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# Designing and Validating an Evaluation Tool for Nurse Educators Regarding Core Competencies

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**Abstract**---Using standardized evaluation tool for core competencies of nurse educator is essential to prepare faculty member. This study was aimed to design and validate an evaluation tool for nurse educators core competencies based on literature review. Also, Assessing the validity of the proposed tool by panel of experts and assessing the reliability of the proposed tool. Methodological design was used to carry out this study on two group "Jury group" was recruited for testing the face and content validity of the preliminary tool, this group consists of (35) members selected from different fields in nursing and "nurse educators" group working at two selected technical institutes of nursing Which affiliated to Ain-Shams Specialized Hospital and Ain-Shams University Hospitals. Data collection tool included Opinionnaire sheet for validity of the proposed tool, questionnaire sheet for eliciting the importance of preliminary tool from the viewpoint of nurse educator and developed evaluation tool. The results revealed that a majority agreement of jury group regarding face and content validity. Also a majority agreement of nurse educator regarding importance of proposed tool items of. Construct validity is measured by exploratory factor analysis (EFA) and Eigen value. It proved to be high reliability through intra-rater and inter-rater testing.

**Keywords**---core competencies, evaluation, nurse educator, nursing institute.

## **Introduction**

In the face of a rapidly changing social environment and increasing demand for health care services, there is a global concern that academic nurse educators should have expert-level competencies and should improve the level of nursing education [1,2,3]. The competency of academic nurse educators is defined as an underlying characteristic of an individual that is causally related to criterion referenced effective and/or superior performance in a job or situation such as serving as an academic nurse educator at a university [4].

Nurse Educators core competencies describe as the scope of educator practice; it also serves as an evidence-based framework for curricular design in programs that prepare nurse educators [5]. Nurse educators should have the requisite knowledge and skills as identified by the National League Nursing (NLN) Core Competencies to fulfill their role. These competencies define the nurse educator role and specialized preparation and are considered a gold standard [6]. The evolution and application of the NLN Core Competencies are important to validating and standardizing the nurse educator role [5]. Moreover, the purpose of nurse educator's competence validation is to ensure that the nurse educators has the right knowledge, skills, and behaviors to do the work that is required to fulfill the mission of the organization and the nursing plan of care [7].

## **Significance of the study**

Without the nurse educator core competencies as a guiding and standardizing curricular framework, graduates are at risk for being unprepared to fulfill the nurse educator role to the fullest extent possible or become certified as a nurse educator [5,8]. Nurse educators rely on evaluation in order to justify the quality of their teaching and to identify areas which need improvement. Furthermore, still not much research interest has been addressed to either for developing tool for nurse educators' core competencies[9]. For this reason, this study conducted to develop an evaluation tool for nurse educators regarding their core competencies.

## **Aim of the study**

The aim of this study is to designing an evaluation tool for the nurse educators core competencies based on literature review. Assessing the validity of the proposed tool by panel of experts and Assessing the reliability of the proposed tool.

## **Subjects and Methods**

A methodological design was utilized to develop and validate an evaluation tool for nurse educators regarding core competencies. The study was conducted at two selected Technical Institutes of Nursing; Nursing Technical Institute that affiliated to Ain-Shams Specialized Hospital and Nursing Technical Institute affiliated to Ain-Shams University Hospitals. Two groups will be included in this study, "jury group" this group consists of (35) members selected from different fields in nursing, sub divided into two main groups namely expert and managers who are responsible for evaluating nursing educators.

The other group “Nurse educators group” included all Nurse Educators working at aforementioned nursing technical institutes at the time of data collection were included. Their total number is (37) nurse educator. Data was collected using the following tools.

- Opinionnaire sheet aimed at assess the validity of the proposed tool identifying by jury group opinions regarding the preliminary evaluation tool for core competencies of nurse educators.
- A Questionnaire Sheet aimed at eliciting the importance of preliminary tool dimensions and its sub-items from the view point of nurse educators. It is developed based on the opinion of jury group.
- Developed Evaluation Tool: based on the opinion of jury group and nurse educator’s evaluation tool was developed. It aimed at evaluating core competencies of nurse educator’s.

