

Effect of Applying Experiential Learning Styles Theory on Nursing Students' Critical Thinking Disposition and their Attitude toward Nursing Profession

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Abstract

Background: Active, cooperative learning especially using of experiential learning theory is a method to enhance critical thinking disposition necessary for the transfer and use of classroom-acquired knowledge in the clinical setting and also effect on attitude of nursing students regarding nursing profession. **Aim of study:** Was to assess effect of applying experiential learning styles theory on nursing students 'critical thinking disposition and their attitude toward nursing profession. **Design:** experimental design was utilized to conduct this study. **Setting:** The present study was conducted at Technical Health Institute of Embaba that affiliated to ministry of health. **Subjects:** All nursing students who were enrolled in the second academic year of Technical Health Institute of Embaba (200 students), they were classified into two group (control group and experimental group). **Tools for data collection:** Three tools were used. **I:** Kolb's Experiential Learning Styles Inventory. **II:** California Critical Thinking Disposition Inventory. **III:** Attitude Scale toward Nursing Profession. **Result:** Pre implementation of experiential learning theory the highest percentage (55%) of total experimental nursing students had high preference to total Kolb's' learning styles, approximately (33%) of nursing students had high critical thinking disposition and approximately (57%) of nursing students had positive attitude toward nursing profession. Meanwhile, after application of experiential learning theory the high preference to total Kolb's' learning styles improved among experimental nursing students to (77%), the high critical thinking disposition improved and increased to (84%) and the positive attitude toward nursing profession improved and increased to (80%). **Conclusion:** There was improvement in the level of critical thinking disposition and attitude of nursing students toward the nursing profession among experimental nursing students after the application of experiential learning theory (Kolb's learning style). **Recommendation:** Training program for nurse educators to be equipped with experiential learning strategies to enhance critical thinking disposition and the concept of critical thinking disposition should be included in the educational curriculum in technical institutes.

Keywords: Critical thinking disposition, Experiential learning theory & Nursing attitude toward nursing professional.

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Introduction:

Nursing education is an economic wealth in developed and developing societies, especially nursing education. Nursing education is mainly concerned with individuals, spirit and mind. It is also based on foundations, information, knowledge and special skills that include a set of educational principles derived from the general basic sciences and all of this is mostly done through the educational system. The integrated components, and components of the teacher, the learner, the curriculum, the educational environment, and the fruitful interaction between these main components with the teacher as the mentor and leader, teaching and learning (Alaka, 2019).

Critical thinking is one of the key elements in the discipline of nursing as well as nursing education so nursing students need to develop own critical thinking skills as a way to prepare for greater expertise to solve any faced problems, critical thinking helps students to develop skills in patient assessment and better preparation students for clinical practice and without critical thinking skills, health professional students will not be able to engage effectively in collaborative teams, and as health care providers without using inter professional practices can lead to poor patient outcomes and lower quality of care (Heidari, 2016).

Professional values are a major determinant for attitudes and decisions of nurses. A professional nursing practice is possible only when nurses are aware of their professional values and act accordingly Well-established professional values will certainly help nurses to make better decisions, develop a positive professional identity, avoid moral

distress, and represent nursing care well. Thus; schooling has a vital role in developing professional values in students. The professional values of nursing students have been widely investigated. Developing professional values starts with the formal nursing education and continues with professional practice, therefore, should be one of the major missions of nursing schools (Clarke, 2017).

The importance of nursing education, training and professional development begins its role from the beginning of university education, which emphasizes the importance of educating the nursing student in the right way, taking care of him, his tendencies and interests. Nursing education is the way to maintain the application of the nursing work and the link between the theoretical and practical aspects and contribute to solving many problems of nursing competencies (Lai, 2016).

Significance of the Study

Nursing education is a process encompassing theoretical and practical teaching and learning. It requires the acquisition of theoretical knowledge and practice, in addition to observation and interpretation (Honey & Mumford, 2017). The basic principle in theoretical and practical nursing education is to

prepare students to be more effective and to be more critical thinker to make appropriate decision making in all situation and to have a positive attitude toward nursing profession.

In Egypt, from the researcher's observation as clinical instructor in technical health institute the learning process in Technical Health Institutes is passive and

depended only on the teacher, so the student always being in a passive role rather than active role and also depend on conservation rather than understanding in all of time.

The present study will use new learning styles as an experiment in nursing administration course to test effect on critical thinking disposition and attitude of nursing students toward nursing profession.

