several problems. Most of the methods used have proved to be deficient or defective in meeting the five most important criteria of objective examination that ensure that standards of evaluation, standards of care for patients and standards of practice for nurses are met. These criteria include: systematic, measurable, attainable applicable, valid and reliable, and tangible / time bounded examination. Although marking should depend only on student variability, patient and procedures variability and examiner variability significantly affect students' scoring. The subjectivity involved may reduce the marks awarded by different examiners for the same students' performance. The marks awarded also reflect only the global performance of the students and are not based on demonstration of individual competencies and creativity. Problems in communication significantly affect the outcome. Attitudes are usually not tested at all by the conventional examination, and the student is questioned

only regarding the final conclusion. The final score indicating student' overall performance gives no significant feedback to the student. The ability to examine a student and arrival at a conclusion is not observed by the examiners/staff members. Additionally, the examination code of practice (faculty evaluation bylaw) is not developed/revised/ renewed to meet the current academic nursing standards in nursing education and the program intended learning objectives/outcomes. Also, there is no electronic system for student evaluation, and there is no question bank. As a result of limitations involved in the evaluation system at the Faculty of Nursing Tanta University, graduates are up to the level required. Investigating the stakeholders' needs and evaluation of the current graduates is unsatisfactory. Nurses are not competent and do not satisfy and community needs.

Scope:

Student Evaluation Project covered the entire undergraduate as well as two of the postgraduate nursing courses over a period of 18 months. The code of practice was structured, revised and approved by the faculty council. Infrastructure and modifications suitable for the new system was established. Staff members were trained to effectively apply the new methods of evaluation. Also students were trained on those new methods before being implemented. The project plan and outcomes were monitored and evaluated. **The project beneficiaries** included: student nurses, staff members, patients, families, hospitals, health care system, and the community as a whole got benefit from graduation of competent nurses that satisfy stakeholders' needs. The project **importance** included enhancement of the Faculty of Nursing and Tanta University national strategy of education development. The project implementation helped the faculty to overcome the problems encountered in the previous examinations system; guarantee continuous improvement as a step to meet the requirements of the National Accreditation Committee in Egypt; enhanced teaching and learning process; met the academic standards; met the faculty mission and vision; graduate competent professional nurses at national, regional, and international standards who will be able to provide evidence based nursing, culturally sensitive communication, ethical principles, awareness and responsiveness to health care

system, satisfy stakeholder's needs, and compete for excellent positions.

Objectives:

The project objectives were (1) development of examination code of practice (faculty evaluation bylaw revision, renewal and approval of the examination items), (2) development of objective theoretical and clinical examinations, (3) adoption of electronic system for student evaluation, and (4) adoption of a question bank. The project **assumptions** included: (1) Development of objective summative and formative tools for assessment of theoretical and clinical examinations that meet the academic standards, (2) Solving problems encountered by the present evaluation system. (3) Attainment of one of the requirements of the National Accreditation Committee in Egypt.

Description:

The project included**:** (1) Development of examination code of practice (faculty evaluation bylaw revision and renewal). The code of practice described the conduct of objective formative and summative assessment of the nursing courses of the undergraduate curriculum and of two courses of the postgraduate programs at the Faculty of Nursing Tanta University. Details

of the responsibilities of various boards and committees which relate to this Code of Practice were available at faculty student handbook and in a brochure for evaluation rules, and at Tanta University website. (2) Development of objective theoretical and clinical examinations. (3) Adoption of electronic system for student evaluation, and (4) Adoption of a question bank. The project supported a large number of the Faculty of Nursing Tanta University students of undergraduate nursing program of six nursing departments /specialties (Fundamental and Medical Surgical Nursing, Maternity and Gynecological Nursing, Pediatric Nursing, Community Health Nursing, Psychiatric Nursing, and Nursing Service Administration). Additionally, the new developed student assessment system was implemented on two courses of the post graduate nursing programs. The project period was 18 months extended 6 more months.