### **The study operational design**

Included three stages as the following:

- **Preparatory stage** in this stage, the researcher undertook a thorough review of current and past available pertinent literature to gain in depth theoretical knowledge related to nurse educator core competencies at technical institutes of nursing.
- **Field work**, was achieved through the following Consecutive phases
  - Phase I: Face and Content Validity of preliminary evaluation tool: This phase was started by distributing the developed preliminary evaluation tool to the group of expert for face and content validity. The data collected from the jury group were analyzed and the recommended modification done.
  - Phase II: Modification of preliminary evaluation tool: Modification and redesigning of the preliminary tool was done based on jury group opinions,
  - Pilot study: aimed at examining the understandability and clarity of language and feasibility of the questionnaire and identify the obstacles & problems that may encountered while data collection and determine the applicability of the tool. It also helped to estimate the time needed for filling the questionnaire. The results of the pilot study were not included in the main study data. The educator spent approximately 60 to 90 minutes for filling fill preliminary tool
  - Phase III: Distribution of questionnaire sheets: were distributed to the study sample for identifying the importance of the preliminary tool items from their point of view. The study sample spent approximately 20 to 30 minutes to fill out the questionnaire. The researcher checked each questionnaire to check any missing information.
  - Phase IV: Construct Validation of preliminary evaluation tool by using statistical analysis and statistical evidence of factor analysis test and Eigen values

- Phase V (*Reliability*): Application of the developed tool used to measure reliability preliminary evaluation tool done through two techniques; Intra-Rater Technique and Inter-Rater Technique:

### **Ethical considerations**

Prior to the actual work of research study; ethical approval was obtained from the scientific research ethical committee of nursing college at Ain Shams University. Official permissions to conduct the study were secured from pertinent authorities. In addition, an oral consent was obtained from each participant. They were assured that confidentiality will be kept and the information obtained will be used in scientific research only and the study subject have the right to withdraw from the study any time would be guaranteed.

### **Statistical design**

The data collected were coded and entered into the statistical package for social science (SPSS) version 16 for analysis. Data were presented using descriptive statistics in the form of frequencies, percentages and mean. Content Validity index was also used to test items validity, total variance explained (which examine the appropriateness of items for factor analysis) and scree plot (which estimate the number of factors that can be generated from the factor analysis) were used for factor analysis. Additionally, Varimax rotation was used to load the accepted items in different categories. Cronbach's alpha was used to determine internal consistency reliability. Additionally, Pearson's correlation coefficient was used for determine the relationship between two autonomous scales. Also, ANOVA test was used to test correlation between nurse educators core competency level and their personal and job characteristics.

### **Results**

**Table 1:** reveals that the content validity of the items of the tool was very high (overall validity was 99.2%). Most of the items had a 100% agreement from the jury members and the lowest validity was 97.1% for 21 items only while all the other items had a 100% agreement from the jury members. All the items of the dimension Facilitate Learner Development and socialization and the dimension Function Within the Educational Environment had a 100% agreement from the jury members while the dimension with the lowest agreement was Function as change agent and as a leader although its validity is still high (97.1).

**Table 2:** illustrates that the nurse educators' scores of agreement upon core competencies varied widely. The highest present score of agreement was upon the Facilitating learning (89.2%) with standard deviation (0.56). Otherwise the present score of Function as Change agent and leader agreement was (85.6%) with standard deviation (0.69%).

**Table 3:** shows that there are 7 factors which determine the agreement of nurse educators, where those factors explain 80% of the variance in agreement and the first factor alone explains 47% of variance which is more than half and this reflects the importance of this factor.

**Table 4:** denoted internal consistency of the validated preliminary evaluation tool for nurse educators' core competencies by Cronbach's alpha coefficient. The alpha can take 0.5 or more related to the new tool. All items had high alpha ranged from 0.96 to 0.92. This table also indicated that the total reliability of the tool was high 0.98.

**Table 5:** shows that the overall intra rater reliability of the used tool was very high (97%) and all the dimensions of the tool had a very high reliability with the lowest one (0.95) for the dimension Facilitate Learner Development and socialization. There were three dimensions with reliability (0.99). This table also indicated that the total reliability of the tool was high 0.97.

