

Quality of Problem Based Learning Scenarios at College of Nursing in Egypt and KSA: Comparative Study

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Abstract In PBL (problem based learning), the learning activity starts with a problem, which is a description of a set of phenomena or events in need of explanation in terms of an underlying process, mechanism or principle. Students analyze these problems in small groups. The task of the group of students is to explain the phenomena or events provided in the given problem. Quality of problems and the tutor performance are all important features of a problem based curriculum. The most dominant factor that affects the PBL process is the high quality of the problems presented to the students. High quality problems are crucial for successful learning in Problem Based Learning. Aim: The aim of this study was to evaluate the quality of PBL scenarios at Colleges of Nursing in Egypt and KSA. Material: descriptive analytic study design was conducted. The study sample consisted of 140 undergraduate nursing students in Port Said University in Egypt and 74 from Qassim University in Kingdom of Saudi Arabia. Questionnaire consisted of six factors derived from criteria of effective PBL problems. It covered an effective PBL scenario as a problem that: stimulates thinking, enhances analysis and reasoning (3 items), stimulates self-directed learning (3 items), leads to studying the intended contents (3 items), enhances interest in subject matter (3 items), is relevant to the future profession with realistic context (3 items) and matches the level of prior knowledge (3 items). Results: This study revealed that strong positive correlation between learners' opinions of the Overall rating Quality Problem and factors affecting quality of PBL scenarios and mean score of quality problem as perceived by studied groups reflects that all factors related to quality of PBL problems for Al Qassim nursing learners were higher than Port Said nursing learners. Also, the results reflects that Al Qassim learners have a highly agreed that the problem encourages consulting literature linked to block objectives compared to of the Port Said learners. In addition, both Port Said learners and Al Qassim the learners have a highly agreed that the problem shows clear linkage to the future profession. Conclusion and Recommendations: Based on the study findings, it recommended that regular problem revision and updating according to continuous health is care changes is a must, continuous investigating learner's opinion regarding quality of problem formulation, and considered when updating the problems. Implementation of orientation programmed for both learners and staff members about PBL approach and its effect on learner's skills and behavior in life.

Keywords: quality, PBL, problem, scenario

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1. Introduction

Problem-based learning (PBL) is a learner-centered instructional approach in which learners collaboratively solve problems and reveal their experiences. The 'PBL approach' encouraged learners to become active and independent, to take further responsibility for their own learning process in clinical practice. [38].

The primary elements of problem-based learning (PBL) are scenarios, learners and tutors [19,42]. Numerous researches indicate that besides learners' prior information and tutors' performance, the quality of scenarios has the majority significant influence on undergraduate learning [12,30,40].

In PBL, the learning activity starts with a problem, which is a description of a set of phenomena or events in need of

clarification in words of an original process, mechanism or principle. Learners analyse these scenarios in small groups. The task of the group of learners is to explain the phenomena or events provided in the given problem [26].

The educator acts as a facilitator to direct student learning through the learning cycle. In this cycle, also known as the PBL discussion group process, the learners are presented with a problem scenario. They formulate and analyze the problem by identifying the relevant information from the scenario. This information-detection step helps learners represent the problem. As learners appreciate the problem better, they create hypotheses about possible resolution. An important part of this cycle is identifying knowledge deficiencies relative to the problem. These knowledge deficiencies become what are known as the learning topics that learners research during their self directed learning (SDL). Following SDL,

learners apply their new knowledge and evaluate their hypotheses in light of what they have taught [15].

The majority dominant factor that affected the PBL process is the high quality of the problems presented to the learners. The key element that features to the principles of PBL and to the process of learning is the quality of the problem. Here a question is raised what are the criteria of a high quality problem?

[21] identified nine criterions and ordered them using a sequence of critics as experts in relation to the weighted significance in designing and evaluating the quality of a PBL problem in a medical curriculum. The criteria defined the vital parts in construction of a PBL scenario in descending order; openness, autonomy, richness, attractiveness, coverage, arousing curiosity, relevance, comprehensiveness and proper vocabulary. [2] emphasized the significance of choosing appropriate triggers that are highly authentic; they should be innovative, innovative and appealing and chosen correctly to direct to specific educational objectives. The features that are emphasized in the literature by different writers are: the problem should cover the predetermined learning objectives and should lead to learning topics that match with the educators' objectives / fit with block objectives. The scenario should provide direction and interesting cues that lead to thinking, analysis and reasoning. It should stimulate self directed learning and fit with learners' prior knowledge. The problem should show clear links with the future profession and improve concern in subject matter. [26]

Usually, there are two approaches to measuring the quality of scenarios. One approach is to evaluate whether learners are able to generate the same learning goals as intended by the curriculum. The degree of congruence between the two is considered to be reflective of problem effectiveness [7,25]. However, this process has its limitations in the sense that it addresses only one feature of effective scenarios – that is, the extent to which a problem leads to formulation of the intended learning