These new styles of learning to nursing students could affect the way of critical thinking and attitude of nursing students regarding nursing profession.

Aim of the Study

The study was aimed to assess effect of applying Experiential learning styles theory on nursing students 'critical thinking disposition and their attitude toward nursing profession.

Research hypothesis

There would be an improvement in the nursing students' critical thinking disposition and attitude toward nursing profession after applying Experiential theory learning styles in administration course in Technical Health Institute of Embaba.

Subject and Methods

Research Design:

Experimental design was utilized to conduct the study where (pretest, posttest, Experimental group \control group) were used

Setting:

The present study was conducted at Technical Health Institute of Embaba that affiliated to Ministry of Health (MOH). Nursing is one branch of 12 branches in the institute. The students enrolled in nursing

branch were graduated either from general secondary school or from nursing school. The number of studying years at the institute was 2 years, and after graduation the students grant associated technical nursing diploma. The traditional method of teaching was applied in the teaching at this institute.

Subjects:

The study subjects in the present study included all the available nursing students enrolled at 2nd year during the time of the study at the academic year (2019-2020). The total number of nursing students in 2nd year was 200 students. The nursing students were classified by the head of department in the institution into two groups (Experimental group 100 nurse students and control group 100 nurse students). Experiential learning style (new learning styles) for administration course was applied for experimental group , while traditional methods of learning styles (lecture) was applied for control group.

Tools of data collection:

Three different types of data collection tools were used to carry out this study namely: Kolbs' Experiential Learning Styles Inventory (KELSI) questionnaire, California Critical Thinking Disposition Inventory (CCTDI) questionnaire, and Attitude Scale toward Nursing Profession (ASNP).

1- Kolbs' Experiential Learning Styles Inventory (KELSI):

An adopted self-administered questionnaire sheet, this tool aimed at determining the preferred learning style of nursing student. It developed by (Kolb and Kolb, 2005) and modified by researcher, this tool was used two times throughout the

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application of experiential learning theory. It consisted of two parts:

The first Part: This part was intended to collect data regarding the study subjects characteristics: such as: age, gender, marital status, qualification and place of residence.

The second Part: This part included (48) items categorized on four main learning styles; Concrete Experience {12 items}, Reflective Observation {12 items}, Abstract Conceptualization {12 items} and Active Experimentation {12 items}.

Scoring system:

Subjects responses were scored on (3) point Likert scale, ranging from (3) highly preference, (2) moderate preference, (1) lower preference. The total scores were summed up and the total divided by number of the items. The calculation of the mean and standard deviation was done, and then converted into percent score.

Student's preference learning style considered lower preference if the percent score was $> 60\%$ (1-86 scores) . Student's preference learning style considered moderately preference if the percent score was $60\% < 75\%$ (87-107 scores) . Student's preference learning style considered highly preference if the percent score $< 75\%$ (108-144 scores)

2- California Critical Thinking Disposition Inventory (CCTDI) questionnaire:

This tool was structured questionnaire adopted from (Facione and Facione, 2006) and translated by researcher. It used to assess nursing student's critical thinking dispositions, and it consisted of 77 items grouped under seven dimensions ; Truth seeking 12 items ,

Analyticity 1 items , Systematicity 12 items , Self- confidence 9 items, Inquisitiveness 1 items, Open mindedness 12 items and Cognitive maturity 10 items

Scoring system:

Subjects responses were scored on 5-point Likert scale ranging from (5) strongly agree, (4) agree, (3) uncertain, (2) disagree, (1) strongly disagree. The items (5, 13, 47, 56, 66 and 70) were reversed scoring as follow: (1) strongly agree, (2) agree, (3) uncertain, (4) disagree, (5) strongly disagree. The total scores were summed up and the total divided by number of the items. The calculation of the mean and standard deviation was done, and then converted into percent score.

Student's level of critical thinking disposition considered low, if the percent score was $> 60\%$ (77-230 scores) . Student's level of critical thinking disposition considered moderate if the percent score was $60\% < 75\%$ (231-288 scores). Student's level of critical thinking disposition considered high if the percent score $< 75\%$ (289-385 scores)

3. Attitude Scale toward Nursing Profession (ASNP) :

The attitude scale adopted by (Coban, and Kasikci, 2010), and translated to Arabic language by the researcher r. The attitude scale used to assess nursing student's attitude toward nursing profession, it consisted of (40) items classified under 3 main factors. **Factor I:** Identifying proprieties of nursing profession 19 items, **Factor II:** preference of the nursing profession 13 items and **Factor III:** general position of nursing profession 8 items.