Methodology and the faculty experience with the project:

Faculty of Nursing Tanta University faces several problems in students' evaluation system. These include: the examination code of practice (faculty evaluation bylaw) is not

developed to meet academic standards, absence of objective theoretical and clinical examinations, there is no electronic system for student evaluation, and there is no question bank. The project included the following steps: (1) formation of assessment committees [three months]; (2) preparation of the infrastructure [six months]; (3) searching, and sourcing [three months]; (4) development of the evaluation code of practice (review and renew of the faculty evaluation bylaw, development of drafts, assessment of opinions, development of final version, approval from the faculty council, and dissemination among different stakeholders [six months]; (5) development of objective theoretical and clinical examination (conduction of thirty six workshops for training of staff for the six scientific nursing departments in the Faculty, development of drafts, assessment of opinions, development of final versions for the six nursing departments) [three months]; (6) development of an electronic system for student evaluation [six months]; (7) conduction of six meetings for training and examining students using the new developed examination methods [three months]; and (8) formation of a question

bank [three months]. The project period was 18 months extended 6 more months and some of the activities were overlapped in the timescale.

Needs Analysis:

Faculty of Nursing Tanta University is trying to achieve accreditation through implementation of the Quality Assurance System in nursing education. Development of students' evaluation system at Faculty of Nursing Tanta University is one of the Quality Assurance System requirements. In this regard, assessment of theoretical and clinical competences is of great importance. Assessment of students at Faculty of Nursing Tanta University did not measure high levels of competencies, and creativity in examinations. Graduates are not professionally competent based on assessment of stakeholders' opinions. Stakeholders' opinions indicated that the present evaluation system is not evidence base and the exams did not measure the actual performance of the students. Such limitations led to the disability of the nursing graduates to meet the needs of the patients and the market, and led to community dissatisfaction with the faculty graduates. Faculty of Nursing Tanta

University is in need to use the most valid and reliable methods of students' evaluation in order to overcome the limitations encountered in its theoretical and clinical examinations to become an integral component of the entire teaching and learning process, and to meet the community needs.

SWOT Analysis:

The strengths included in the present

evaluation system were supportive administration of the faculty, variability in staff experiences, and implementation of some objective examinations, e.g. Multiple Choice Questions (M.C.Q.)

The weaknesses included in the present evaluation system were subjectivity; problems in communication; attitudes are usually not tested; no significant feedback to the student; examination do not meet the program Intended Learning Objectives/Outcomes (ILOs); examinations do not measure competencies and creativity; and the examinations do not measure the three domains of nursing education (knowledge, skills, and attitudes). On the other hand, there are some opportunities that will enhance the present evaluation system.

The opportunities included in the present evaluation system were project fund and an opportunity to change and correct the present evaluation system.

The threats included in this project were the resistance of the staff to implement the new developed evaluation system, refusal of the staff to implement the new methods adopted by the faculty, staff withdrawal from the project for different reasons e.g.
traveling abroad, and discontinuation of the project fund, time and money limitations, retardation in admission of a time/stage report of the project, administrative barriers, and change of the university presidents. **In order to overcome the threats/risks,** the following strategies were applied: The stakeholders were involved in the project activities; their opinions were assessed; further explanation were given for those who ask for; handouts, poster, and a portfolio were provided; thirty six workshops and six meetings were conducted; involvement of the faculty administration by attending and providing regular reports about the project progress; and getting approval of the new developed students' assessment by the faculty council.

Activity plan and implementation

The project specific objectives are: (1) develop /review/renew and approve the faculty examination code of practice (faculty evaluation bylaw), (2) develop objective theoretical and clinical examinations,

(3) adopt an electronic system for student evaluation, and (4) establish a question bank. **The project objectives attained through the following activities**:

(1) Available committees for conduction of various project objectives and activities, e.g. a committee for reviewing and renewing the faculty evaluation bylaw, and a committee for constructing and reviewing examinations. This *output faced* staff resistance and lack of cooperation [three months]. (2) Preparation of the infrastructure [six months]. This output faced by lack of resources in the term of place, money and people. (3) Available Code of Practice for students' evaluation (sourcing and searching, review and renew of the faculty evaluation bylaw, making drafts, assessment of opinions, development of final version, approval from the faculty council, and dissemination among different stakeholders [six months]. (4) Available of the Objective

Structured theoretical and clinical examinations [six months] for the six nursing departments and 2 post graduate courses (conduction of thirty six workshops for training of staff, development of drafts, assessment of opinions, development of final versions, training and examining students using) the developed assessments [six months]. This output faced inability of staff members to use information technology, lack of staff and students' cooperation, and lack of human and non human resources. (5) Available electronic system for students' evaluation *[three months]*. This *output faced* lack of resources in the term of place, money and people, and staff and administrative resistance. (7) Available question bank *[three months]* included formative and summative examinations. This *output faced* by lack of resources and staff cooperation. **The project resources included** human and non human resources, such as personnel, money, physical environment, computers, printers, photocopy machines, scanner, papers, manikins, video cameras, electronic machine for students' assessment, and six OSCE stations, etc.