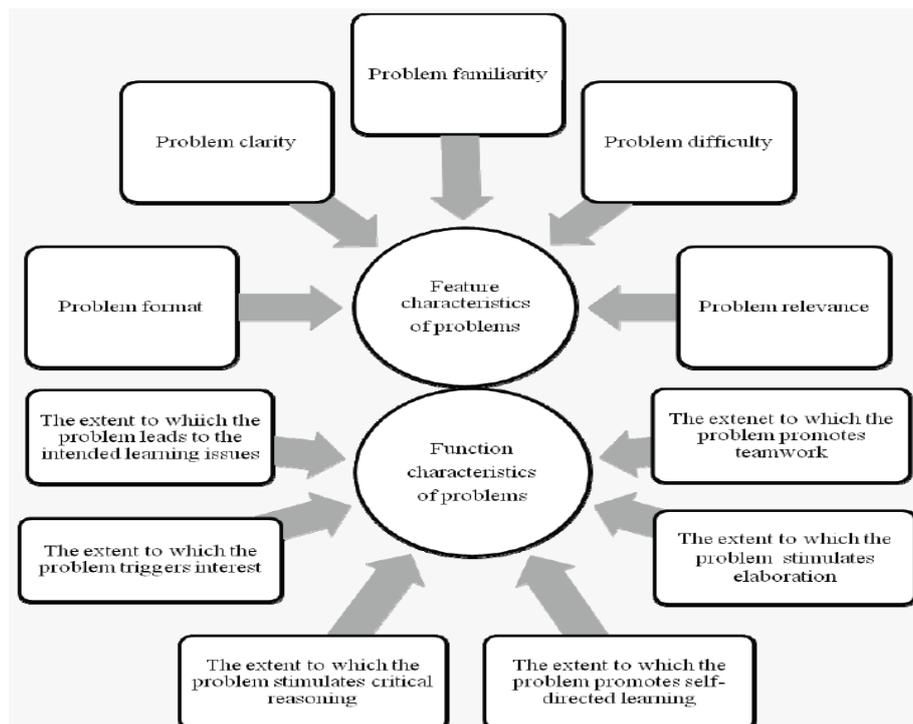
objectives. In addition, the procedure of comparing the learner-generated learning goals with the faculty-intended learning objectives may be considered as time consuming and tedious [35].

The quality of the problems or scenarios is one of the important factors in creating a functional PBL environment [2,9]. Dolmans et al. have listed a number of factors that influence the quality of the PBL problem. The problem should challenge learners' previous perceptions and ideas and give rise to questions that lead them to search for new knowledge within the scope of the learning goals set up by the faculty. Factors such as perceived realism, variation, emotions, confusion, and contradiction are also significant in a high-quality scenario [5,29].

A typical scenario starts with a short and open review of a patient's complaints and background. The scenario is designed to unfold gradually thereby withholding solutions and "answers" as long as possible in order to make the group discussion free- and open-minded. The introduction is usually followed by more detailed information about results of diagnostic examinations performed, treatment given, and the continued course of events to stimulate discussions on a more detailed level or into new directions. At the end of the session, the group defines common questions and learning goals for individual studies.

The process of creating scenarios has been centrally coordinated, but teachers and subject experts have had full responsibility for the content. One or two teachers are accountable for designing and maintaining each scenario. All scenarios are scrutinized from a medical, legal, and pedagogical point of view, and are often revised several times before publication. The scenarios can be used as starting points not only for the learners but also for the planners analyzing and renovating scenarios has turned out to be an outstanding tool for course development.

2. Conceptual Frame Work



Function and feature characteristics of problems

Theoretical form of the present study was based on the eleven PBL model which identified characteristics, the extent to which the problem stimulates critical reasoning, promotes self-directed learning, stimulates elaboration, promotes teamwork, stimulates interest, and leads to the intended learning issues are such functional properties. In a way, these functional characteristics are reflective of the five principles of constructionist learning and the objectives of PBL. This model try to find this liaison exposed to constructionist views during their PBL curriculum. So, they may support their ideas with the rules of constructionist learning (i.e., that learning occurs as a result of engaging in self-directed learning as well as collaborative effort to find resolutions to real problems, which results in gain in their content knowledge, and interest) [33].

Aim: The aim of this study was to assess the quality of PBL scenarios at Colleges of Nursing in Egypt and KSA.

Design. Comparative analytic design was utilized to conduct this study.

Settings and population. The study was conducted on all the undergraduate Nursing learners from four grades at Faculty of Nursing, Port Said University, Egypt and Faculty of Nursing, Al Qassim University, at Kingdom of Saudi Arabia in the academic year 2013-2014 at the second semester, through interviewing the learners. The questionnaire distributed to learners at the last three sessions of problem according to their academic schedule. The learners who participated in the study volunteered to fill out the questionnaires, and were given the option to keep their identities anonymous by not writing their names.

The study sample consists of 142 undergraduate nursing learners in Port Said University in Egypt and 74 undergraduate nursing learners from Al Qassim University in Kingdom of Saudi Arabia.

2.1. Target Population

The target populations were all learners from one to fourth level in both universities as mentioned above

2.2. Ethical Considerations

Ethical approval was obtained from the administrative authorities of the college of nursing, from which participants were voluntarily recruited in Al Qassim and Port Said University, in KSA and Egypt consecutively. The aim of the study was explained to the learners and participation was entirely voluntary. Learners had an opportunity to determine their willingness or refusal to participate in the study. A signed informed consent was obtained from each learner before data collection and confidentiality was ensured through the use of code numbers. Learners were apprised that all findings would be reported as group results and would be submitted for publication.