Scoring system:

Subjects responses were scored on a 5 point Likert scale as follow: (5) strongly agree, (4) agree, (3) undecided, (2) disagree, (1) strongly disagree. The total scores were summed up and the total divided by number of the items. The calculation of the mean and standard deviation was done, and then converted into percent score.

Levels of nursing student's attitude toward profession considered positive if the percent score was >80% (160-200 scores). Levels of nursing student's attitude toward profession considered negative if the percent score was < 80% . (40-159 scores).

Tools validity and reliability:

After the construction of data collection tools, two types of validity tests were used in this stage, face validity and content validity. Face validity aimed at determining the extent to which the three tools represent all facets. Content validity was conducted to determine whether the three tools cover the appropriate and necessary contents. The validity of the tools was judged by nine jury (1Professors from faculty of nursing cairo university, 2 Assistant Professor from Benha university , 1 Assistant Professor from faculty of nursing Tanta university, 1 Professors from faculty of nursing Mansoura university, 1 Professors from) Faculty of Education Ain shams university, 1 Professor from College of Graduate Studies of Education Cairo university and 2 Professor from Faculty of Educational Psychology Elazhar university

The reliability score for the study tools: The Cronbach's Alpha test was done for study tools. The calculated reliability was ($r= 0.829$, $r=0.809$ & $r= 0.828$) for Kolbs' Experiential

Learning Styles inventory (KELSI), California Critical Thinking Disposition Inventory (CCTDI) & Attitude Scale toward Nursing Profession (ASNP).

Ethical Considerations:

The research approval was obtained from a scientific research ethics committee of the faculty of the nursing Benha University. The aim, purpose, benefits of the study, and the impact of this study on the students were explained to director of institute and head of teaching affairs to collect data, to get their agreement. Also, the approval was gotten from research ethical committee (REC) that affiliated to Ministry of health, training and research sector, and central directorate for research and health development In addition, the researcher got an oral consent from nursing students, also nursing students assured maintaining anonymity and confidentiality of the subject data, and were informed that they were allowed to choose to participate or not in the study and that they had the right to withdraw from the study at any time.

Pilot Study:

A pilot study was performed on 10% of the study sample (10 nursing students from each group). this nursing students were included in the main study subject Because of there is no modification in the study tools . It was aimed to examine the clarity of language, practicability and applicability of the study tools, detect the obstacles and problem that may be encountered during data collection, and to estimate the time needed to fill in the forms. The time consumed for fulfilling the study tools was approximately ranged from 35 - 50 minutes.

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Field Work:

The field work of this study was carried out through preparatory, planning (action plan), implementation and evaluation.

I. Preparatory phase:

Before data collection, an official approval to conduct the study was obtained from the dean of the Faculty of Nursing, Benha University and delivered to the director of institute in order to obtain their approval for conducting the study after explaining its purpose. The director of institute and Head of teaching affairs were contacted, and agreed on the selected teaching methods in the nursing administration course.

Moreover, an oral official agreement from the director of research ethical committee (REC) that affiliated to Ministry of health, training and research sector, central directorate for research and health development to apply this research on nursing students in the Technical Health Institute of Embaba in November 2019 until the committee met and took the written official agreement in February 2020 . The preparation, construction and approval of the data collection tools consumed around seven months from April (2019) to October (2019).

II. Planning phase.

The researcher started the preparation of the action plan for applying experiential learning style on administration course after reviewing the related literature. The action plan was validated by jury consisted of two experts (1) assistant professor of Nursing Administration, Cairo university and (1) professor from College of graduate studies for

education, department of educational psychology, Cairo university.

III. Implementation phase.

The course was implemented to the nursing students. Experimental group (Applying experiential learning styles theory on nursing administration course) were divided to 10 groups each group contains 10 nursing students. Eight teaching sessions were conducted (15) hours distributed as the follows: (1st) session was one hour was allocated 1st session (Introduction session) and (2) hours for each session, the session were achieved by using available resources.

At the beginning of the first session, an orientation to nursing students about how to apply the experiential learning theory style on administration course and how the lecture of administration and its aim took place. Feedback was given at the beginning of each session about the previous one and at the end of each session about the current session.