Logical Framework Matrix

Code	Specific Objective(s)	Outputs/ Outcomes	Activities
I	(1) Development of Code of Practice for students' evaluation.	1.1. Available evaluation committees for revision, and renewal of faculty evaluation bylaw, and development of student assessments.	1.1.1. Invitation of staff for participation in the committees 1.1.2. Conduction of 3 meetings for appointment of staff for various evaluation committees (1committee for development of code of practice, electronic system, and the question bank, and 6 committees for development of theoretical and clinical objective assessments for the 6 nursing departments). A subcommittee from the 6 committees will be assigned for preparation of the infrastructure needed for the various project objectives, e.g. OSCE stations
		1.2. Available new evaluation bylaw/code of practice with details of the responsibilities of various boards and committees which relate to this Code of Practice, documentation of marks and grads, and other concepts	1.2.1. Assessment of opinions regarding the present and the new developed evaluation bylaw through questionnaires 1.2.2. SWOT analysis 1.2.3. Searching and sourcing, development of drafts, development of the final version of the new code of practice, and approval by the faculty council 1.2.4. Dissemination through faculty student handbook and a brochure
II	(2) Adoption of standardized competency-based assessments.	2.1. Available infrastructure suitable for the developed students' clinical and theoretical assessments	2.1.1. Preparation of 6 OSCE stations for assessment of clinical competencies for the 6 nursing departments 2.1.2. preparation of a photocopy center equipped with necessary machines for safe exams printout 2.1.3. preparation of a suitable place fulfilling the requirements for the question bank
		2.2. Trained staff on the development of objective assessments	2.2.1. conduction of 6 workshops for training the staff of the 6 nursing departments on the development of objective assessments, criteria of examination paper, the electronic system for students' evaluation, and categories and subcategories of examinations for the question bank (pre test and post test will be done, and needs assessment)
		2.3. Available objective summative and formative tools for students' assessment for	2.3.1. development of drafts for the 6 nursing departments 2.3.2. assessment of opinions regarding the developed tools 2.3.3. peer reviewing

		theoretical and clinical competencies and measure the ILOs of the faculty program and the courses.	2.3.4. development of final versions based on the obtained comments 2.3.5. Expert reviewing
		2.4. Trained students on the use of the new assessment methods.	2.41. orientation/training of students on the use of the new developed assessments (OSCE and other methods) 2.4.2. routine assessment using the developed objective assessments 2.4.3. assessment of feedback

Logical Framework Matrix

Code	Specific Objective(s)	Outputs/ Outcomes	Activities
III	(3) Adopt an electronic system for students' evaluation.	3.1. Available equipment needed for electronic system for students' evaluation	3.1.1. purchase of the electronic machine for students' assessment
		3.2. Available instructions on the assessment of students using the electronic system	3.2.1. Formulation of a portfolio that include staff members, students, and administrators directions on the use of the electronic system for students' evaluation
IV	(4) Formation of a Question Bank.	4.1. Available question bank that include 6 categories and subcategories for assessing theoretical and clinical competencies that include knowledge, understanding, skills, attitudes, and communication.	4.1.1. Preparation of the infrastructure and development of drafts of templates and categories for each course/or department 4.1.2. Development of final versions of the templates for each department/ category and subcategories

Feedback

Feedback of the students upon whom the evaluations implemented were assessed to evaluate the pros and cons met with during implementation. Community and stakeholders feedback was assessed in order to ensure the benefit of the implementation of the project.

Project Outputs/Outcomes:

The project outcomes included availability of objective summative and formative tools for assessing theoretical and clinical competencies that include knowledge and understanding, skills and attitudes, meet community and labor market needs; and are transparent and fair, availability of electronic examinations; available unit for electronic assessment, ; existence of a Question Bank, trained staff on the development of the new student assessments; and students' assessment using the new developed tools and methods, prevention of private classes, evaluation committees will be available for development, revision, and renewal of evaluation rules and examinations to meet national, regional, and international standards, and dissemination of evaluation rules among students, staff, and administrators. Additional project outcomes included: (1) students and graduates provide patients with competent nursing care at the six nursing specialties of Faculty of Nursing Tanta University. (2) Students communicate effectively in a culturally sensitive manner with the patients. (3) Students acquire knowledge and skills needed for effective patient care. (4) Students use information technology for the benefit of their patients. (5) Students provide evidence based nursing. (6) Students demonstrate professionalism, ethical principles, and an awareness of and responsiveness to the larger context of health care system. Graduation of competent nurses at national, regional, and international standards**.** The outcomes also involved available objective fair evaluation examinations; available evaluation committee for development, revision, renewal of faculty evaluation bylaw,

 available developed code of practice for students' assessment (new evaluation bylaw), available evaluation rules and ethics in documents.