Tools of data collection. Data collected using questionnaire sheet divided to two parts. First part is demographic characteristics of study sample. Second Part is questionnaire consisted of 21 items were formulated adopted from [26].

The study was conducted in the undergraduate Nursing curriculum at KSA and Egypt. The curriculum at KSA and Egypt are five years PBL curriculum in which the each year is contains two terms. Each term consists of 9-12 problems, with one problem analyzed per week by the Maastricht seven jumps approach. The questionnaire was

administered to the first PBL in year 1, 2, 3 and 4. Each year has 1-4 tutorial groups with different tutors in each group and an average of 7-12 learners.

The learners who participated in the study volunteered to fill out the questionnaires throughout the year for each problem. The learners were given the option to keep their identities anonymous by not writing their names.

Questionnaire developed consisted of six factors derived from criteria of effective PBL problems. It covered the six main factors extracted from [26] that describe an effective PBL problem as a problem that: stimulates thinking, enhances analysis and reasoning (3 items), stimulates self directed learning (3 items), leads to studying the intended contents (3 items), enhances interest in subject matter (3 items), is relevant to the future profession with realistic context (3 items) and matches the level of prior knowledge (3items). A total of 18 items were formulated. One item was also formulated for the overall rating of the PBL problem.

All items were rated on a five-point Likert scale after the problems were discussed by both the learners. Participants were asked to indicate the degree of relevance of the item for each problem (1='strongly disagree' to 5='strongly agree'). Furthermore, four open ended questions were included. The questions gave an opportunity for the participants to describe the strengths and weaknesses they perceive of the problems. These questions also can direct towards areas for improvement. Further comments were welcome.

The instrument as used for this study was initially tested in a pilot study. Within this pilot study, the utility of the instrument and the relevance of the items were verified by expert tutors in PBL. The tool of the study translated into Arabic then re translated by English expert. And face validity was done by Delphi technique consisted of five nursing educators' from faculties of nursing, needed modifications were done according to the final version of technique, the tool reliability was (0.89.8) that indicated high reliable of the questionnaire.

2.3. Scoring System

All parts of this study tool used based on [26] through using Likert Scale ranged from 5 to 1. A total score of 60 % and more was considered adequate skills, while total score below 60% was considered inadequate.

2.4. Statistical Analysis

Data was collected and entered into a database file. Statistical analysis was performed by using the SPSS 17 computer software statistical package.

Data was described by summary tables' χ^2 square or Fisher Exact test was used. Statistical significance was considered at P-value <0.05 and highly significance at P-value <0.01. The data was analyzed at two levels. At the overall level, descriptive statistics per item were computed for learners for all the problems together. Independent groups T-test was used to test the opinions of the learners differed or not. The standard to interpret each item was 3 or less is insufficient, more than 3 to 3.5 means that improvement is needed, more than 3.5 to 4 is sufficient and more than 4 is good (scale 1-5). While the overall item is on a scale of 1-5, 1 was scored as insufficient and 5 was scored as excellent.

2.5. Pilot Study

Pilot study was carried out after the development of the tools on 10% of the learners to test applicability of the tools then necessary modifications were done according to the finding results of the pilot study and expertise opinions. Otherwise, these learners were then excluded from the sample of research work to assure the stability of answers.

2.6. Procedure

Each learner individually filled the questionnaire; the questionnaire was collected on March 2013 according to availability of learners attendance in PBL sessions in both universities, purpose of the study was explained prior to get the questionnaire sheet, and it distributed to be answered within (20 - 30 minutes) then collected.

2.7. Data Analysis Plan

Data were revised, coded, entered, analyzed and tabulated using SPSS version 16. Both descriptive statistics (frequency, percentage, mean and standard deviation) and inferential

statistics (Pearson correlation test, chi-square test, independent t test were used according to type of variables.

3. Results

Table 1 shows that number and percent for all nursing learners in both Universities according numbers in four levels with statistically significant difference. Regarding Perception of the studied groups regarding problem criteria that stimulates thinking, analysis, reasoning; self-direct learning and Matches the Level of Prior Knowledge Table 2 shows that, Al Qassim learners have a highly agreed (97.2%) that the problem scenarios are open enough to sustain discussion comparing to (76.8%) of Port Said nursing learners with statistical significant difference. Also, Al Qassim learners have a highly agreed (96%) that the problem stimulates learners towards an effective discussion compared to (92.2%) of the Port Said learners. Additionally, both group agreed (100%) that the learners are familiar with part of the knowledge necessary for discussing the problem.

Table 1. Number and percent of the nursing learners in both Al Qassim and port said universities regarding class years

Items	Alqassim		Portsaid		χ^2	P-value
	No	%	No	%		
Classyear 1	30	40.5	21	14.8	27.744*	<0.001*
Classyear 2	23	31.1	31	21.9		
Classyear 3	14	18.9	46	32.3		
Classyear 4	7	9.5	44	31		
Total	74	100	142	100		

χ^2 : value for Chi square test

*: Statistically significant at $p \leq 0.05$.