Different methods of teaching were used such as interactive teaching, creative thinking, group work activities, group discussion, and brainstorming. In addition, different instructional media were included as handout (Administration book which was standardized at all technical health institutes nationwide (Adam, 2019). Also, teaching aids and different methods of evaluation were selected to suit the learner's needs, and achieve the objectives and contents of administration course.

During applying of experiential learning style on administration course, using different methods to every style such as: Concrete experience which was a new experience or

situation encountered, or a reinterpretation of existing experience, also reflective observation: which was a new experience of particular importance of any inconsistencies between experience and understanding, abstract conceptualization: which was a reflection gave rise to a new idea, or a modification of an existing abstract concept (the person has learned from their experience), and active experimentation whereas the learner applied their idea (s) to the world around them to see what happens.

Applying experiential learning theory on administration lasted along 4 months from February, 2020 till May, 2020. Nursing students took about 5 lectures during the period from February, 2020 to middle of March, 2020. Then nursing students took the other 3 lectures through zoom program from March, 2020 to May, 2020, this was due to spread of Covid 19 virus (Corona disease) until the study stopped. Furthermore, control group started to receive administration course by traditional methods.

IV. Evaluation phase:

The researcher evaluated the impact of applying the experiential learning theory on administration course immediately after applying the experiential learning theory on administration course by using the same data collection tools as in the pre planning phase, through making group on What's App application and sent the tool for nursing students and gave the student suitable time to answered tools and then they forward the tools back to the researcher.

Statistical analysis:

Data entry was done by using SPSS V17 computer software package. Data were presented using descriptive statistics in the form

of frequencies and percentages for qualitative variables, and means \pm standard deviations for quantitative variables. Qualitative variables were compared using a chi - square test. T-test was used for comparisons between two independent quantitative variables. The paired t - test was used to compare between two means in the same studied group pre and post applying experiential learning theory.

Results

Table (1): Shows that slightly less than three quarters (74%) of the experimental group and slightly less than two third (63%) of the control group had age less than 20 years. Moreover, majority (85%) of the experimental group was female, while slightly more than half (53%) of the control group was male. Also, majority (90%), (94 %) of both experimental and control group was single. In addition, more than three quarter (80%) of the experimental group had nursing diploma qualification, meanwhile slightly less than two thirds (62%) of the control group had high school certificate. Finally, slightly less than two thirds (63%), (61%) of both experimental and control group was live at city.

Figure (1): Shows that, slightly more than half (55%) of experimental nursing students group had high preference in total preference learning style to experiential learning cycle pre implementation of experiential learning theory, compared to (48%) of control nursing students group respectively. Furthermore, the high preference learning styles according to experiential learning style increased markedly (77%) after implementation of experiential learning theory, compared to (50%) of control nursing students group respectively.

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Table (2): Shows that, pre implementation of experiential learning theory the high preference level of active experimentation was the highest one (58%, 57%) among both experiment and control group respectively, with no statistically significant differences between both group. As observed at post implementation of experiential learning theory, the high preference level of all learning styles in experimental group was markedly increased. Moreover, there was highly statistical significant improvement in all preference learning style for experimental group.

Figure (2): Illustrates that there were highly significant improvement in nursing student's critical thinking disposition, The figure showed that, slightly less than one third (33%) of experimental nursing students group had high total critical thinking disposition before implementation of experiential learning theory, compared to (35%) of control nursing students group respectively. Furthermore, the majority of students had increased critical thinking disposition (84%) after implementation of experiential learning theory, compared to slightly increased (36%) of control nursing students group respectively.

Table (3): Shows comparison between experimental and control groups regarding levels of Critical Thinking Disposition pre and post implementation of experiential learning theory, the table shows that, pre implementation of experiential learning theory the inquisitiveness disposition level was the highest one (38%, 39%) among both experiment and control group respectively, with no statistically significant differences between both groups . As observed at post implementation of

experiential learning theory, the high level of all critical thinking dispositions was markedly increased. Moreover, there was a highly statistical significant improvement in all critical thinking dispositions between both groups.

Figure (3): Illustrates that, slightly more than half (57%) of experimental nursing students group had positive total attitude level toward nursing profession pre implementation of experiential learning theory, compared to (61%) of control nursing students group respectively. The majority of nursing students (80%) of positive attitude increased markedly post implementation of experiential learning theory for experimental group , compared to slightly increased (62%) of control nursing students group respectively.