**Table 6:** shows that the overall inter rater reliability of the used tool was very high (97%) and all the dimensions of the tool had a very high reliability with the lowest one (0.95) for the dimension Facilitate Learning. There were two dimensions with reliability 0.99. This table also indicated that the total reliability of the tool was high 0.97

**Table 7:** shows that there is a significant correlation ( $p=0.01$ ) between nurse's evaluation and their Marital Status where the highest evaluation was for Unmarried (mean=1.78) and the lowest for married (mean=1.10). Also there is a significant correlation ( $p=0.004$ ) between nurse's evaluation and their Technical Institute where the higher evaluation was for nurses at TI El Demerdash (mean=1.63) than TI specialized Hospital (mean=2.24). Finally, there is a significant correlation ( $p=0.03$ ) between nurse's evaluation and their Previous Programs and Training Courses where the higher evaluation was for nurses that attend training courses (mean=1.84) than participate in programs, seminars or workshops (mean=1.02).

Table 1  
Overall general opinions of jury members upon content validity regarding preliminary evaluation tool (n=35).

Items	Agree	
	No	%
Facilitating	35	100
Facilitating learner development	35	100
Using assessment strategies	35	100
Participating in curriculum design and evaluation	35	100
Function as Change agent and leader	34	97.1
Continuous quality improvement	34	97.1
Engaging in scholarship	34	97.1
Functioning effectively in organizational environment	35	100
Total	34.7	99.2

Table 2  
Total core competencies score regarding nurse educators' agreement upon importance of preliminary evaluation tool

Items	Minimum	Maximum	Mean	SD	Percent score %
Facilitating learning	1.12	2	1.784	0.56	89.2
Facilitating learner development	1.228	2	1.768	0.52	88.4
Using assessment strategies	1.1	2	1.74	0.61	87
Participating in curriculum design and evaluation	0.852	2	1.716	0.66	85.8
Function as Change agent and leader	0.708	2	1.712	0.69	85.6
Continuous quality improvement	1.068	2	1.74	0.75	87
Engaging in scholarship	1.04	2	1.744	0.65	87.2
Functioning effectively in organizational environment	1	2	1.744	0.58	87.2
<b>Total</b>	<b>1.1</b>	<b>2</b>	<b>1.72</b>	<b>0.51</b>	<b>86</b>

Table 3  
Total variance explained associated with each items of nurse educator core competencies

Items	Initial Eigen values		
	Total	% of variance explained by factor	Cumulative %
Function as change agent and as a leader	<b>33.473</b>	<b>47.146</b>	<b>47.146</b>
Teaching strategies	<b>6.677</b>	<b>9.404</b>	<b>56.550</b>
Facilitate Learning	<b>4.857</b>	<b>6.841</b>	<b>63.391</b>
Use Assessment and Evaluation Strategies	<b>4.278</b>	<b>6.025</b>	<b>69.417</b>
Participate in Curriculum Design and Related Activities	<b>3.156</b>	<b>4.445</b>	<b>73.862</b>
Facilitate Learner Development and socialization	<b>2.496</b>	<b>3.516</b>	<b>77.378</b>
Assist and support students	<b>2.056</b>	<b>2.896</b>	<b>80.274</b>

Table 4  
Internal consistency of the validated preliminary evaluation tool for nurse educators' core competencies by Cronbach's alpha coefficient

Items	Cronbach Alpha
Facilitating learning	<b>0.92</b>
Facilitating learner development	<b>0.93</b>
Using assessment strategies	<b>0.94</b>
Participating in curriculum design and evaluation	<b>0.92</b>

Function as Change agent and leader	<b>0.96</b>
Continuous quality improvement	<b>0.96</b>
Engaging in scholarship	<b>0.94</b>
Functioning effectively in organizational environment	<b>0.92</b>
<b>Total</b>	<b>0.98</b>

Table 5

Intra rater internal consistency of the validated evaluation tool for evaluating the performance of faculty assistants by Pearson correlation coefficient

<b>Dimensions</b>	<b>Pearson correlation coefficient</b>
I. Facilitate Learning	<b>0.98</b>
II. Facilitate Learner Development and socialization	<b>0.95</b>
III. Use Assessment and Evaluation Strategies	<b>0.99</b>
IV. Participate in Curriculum Design and Related Activities	<b>0.99</b>
V. Function as change agent and as a leader	<b>0.99</b>
VI. Pursue Continuous Quality Improvement in The Nurse Educator Role	<b>0.98</b>
VII. Engage in Scholarship	<b>0.97</b>
VIII. Function Within the Educational Environment	<b>0.98</b>
<b>Total</b>	<b>0.97</b>

Table 6

Inter rater internal consistency of the validated evaluation tool for evaluating the performance of faculty assistants by Pearson correlation coefficient