Table 2. Perception of the studied groups regarding factors that stimulates thinking, analysis, reasoning ;self-direct learning and Matches the Level of Prior Knowledge in related to quality of the problem in PBL teaching method

Items	Adequate		Inadequate		χ^2	P-value	
	No	%	No	%			
Factor: Stimulates Thinking, Analysis and Reasoning							
The problem is open enough to sustain discussion	Al Qassim	72	97.2	2	2.8	15.111	.000
	Port Said	109	76.8	33	23.2		
The problem provides optimal directions for discussion (i.e. not too many or too few)	Al Qassim	68	91.9	6	8.1	8.085	.005
	Port Said	108	76	34	24		
The problem contains appropriate stimulating cues	Al Qassim	57	77	17	23	.247	.741
	Port Said	105	74	37	26		
Factor: Stimulates Self-Directed Learning							
The problem stimulates learners to formulate their various learning issues	Al Qassim	64	86.4	10	13.6	.600	.560
	Port Said	117	82.3	25	17.7		
The problem stimulates learners to search for relevant literature	Al Qassim	62	83.8	12	16.2	1.198	.292
	Port Said	110	77.4	32	22.6		
The problem stimulates learners towards an effective discussion	Al Qassim	71	96	3	4	1.094	.390
	Port Said	131	92.2	11	7.8		
Factor: Matches the Level of Prior Knowledge							
The problem adapts to the level of the learners' prior knowledge	Al Qassim	61	82.4	13	17.6	.146	.855
	Port Said	114	80.2	28	19.8		
The problem is in alignment with the curricular material previously covered	Al Qassim	66	89.2	8	10.8	.152	.809
	Port Said	129	90.9	13	9.1		
Learners are familiar with part of the knowledge necessary for discussing the problem	Al Qassim	74	100	0	0	.a	
	Port Said	142	100	0	0		

^a No statistics are computed because Backgroundinformation3 is a constant.

Table 3 illustrates that Perception of the studied group regarding factors that Leads to Studying the Intended Contents; Enhances Interest in Subject Matter and Relevance to the Future Profession with Realistic Context.

Results reflects that Al Qassim learners have a highly agreed (96%) that the problem encourages consulting literature linked to block objectives compared to (93%) of the Port Said learners. Also, (95.8%) of the Port Said

learners and (94.6%) Al Qassim the learners have a highly agreed that the problem is phrased to learners' perception of their own environment and culture. In addition, (98.6%)

Port Said learners and (96%) of Al Qassim the learners have a highly agreed that the problem shows clear linkage to the future profession.

Table 3. Perception of the studied group regarding factors that Leads to Studying the Intended Contents ;Enhances Interest in Subject Matter and Relevance to the Future Profession with Realistic Context in related to quality of the problem in PBL teaching method

Items		Adequate		Inadequate		χ^2	P-value
		No	%	No	%		
Factor: Leads to Studying the Intended Contents							
The problem is formulated to guide to one or more of the general block objectives	Al Qassim	66	89.1	8	10.9	.569	.457
	Port Said	131	92.2	11	7.8		
The problem encourages integration of various disciplines	Al Qassim	70	94.6	4	5.4	.005	1.000
	Port Said	134	94.3	8	5.7		
The problem encourages to consult literature linked to block objectives	Al Qassim	71	96	3	4	.768	.550
	Port Said	132	93	10	7		
Factor: Enhances Interest in Subject Matter							
The problem is formulated in such a way that it enhances learners' interest in the subject matter	Al Qassim	64	86.4	10	13.6	1.037	.347
	Port Said	115	81	27	19		
The problem is phrased to learners' perception of their own environment and culture	Al Qassim	70	94.6	4	5.4	.153	.739
	Port Said	136	95.8	6	4.2		
The scenario in the problem appears appealing to learners	Al Qassim	62	83.8	12	16.2	2.031	.169
	Port Said	107	75.3	35	24.7		
Factor: Relevance to the Future Profession with Realistic Context							
The problem shows clear linkage to the future profession	Al Qassim	71	96	3	4	1.506	.341
	Port Said	140	98.6	2	1.4		
Basic science concepts are presented in a context of a clinical problem	Al Qassim	68	91.9	6	8.1	.007	1.000
	Port Said	130	91.6	12	8.4		
The problem is related to a patient not to a disease only	Al Qassim	66	89.2	8	10.8	.294	.669
	Port Said	123	86.7	19	13.7		

Regarding overall learner's opinion and tips improvement of the quality of problems' scenarios Table 4 shows that (39.2%) of Al Qassim nursing learners expressed that the problem scenarios are excellent comparing to (9.9%) Port Said nursing learners; while (37.8%) of Al Qasim nursing learners, perceived that the problem scenario is good comparing to (30.7%) of Port Said nursing learners with

statistical significance difference. Also, the table illustrated that (59.5%) of the Qassim nursing learners suggested that E-Learning in the education system of the college while (53.3%) of Port Said nursing learners compared to (14.9%) of the Qassim nursing learners haven't any tips for improvement of the problem there is statistical significance difference.