Table (4): Illustrates that, factor I (Identifying proprieties of nursing profession) had the highest positive attitudes (62%) among experimental nursing students group. Moreover, there was a highly statistical improvement in nursing student's attitudes toward nursing profession post implementation of the experiential learning theory.

Table (5): Reveals that, there were a positive statistical significant correlation between experiential learning style and critical thinking disposition among experimental group studied nursing students throughout implementation of experiential learning theory. Also there was a positive statistical significant correlation between experiential learning theory and nursing profession attitude among experimental group at pre implementation and post implementation of experiential learning theory

Table (1): Frequency distribution of nursing students personal characteristics (n=200).

Category	Experimental group		Control group		X ²	P-value
	No	%	No	%		
Age						
<20	74	74.0	63	63.0	2.804	0.094
≥20	26	26.0	37	37.0		
Gender						
Male	15	15.0	53	53.0	32.17	0.000**
Female	85	85.0	47	47.0		
Marital status						
Married	10	10.0	6	6.0	1.087	0.297
Single	90	90.0	94	94.0		
Qualification						
High school certificate	20	20.0	62	62.0	36.46	0.000**
Diploma in nursing	80	80.0	38	38.0		
Place of residence						
City	63	63.0	61	61.0	0.085	0.771
Country side	37	37.0	39	39.0		

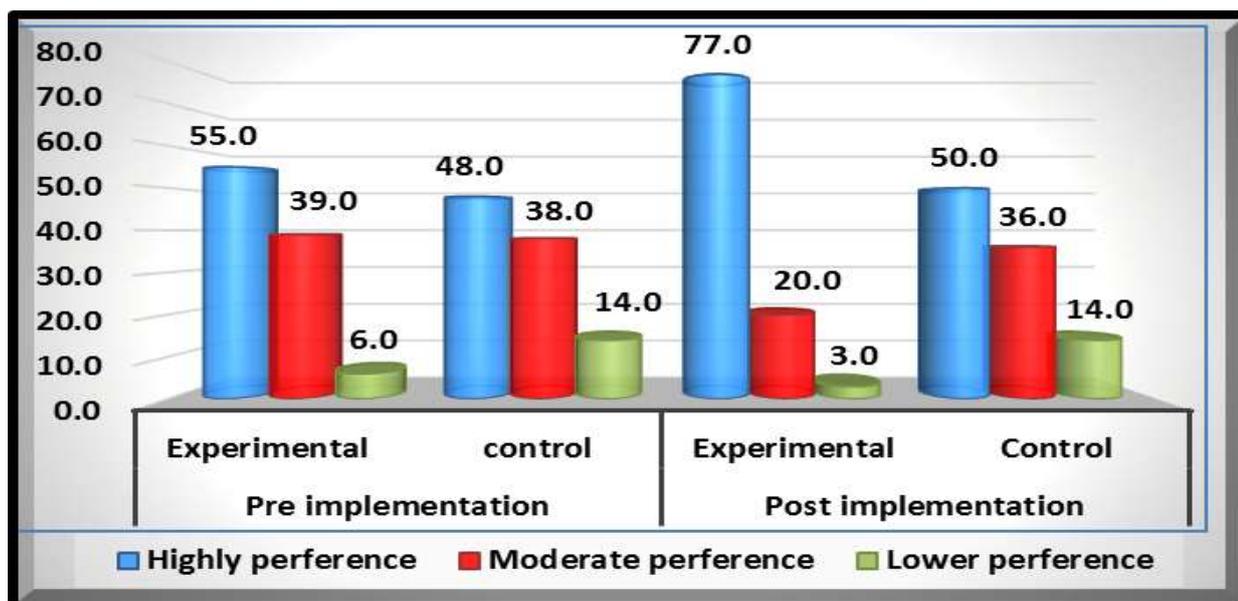


Figure (1): Percentage distribution of studied nursing students preference Learning Styles to experiential learning cycle

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Table (2): Comparison between experimental group and control group regarding preference learning style pre and post implementation of experiential learning theory (N=200)