<b>Dimensions</b>	<b>Pearson correlation coefficient</b>
I. Facilitate Learning	<b>0.95</b>
II. Facilitate Learner Development and socialization	<b>0.99</b>
III. Use Assessment and Evaluation Strategies	<b>0.99</b>
IV. Participate in Curriculum Design and Related Activities	<b>0.98</b>
V. Function as change agent and as a leader	<b>0.98</b>
VI. Pursue Continuous Quality Improvement in The Nurse Educator Role	<b>0.98</b>
VII. Engage in Scholarship	<b>0.97</b>
VIII. Function Within the Educational Environment	<b>0.98</b>
<b>Total</b>	<b>0.97</b>

Table 7

Correlation between nurse educators core competencies level and their personal and job characteristics

<b>Demographic data</b>	<b>Evaluation</b>		<b>ANOVA test</b>	<b>p-value</b>
	<b>Mean</b>	<b>SD</b>		
<b>Age</b>				

Demographic data	Evaluation		ANOVA test	p-value
	Mean	SD		
25 < 35	1.83	0.29	2.3	0.1
35 < 45	1.12	0.13		
45 ≤ 55	1.69	0.34		
<b>Marital Status</b>				
Unmarried	1.78	0.36	3.9	0.01*
Married	1.10	0.21		
Widow	1.27	0.10		
divorced	1.20	0.10		
<b>Academic Qualification</b>				
B.Sc.	1.81	0.35	0.009	0.99
Master	1.09	0.21		
PhD	1.80	0.41		
<b>Work Place</b>				
TI specialized Hospital	1.63	0.32	9.4	0.004*
TI El Demerdash	1.11	0.25		
<b>Years of Experience in Education</b>				
1 < 15	1.83	0.28	0.61	0.54
16 < 25	1.04	0.37		
26 ≤ 35	1.80	0.24		
<b>Previous Programs and Training Courses</b>				
attend training courses	1.84	0.27	3.7	0.03*
participate in programs, seminars or workshops	1.02	0.15		
<b>Teaching department</b>				
Fundamentals of Nursing	1.87	0.09	0.81	0.61
Medical Surgical Nursing	1.80	0.37		
Obstetrics and Gynecology Nursing	1.86	0.13		
Pediatric Nursing	1.88	0.13		
Community Health Nursing	1.47	0.10		
Mental Health Nursing	1.67	0.01		

\* significant at p-value < 0.05

\* TI: technical institute

## Discussion

Core Competencies for Professional Nursing Education provides a framework for preparing individuals as members of the discipline of nursing, reflecting expectations across the trajectory of nursing education and applied experience. Assessment is a vital component in education if we were to improve the teaching and learning process. Under the era of accountability, when teaching standards have been set and educator are required to perform effectively to meet the standards, evaluating educators to identify competent and non-competent educators is a vitally important process [10].

In the current study sample, there was a wide gamut of nurse educators' age, ranging between the age of newly graduates and those approaching retirement. This was also reflected on their experience years, which had a range of about 30 years. Moreover, the present study sample included nurse educators from two

similar institutes, they being close to academia. This could have a positive influence on the nurse educators who work in an academic educational environment.

In the present study findings, the majority of the nurse educators reported having previously attended training courses in nursing education and participate in programs, seminars or workshops. This result is congruent with that of [11] study in Egypt, where all nursing teachers had attended seminars and conferences, and almost all of them had fellowships for training. As regards the influence of other nurse educators' characteristics on their core competencies, the present study result showed a significant positive correlation between nurse's evaluation and their Marital Status where the highest evaluation was for Unmarried (mean=1.78) and the lowest for married (mean=1.10). This is quite plausible since decrease responsibility with Unmarried whereas married had more responsibility the likelihood of the nurse educator to design activities is increase more than married educators due to the first one has more time than the other one However, an in disagreement with this finding, in [12] study in competency of clinical instructor as perceived by students and clinical instructors themselves, there is no significant correlation could be revealed between Marital Status and total competency of nurse educators.