Table 4. Perception of the studied groups regarding their opinion and tips improvement related to Quality of the Problem in PBL teaching method

Items	Al Qassim		Port Said		χ^2	P-value
	No (74)	%	No (142)	%		
What is the Overall rating of the Quality of the PBL Problem?						
Not enough	0	0.0	21	15.0	42.288*	<0.001*
Acceptable	8	10.8	34	24.3		
Enough	9	12.2	30	21.4		
Good	28	37.8	43	30.7		
Excellent	29	39.2	14	9.9		
What are the tips for improvement of the problem?						
Nothing	11	14.9	81	58.3	121.247*	<0.001*
Improve this method	2	2.7	23	16.5		
Lack of understanding of the system	17	23.0	4	2.9		
Added E-Learning in the education system of the college	44	59.5	7	5.0		
Participation of the faculty member in the discussion	0	0.0	8	5.8		
Not to overburden the learners things outside study	0	0.0	1	0.7		
Taking into account the views of learners	0	0.0	3	2.2		
Problem Scenario must be one of the present our daily lives	0	0.0	10	7.2		
Videos and Audio must use in the problem Solution	0	0.0	4	2.9		

Table 5 illustrates those nursing learners' opinions regarding the strengths and weaknesses points of problem based learning. The majority of Port Said nursing learners (50.7%) comparing to (13.5%) of Al Qassim nursing learners indicates that sessions of discussing the problem facilitating team work, lead to independent thinking.

While, less than half (30%) of Port Said nursing learners comparing to (23%) of Al Qassim learners pointed the approach of PBL methods activate learner role and lead to self motivation to learning. The findings show that statistically significant difference between the two studied groups. Additionally, the table reveals that (45%) of Port

said learners did not express any weaknesses for PBL, while more than one third (39.2%) of Al Qassim learners expresses that without proper facilities the application of BPL method can lead to feeling of frustration, more than

one quarter of Al Qassin learners pointed to lack of time management and time stability of sessions. Significant statistically difference was found between the two studied groups related to weakness points of PBL application.

Table 5. Perception of the studied groups Regarding their point views about strengths, weakness in related to Quality of the problem in pbl teaching method

Items	Al Qassim		Port Said		χ^2	P-value
	No	%	No	%		
What are the strengths of the problem?						
Focus on: team work, problem-solving and independent thinking.	10	13.5	71	50.7	54.806*	<0.001*
Learners' role: active, activity-based, and self-motivated approach to learning.	17	23.0	42	30.0		
Find a variety of sources	10	13.5	8	5.7		
Hands-on experience with research processes.	6	8.1	2	1.4		
Learners learn problem before learning how to solve it, giving them the chance to explore options and possible solutions.	3	4.1	5	3.6		
Every learner respect other opinions of the group	12	16.2	8	5.7		
Model can be changed to fit instructors goals and needs.	16	21.6	3	2.1		
learning is more "enjoyable and nurturing"	0	0.0	3	2.1		
What are the weaknesses of the problem?						
Nothing	13	17.6	63	45.0	95.775*	<0.001*
PBL is unrealistic in its expectations for such materials	3	4.1	8	5.7		
learning can be frustrating for learners without proper facilitation	29	39.2	8	5.7		
There may be conflicting or confusing information at times.	5	6.8	10	7.1		
Routine session	3	4.1	11	7.9		
Lack of punctuality	21	28.4	2	1.4		
The lack of efficiency of the explanation	0	0.0	1	0.7		
Lack of attention to the problems of learners	0	0.0	4	2.9		
Rewarding system is not applied correctly	0	0.0	4	2.9		
Problems unclear	0	0.0	4	2.9		
available resources for this type of approach are limited	0	0.0	10	7.1		
incomplete	0	0.0	4	2.9		
Not in line with the lectures and it comes after a previous toll	0	0.0	3	2.1		
The consumption of a lot of time	0	0.0	10	7.1		

por comparing between the two studied groups: p value f

χ^2 : value for Chi square

MC: Monte Carlo test

*: Statistically significant at $p \leq 0.05$.

Table 6. Mean of the factors affecting Quality of the problem in PBL teaching method regarding the perception of studied groups