Learning style	Pre implementation						X2 (1)	P value	Post implementation						X2 (2)	P value
	Experimental group (n=100)			Control group (n=100)					Experimental group (n=100)			control group (n=100)				
	Highly preference	Moderate preference	Lower preference	Highly preference	Moderate preference	Lower preference			Highly preference	Moderate preference	Lower preference	Highly preference	Moderate preference	Lower preference		
	>75%	60 :75%	<60%	>75%	60 - 75%	<60%			>75%	60 - 75%	<60%	>75%	60:75%	<60%		
%	%	%	%	%	%	%	%	%	%	%	%					
Concrete Experience	56	35	9	56	32	12	0.56	.755	65	27	8	57	32	11	1.42	<0.001**
Reflective Observation.	54	39	7	53	37	10	0.59	.744	62	33	5	53	39	8	1.89	<0.001**
Abstract Conceptualization	53	39	8	50	38	12	1.48	.476	68	27	5	50	39	11	7.17	<0.001**
Active Experimentation.	58	38	4	57	37	6	0.42	.810	76	22	2	57	35	8	9.27	<0.001**

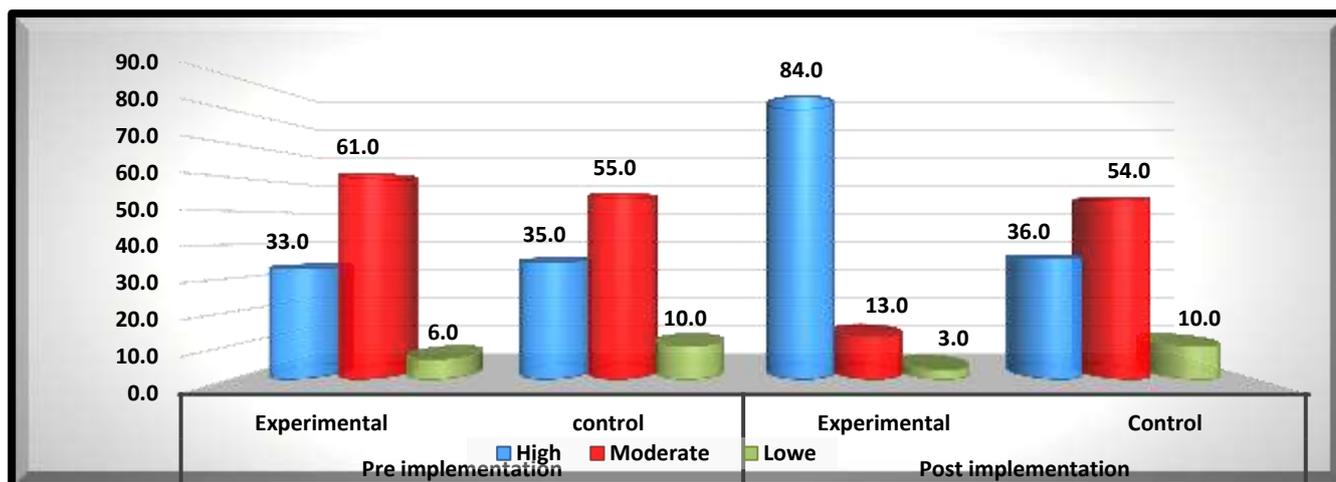


Figure (2): Percentage distribution of nursing students (experimental and control) group regarding Critical Thinking Disposition pre and post implementation of experiential learning theory

Table (3): Comparison between control and experimental groups of nursing students regarding levels of Critical Thinking Disposition pre and post implementation of experiential learning theory (N=200).

CTD Category	Pre implementation						X ² ₍₁₎	P value	Post implementation						X ² ₍₂₎	P value
	Experimental group (n=100)			Control group (n=100)					Experimental group (n=100)			Control group (n=100)				
	High	Mode rate	Lo w	Hi gh	Mode rate	Lo w			Hi gh	Mode rate	Lo w	Hi gh	Mode rate	Lo w		
	>7 5%	60- 75%	<6 0%	>7 5%	60- 75%	<6 0%			>7 5%	60- 75%	<6 0%	>7 5%	60- 75%	<6 0%		
Truth seeking	26	72	2	30	66	4	1.21	.545	74	23	3	30	66	4	39.53	<0.01**
Analytic ity	25	70	5	30	64	6	0.81	.666	78	12	10	31	64	5	57.51	<0.01**
Systema ticity	28	66	6	26	69	5	0.23	.891	80	17	3	28	62	10	54.43	<0.01**
Self Confide nce	30	64	6	36	58	6	0.84	.657	80	18	2	36	59	5	39.80	<0.01**
Inquisiti veness	38	52	10	39	47	14	0.93	.627	79	18	3	40	46	14	32.14	<0.01**
Open Mindedness	27	68	5	30	63	7	0.68	.711	84	10	6	31	66	3	66.68	<0.01**
Cognitive Maturity	20	70	10	29	61	10	2.27	.321	86	12	2	29	61	10	66.47	<0.01**