Dissemination and Sustainability:

The project dissemination through: (1) Conduction and or participation in national and international conferences and workshops, seminar/round table discussion and meetings, and publication in faculty student handbook, brochure, posters, books, and university web-site. The project

sustainability is influenced by three major groups of factors, and five important sub factors: (1) project design and implementation factors: (a) the project outcomes modification over time, (b) the "champion"/responsible committee present, (2) factors within the organizational setting: (c) the project "fits" with the faculty mission and procedures, (d) perceived benefits to staff members and/or clients, and (3) factors in the broader community: (e) stakeholders in other organizations provide support. Important **categories of indicators of the project sustainability** include: (1) maintenance of benefits achieved through project, (2) level of institutionalization of the project within the faculty and (3) measures

 of capacity building in the recipient, i.e. staff members and their assistants, and the students.

The long-term perspective for project results/outcomes includes financial sustainability, and. sustainability at the policy level.

Financial sustainability of the project activities through: (1) allocation of an examination fee will be obtained, (2) renting the project equipment for similar agencies (nursing and health sciences), and (3) conduction of paid workshops.

Institutional sustainability through (1) maintenance of the project equipment (OSCE stations, manikins, electronic system machine, computers, printers, photocopy machine, lab top, and data show projector) and continue to use for long-time; (2) regular revision and renewal of the evaluation code of practice; (3) regular revision and renewal of the developed students' assessment methods and procedures of both clinical and theoretical components of the program of study; (4) maintenance of the project infrastructure, i.e. Question Bank and the printing center in place equipped with the necessary equipments; and (5) keeping the project materials and documents in a well conducted recording and reporting system.

Sustainability at the policy level: include quality control and monitoring, peer and experts reviewing, recording and reporting system of activities, and inter- Program of Continuous Improvement and Qualification for Accreditation project coaching (auditing, monitoring, and reviewing). The overall project management implemented based on management structure and decision making process. Management of the project used a scientific management approach for management of committees, resources, activities, and evaluation

timeline, for planning, organizing, leading and controlling the project teems, and activities. Critical thinking technique was used for decision making to guide the project decisions, actions and beliefs through a rigorously and skillfully use of information, experience, observation and reasoning. For effective structure management of this project, role and responsibility of each member of the project management team was identified. Job classification, job descriptions, understanding of interpersonal skills, providing motivation, e.g. Financial rewards based on doing good job, special compensation for overtime and extensive travel, and performance appraisal. Conflict resolution by establishing priorities, good planning, and consideration of specialties of individuals, and use of continuous formal and informal communication between team members

Project summary:

Development of students' Assessment to conform academic standards at Faculty of Nursing Tanta University constitutes a critical need for a systematic, measurable, attainable/ applicable, valid/reliable, and tangible / time bounded assessment. It is important to avoid exam subjectivity, improve communication, graduate competent nurses, and satisfy the

community needs. The project objectives were to: review and renew of the faculty evaluation bylaw; disseminate examinations rules, adopt standardized theoretical and clinical competency-based summative and formative tools, adopt an electronic system for students' evaluation; and establish a Question Bank. The project implementation helps to overcome the problems encountered by the previous examinations system, and helps to meet one of the requirements of the National Accreditation Committee in Egypt, and meet the academic standards. The project included: formation of various committees, construction of various objective assessments, preparation of the infrastructure (OSCE stations, the unit of electronic system for students' evaluation, and the question bank), training of staff members, their assistants and students, and examination entry for the question bank. The new objective assessments met the psychometric and logistic assessment criteria in assessing many fundamental components of theoretical information and clinical skills, as well as the transferable skills not covered in other evaluations. The impact of realization of the present project benefit students, staff members and their assistants, patients, health care sectors, and the community. Graduates of the Faculty

of Nursing will provide practical solutions, innovate, create, deal with the technological advances, and conduct outstanding scientific research to protect the community against health hazards at national, regional and international level. Graduates provide competent nursing care, effective culturally sensitive communication; use information technology and evidence based nursing, and demonstrate professionalism, ethical principles, awareness of and responsiveness to the health care system.

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