	Port Said (n=142)	Al Qassim (n=74)	t	p
Factor: Stimulates Thinking, Analysis and Reasoning	3.37±1.14	4.86±0.95	9.597*	<0.001*
The problem is open enough to sustain discussion	3.24 ± 1.14	3.89 ± 0.88	4.665*	<0.001*
The problem provides optimal directions for discussion (i.e. not too many or too few)	3.24 ± 1.06	3.65 ± 0.97	2.795*	0.006*
The problem contains appropriate stimulating cues	3.21 ± 1.06	3.57 ± 0.99	2.412*	0.017*
Factor: Stimulates Self-Directed Learning	3.44±0.91	3.86±0.77	3.537*	0.001*
The problem stimulates learners to formulate their various learning issues	3.37 ± 1.05	3.89 ± 0.99	3.582*	<0.001*
The problem stimulates learners to search for relevant literature	3.44 ± 1.05	3.69 ± 1.03	1.685	0.093
The problem stimulates learners towards an effective discussion	3.52 ± 1.04	4.0 ± 0.88	3.565*	<0.001*
Factor: Leads to Studying the Intended Contents	3.40±0.91	3.86±0.67	4.252*	<0.001*
The problem is formulated to guide to one or more of the general block objectives	3.39 ± 1.05	3.77 ± 0.88	2.778*	0.006*
The problem encourages integration of various disciplines	3.39 ± 1.04	3.88 ± 0.76	3.967*	<0.001*
The problem encourages to consult literature linked to block objectives	3.41 ± 1.01	3.93 ± 0.73	4.371*	<0.001*
Factor: Enhances Interest in Subject Matter	3.18±1.01	3.72±0.83	4.200*	<0.001*
The problem is formulated in such a way that it enhances learners' interest in the subject matter	3.10 ± 1.14	3.58 ± 0.98	3.079*	0.002*
The problem is phrased to learners' perception of their own environment and culture	3.36 ± 1.08	4.11 ± 0.77	5.879*	<0.001*
The scenario in the problem appears appealing to learners	3.09 ± 1.16	3.47 ± 1.0	2.436*	0.016*
Factor: Relevance to the Future Profession with Realistic Context	3.31±0.97	3.75±0.67	3.393*	<0.001*
The problem shows clear linkage to the future profession	3.32 ± 1.15	3.97 ± 0.76	4.961*	<0.001*
Basic science concepts are presented in a context of clinical problem	3.26 ± 1.08	3.64 ± 0.82	2.813*	0.005*
The problem is related to a patient not to a disease only	3.34 ± 1.19	3.65 ± 0.88	2.177*	0.031*
Factor: Matches the Level of Prior Knowledge	3.27±0.90	3.74±0.73	4.071*	<0.001*
The problem adapts to the level of the learners' prior knowledge	3.36 ± 1.03	3.66 ± 1.0	2.090*	0.038*
The problem is in alignment with the curricular material previously covered	3.16 ± 1.11	3.66 ± 0.93	3.337*	0.001*
Learners are familiar with part of the knowledge necessary for discussing the problem	3.31 ± 1.09	3.89 ± 0.65	4.910*	<0.001*
Overall scale	3.30 ± 0.80	3.77 ± 0.59	4.857*	<0.001*

t: Learner t-test

*: Statistically significant at $p \leq 0.05$.

Table 6 shows mean score of quality problem as perceived by studied groups the results reflected that all factors related to quality of PBL problems for Al Qassim nursing learners were higher than Port Said nursing learners ($4, 86\pm 0.95, 3.86\pm 0.77, 3.86\pm 0.67, 3.72\pm 0.83, 3.75\pm 0.67$ and 3.74 ± 0.73) respectively with statistically significance difference that related to factors affecting quality of PBL problems.

Table 7 demonstrates that strong positive correlation between learners' opinions of the Overall rating Quality Problem and factors affecting quality of PBL problems (Stimulates Thinking, Analysis and Reasoning, Enhances Interest in Subject Matter, and Matches the Level of Prior

Knowledge). There were highly statistically significance differences. Also, the results reveal that positive correlation between Factors (1): Stimulates Thinking, Analysis and Reasoning and Factor (2): Stimulates Self-Directed Learning There was highly statistically significance differences. Also, table shows Strong positive correlation between Factors (2): Stimulates Self-Directed Learning and Factors (Leads to Studying the Intended Contents, Enhances Interest in Subject Matter, Relevance to the Future Profession with Realistic Context and Matches the Level of Prior Knowledge). There were highly statistically significance differences.

Table 7. Correlation Coefficient between Different Factors affecting quality of the problem regarding class year and learner opinion among both groups (N: 216)

Items	1	2	3	4	5	6	7	8
Class year (1)		.122	.119	.507	.597	.860	.993	.554
learner opinion the Overall rating of the Quality Problem of PBL teaching method(2)			.555	.001	.141	.000	.369	.000
Factor: Stimulates Thinking, Analysis and Reasoning(3)				.000	.029	.051	.041	.059
Factor: Stimulates Self-Directed Learning(4)					.000	.000	.000	.000
Factor: Leads to Studying the Intended Contents(5)						.000	.000	.000
Factor: Enhances Interest in Subject Matter(6)							.000	.000
Factor: Relevance to the Future Profession with Realistic Context (7)								.000
Factor: Matches the Level of Prior Knowledge(8)								

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

The table reveals that Strong positive correlation between Factor (3) Leads to Studying the Intended Contents and Factors (Enhances Interest in Subject Matter, Relevance to the Future Profession with Realistic Context & Matches the Level of Prior Knowledge). There were highly statistically significance differences.

Also, the findings show that strong positive correlation between Factor (4) Enhances Interest in Subject Matter and Factors (Relevance to the Future Profession with Realistic Context, Matches the Level of Prior Knowledge). There were highly statistically significance differences. Finally, the findings illustrate that Strong positive correlation between Factor (5) Relevance to the Future Profession with Realistic Context and Factor (6) Matches the Level of Prior Knowledge. There were highly statistically significance differences.