Concerning the impact of Previous Programs and Training Courses, the present study demonstrates that there is a significant correlation between nurse's educator's evaluation and their Previous Programs and Training Courses where the higher evaluation was for nurse's educators that attend training courses (mean=1.84) than participate in programs, seminars or workshops (mean=1.02). This can be explained by the importance of continuous training and participation in important activities that help to improve the role of the nursing educators through constructive and good content of training and participation. Nonetheless, and in partial agreement with these present study findings, [13] found that the Australian nurse educators who had attended courses and /or workshops in education had better skills and competencies in nursing students' training. Moreover, [14] in Egypt found that implementing a clinical teaching program for preparing clinical educators was effective in improving their performance.

The findings indicate generally high agreement of jury Group upon the face validity of proposed evaluation tool, in which all jury group agreed that it look like a tool for evaluating nurse educator core competencies this result is correspond to [15] who conclude that, the evidence of face validity based on decision if the tool look like it would measure. Also in coincide with [16] who stated that Face validity refers to the degree to which a test appears to measure what it claims to measure in addition to he pointed to It is the simplest and least precise method of determining validity which relies entirely on the expertise and familiarity of the assessor concerning the subject matter.

The results of the study showed highly construct validity through using of the statistical analysis of factor analysis and Eigen value, both of which were clarified that there are 7 factors which determine the agreement of nurse educators, where those factors explain 80% of the variance in agreement and that consider highly construct proposed evaluation tool. This finding confirmed by [17,18,19] which

explain that the validates of the construct could employing through the statistical model called factor analysis. It is usually employed when the construct of interest is in many dimensions which form different domains of a general attribute. In the analysis of factorial validity, the several items put up to measure a particular dimension within a construct of interest is supposed to be highly related to one another.

Reliability refers to the consistency, stability and repeatability of results, that is, the result of a researcher is considered reliable if consistent results have been obtained in identical situations but different circumstances[16]. The study was concerned with testing internal consistency of the validate evaluation tool (71) competency statement grouped under eight dimension throughout observing study subject inside the classroom, outside classroom in lab and in other training setting by the researcher “intra-rater” using Cronbach’s alpha coefficient and throughout observing study subject inside the classroom, outside classroom in lab. In addition to The study was concerned with testing internal consistency of the validate evaluation tool throughout observing study subject by two trained researchers “inter-rater” by using Pearson’s correlation coefficient.

In general, the internal consistency of the proposed evaluation tool was high in intra-rater and inter-rater techniques. The finding of these study regarding reliability of the proposed evaluation tool indicated that all items of the tool had high value of alpha ranged from 0.92 % to 0.96% as well as the total alpha for the tool was high 0.98%. Also, Pearson’s correlation coefficient indicated that all items of the tool had high value of correlation coefficient ranged from 0.95% to 0.98% as well as the total Pearson’s correlation coefficient for the tool was high 0.97%.

These finding is emphasized with [20] who test the construct validity of the Development of the Holistic Nursing Competence Scale by using Pearson correlation coefficients between the variables The results of the correlational analysis showed that many of the variables were highly correlated (the highest correlation was 0.808). Also, the finding is in agreement with [21] who were developing a tool for students’ feedback regarding teaching, they found that the items and subsequent scale were consistent in terms of inter-rater reliability. Also the finding was supported by [22] which revealed that the reliability is a major criterion for assessing the quality and adequacy of the evaluation tool.

In conclusion, the developed evaluation tool is valid and reliable and can applied for evaluation of nurse educator working at technical institutes of nursing regarding their core competencies. The study recommends the developed evaluation tool could be reviewed, revised and periodically updated to accommodate the current advancement in nursing education. Orientations program for the nurse educators are important to clarify to them the items of the proposed evaluation tool.

Also, the study recommended periodic continuing training program for nurse educator regarding core competencies and how achieve it. Enhance nurse educators’ awareness regard competency based education and core competencies of educators and apply it to assure quality education and appropriate evaluation.

Periodic regular educational on-the-job training program are needed for nurse educators in order to foster their competencies and maintain them up-to-date. The developed evaluation tool could be used in nursing research and investigate the effect of its application on the quality of nursing education. Nurse educators must be encouraged to attend conferences and workshops to refresh their knowledge and competencies, and this should be a requirement for their promotion. Practical training program are recommended for the nurse educators to be proficient in the use of different teaching methods and strategies, and evidence-based teaching practices. Further researches should be done by replicate the study on another setting and subjects to help generalize the developed evaluation tool. The impact of the application of the developed evaluation tool on nurse educators should be studied. Additionally, the impact of the application of the developed evaluation tool on nurse student also should be studied.

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