4. Discussion

Problem based learning is a one of supportive learning, reduce learners dependency and enhance self learning and lead to critical thinking that depends on the resolved situation wrote in form of problem, needed analysis, clarifying and identified. The objective of the present study was to assess the quality of PBL problems at Colleges of Nursing in Egypt and KSA. The rating scale was tested with 216 learners from one to fourth level in both Port Said University in Egypt and Al Qassim University in Kingdom of Saudi Arabia. Faculty of Nursing in Port Said is the first and pioneer faculty adapted PBL method of teaching at Egypt, also the same manner, Al Qassim Faculty of Nursing at Kingdom of Saudi Arabia. In spite of similar curriculum, problem forms and the Egyptian tutors at two study settings, there are differences in nursing learners perception at two settings. The findings of the study reflected that Al Qassim and Egyptian nursing learners were satisfied

regarding the psychometric characteristics of the 18-item rating scale seemed to be adequate for measuring learners' conceptions about the six characteristics of effective problems. The six factors of the rating scale are Factor1: Stimulates Thinking, Analysis and Reasoning, Factor 2: Stimulates Self-Directed Learning, Factor 3: Leads to Studying the Intended Contents, Factor 4: Enhances Interest in Subject Matter, Factor 5: Relevance to the Future Profession with Realistic Context and Factor 6: Matches the Level of Prior Knowledge

In the study findings for the first Factor: Stimulates Thinking, Analysis and Reasoning Approximately all nursing learners at Al Qassim agreed that problem scenarios are enough to sustain discussion comparing to slightly more than three quarters of Egyptian nursing learners. Measures whether the problem instruction is clear, whether the keywords and clues that are inserted in the problem text allow learners to identify the intended learning objectives, and come up with a logical approach to address the problem. (Dolmans et al., 1993; Jacob et al.'s 2003; Marin-Compas et al., 2004) indicated that designed an 18-item rating scale to assess the three aspects of a PBL problem; (1) the extent to which the problem was correctly structured, (2) the extent to which the problem allowed learners to carry out the expected learning activities, and (3) the extent to which the allocated time and resources were suitable for the learners to work on the problem.

[39] wrote that the most important aspect of PBL design is "centering learning around an ill-structured problem. Disorganized, ill-structured problems capture the learners' attention and focus their investigation and thinking." Also, [10] added that the problem in the scenario should be complex enough that all members of the learner group will have to cooperate to work toward a satisfactory conclusion.

[4] indicated that generating the proper scenario is the most critical aspect of problem-based learning. The

scenario is the circumstance or context where a problem (not always explicit) is situated. The scenario must invite genuine inquiry. It drives learners to determine what they think they know about the described event, what they will need to know in order to identify problems, and how they'll investigate the problem. The design and implementation of appropriate scenarios are central to effective problem-based learning. We have developed a set of formal guidelines—a rubric—to be used to rate PBL scenarios and to guide instructional designers. These seven elements are essential to effective problem-based learning scenarios:

1. Problem(s) structure
2. Authenticity
3. Curricular relevance
4. Learner relevance
5. Ways and means
6. Thinking requirement
7. Potential solutions

The second factor Stimulates Self-Directed Learning. Saudi learners recorded high percentage more than Egyptian nursing learners. Given that there is communication between the learners and the tutors and within the groups of learners during the learning process on the content as well as the learning process. [14], it is likely that the learners' perceptions of the quality problem Mean are molded by the learners' learning to experience with the problem. As, in PBL, the tutor would from time to time check on the learners' progress and would feedback on the learners' learning such as relevance of learning objectives, critical reasoning and collaboration as a team. The tutor would also summarize the learning objectives at the end of the lesson, which would allow learners to compare their work with the faculty-intended learning objectives.

Perception of Al Qassim nursing learners was slightly higher than Egyptian learners regarding problem forms in the Factor: Leads to Studying the Intended Contents. Findings are in the same line with [32] pointed out that the implementation of PBL varied across educational institutions, depending on process oriented, focusing on problem-solving skills such as clinical reasoning, and learning skills that help learners learn how to learn.

The findings of the study reflected that Al Qassim and Egyptian nursing learners were satisfied regarding Factor: Matches the Level of Prior Knowledge this result in the same line with [41] referred that the understanding of content knowledge is a primary goal in problem-based learning. Learners enhance cognitive skills as they apply their content knowledge in a meaningful way instead of storing amount of concepts in a memory. Good scenarios include problematic situations that are an organizing center for curriculum. They then encourage learner learning in relevant and connected ways [39]. The problems within the scenario are the vehicles by which learners can obtain knowledge from a variety of disciplines. Learners dealing with the problems should promote the acquisition of appropriate skills and content knowledge [6]. The familiarity with the problem is the result of past experiences, subject-domain knowledge, and general knowledge. Inclusion of this factor in the rating scale seems reasonable considering the large body of research that suggests that prior knowledge strongly influences learning [1,4,8,20,27,31,35,37].

Totally, Al Qassim learners recorded, mean score higher than Port said learners of PBL problem quality, statistically significant differences were observed among two studied groups for all problem criteria, these findings is consistent with [33] mentioned that, total characteristics were found to be associated with good problems in learners' perceptions.

Regarding strengths of PBL, study results revealed that Qassim nursing learners referred to bright points of PBL in facilitating team work lead to independent thinking, helping them to found a variety of resources to study. While, Port Said nursing learners stressed on PBL activate learner role and lead to self motivation to learning. These findings in consistency with [24], pointed to PBL is based on the idea of small group collaborative learning with learners being actively responsible for their own learning process and for the meaningful construction of knowledge, increases motivation and the probability of learning by deep understanding in contrast to passive knowledge transfer, Also [13] found that Knowing how to work as a team or Learning among peers, Cooperative work, Communicative skills and Interpersonal relations, Maintain updated knowledge and skills to treat new situations are a strengths points expressed by studied learners related to PBL. Hung [15] who found that PBL is more effective than traditional methods in alleviating learners' problem of knowledge as well as enhancing learners' problem solving and self-directed learning skills.

Also, Gaber & Mohamed [11] added that the most PBL learners' were reported that they were motivated with learning by PBL method. This may be contributed to PBL gave them a way to feel the pieces together like a puzzle and after each day in the hospital, they would go back to the books and try to iron out things that they did not understand. This agreed with Botti [4] who considered PBL as an instrumental in increasing learners' motivation to seek information.

Dolman's seven principles of problem design suggests that problems should simulate real life, lead to elaboration, encourage integration of knowledge, encourage self directed learning, fit in with learners' prior knowledge, increase interest in the learners, be of an adequate level of difficulty and structured and reflect the faculty's intended learning objectives. [34]

Also, the findings revealed that (45%) of Port said learners did not express any weaknesses for PBL, while more than one third (39.2%) of Al Qassim learners expresses that without proper facilities the application of BPL method can lead to feeling of frustration, more than one quarter of Al Qassim learners pointed to lack of time management and time stability of sessions. Weakness of PBL were summarized as : without proper facilities the application of PBL method can lead to feeling of frustration, lack of time management and time stability of sessions, secessions became as routine work. This result was consistent with the findings of (Kim, et al., 2006) portrayed weaknesses of PBL as being a burden due to preparing individual tasks, Too much time-consuming work compared to the final outcomes, Lack of direction of the facilitator and need to summarize the key study concepts at the end of the modules with a short lecture. Lack of time to do group work because of different duty schedule and different learning outputs depend on the abilities of group members learners report disadvantages

of PBL such as the preparation of learning materials and educational resources takes a lot of time, it need more time for learning, more place, conflict may arise between learners which result of unable to work as a team and more effort. In some cases, when learners are first introduced to PBL, they may be felt unhappy with their role and that of the teacher role. Such results may be attributed to that PBL led to an overload of work, and because of the personal difference among the nursing learners they did not put equal effort into the assignments, and group work takes up too much of their time. PBL required learners to spend more time conducting research, searching for information, developing handouts, and commenting on handouts prepared by their peers.

Yuan et al. [42] mentioned that it is understandable that the transition from a traditional learning method to PBL caused feelings of insecurity and anxiety, confusion, a lack of a sense of purpose, and concern about reduced efficiency in learning. However, Azer [3] mentioned in PBL tutorials, learners may face a number of challenges, including poor interaction, spending more time on peripheral issues, lack of focus, difficulties in progressing to the case discussion, superficial learning, poor time management, poor contribution, or dominance of some members in the group discussion. Other challenges that may occur in PBL tutorials include; learners not addressing the issues raised in the PBL case in enough depth; learners not clearly defining their learning issues and failing to target the key concepts raised in the case. It clearly that in spite of the few disadvantages mentioned about BPL, yet it sits towards the learner focused, learning oriented end of the conceptions of teaching scale and away from the teacher-centered, content oriented end. Problem-based learning provides a practical clinical teaching methodology to facilitate the application of theory to practice and guide learners in the acquisition of critical reasoning and practical skills. So, the current planning accreditation document stresses the need to educate nursing learners to become problem solver. Therefore, Nursing Board continues to encourage the adoption of PBL in the nursing curriculum [11].

5. Conclusion and Recommendations

According to the results of the present study, it was concluded that PBL as a method and philosophy is a widely adopted and effective approach to fostering deeper approach to learning, Stimulates Thinking, Analysis and Reasoning, Stimulates Self-Directed Learning, Leads to Studying the Intended Contents, Enhances Interest in Subject Matter, Relevance to the Future Profession with Realistic Context, and Matches with the Level of Prior Knowledge as nursing learners in the two region perceived. These skills are needed for managing the growing complexity of the professional nursing role. Despite the common strength points of application PBL approach in learning to highlight on team work, problem-solving and independent thinking, self motivation for learning, learning is more enjoyable and nurturing while the weakness point centered in no references standards existed as University books and Lack of time management and time stability of sessions among the learner's nurses in both Al-Qassim and Port said University. Thus, Based on

the study findings, it is recommended that regular problem revision and updating e according to continuous health is care changes is a must, continuous investigating learner's opinion regarding quality of problem formulation, and considered when updating the problems. Implementation of orientation programmed for both learners and staff members about PBL approach and its effect on learner's skills and behavior in life.

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