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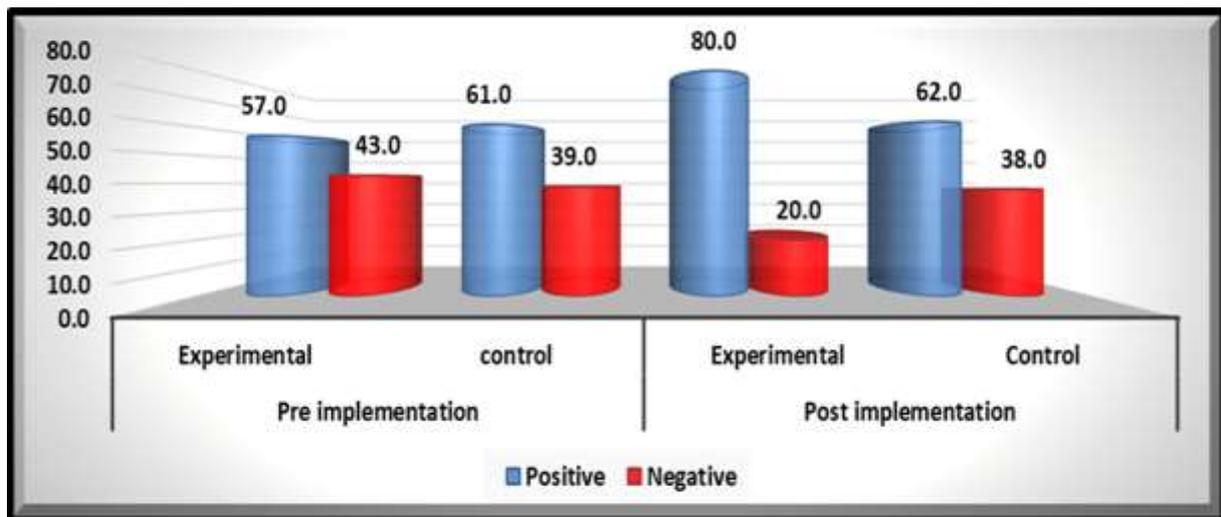


Figure (3): Percentage distribution of nursing students (experimental and control)group Attitude toward Nursing Profession pre and post implementation of experiential learning theory

Table (4): Comparison between nursing students attitude (experimental and control group) toward nursing profession through pre and post implantation of experiential learning theory (N=200).

Category	Pre implementation				χ ²	P value	Post implementation				χ ²	P value
	Experimental group(n=100)		Control group(n=100)				Experimental group (n=100)		Control group(n=100)			
	Positive	Negative	Positive	Negative			positive	Negative	positive	Negative		
	>80%	<80%	>80%	<80%			>80%	<80%	>80%	<80%		
	%	%	%	%			%	%	%	%		
Factor I: Identifying proprieties of nursing profession.	62	38	56	44	.744	.388	80	20	58	42	1.314	.001
Factor II: Preference of the nursing profession.	32	68	34	66	.090	.764	64	36	35	65	6.822	.000
Factor III: General position of nursing profession:-	60	40	61	39	.021	.885	81	19	62	38	.858	.003

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Table (5): Correlation among experiential learning styles , Critical Thinking Disposition and Nursing Profession attitude pre and post program among studied nursing students (experimental group and control group) (n=200).

	experiential learning style							
	Pre implementation				Post implementation			
	Experimental group n=100		Control group n=100		Experimental group n=100		Control group n=100	
	P-value	R	p-value	R	p-value	R	P-value	
Critical Thinking Disposition	.36	0.000**	0.17	0.08	0.18	0.007*	0.27	0.028
Attitude toward Nursing Profession	.06	0.49	0.19	0.53	0.21	0.03*	0.14	0.14

Discussion:

Regarding the experimental and control group personal characteristics, there was no statistically significant difference in all personal characteristics between the two group (experimental group and control group). It may be due to the selection of the total group before entering nursing schools.

This finding in the same line with **Gilliland, (2010)** study at Capella University in USA supported that there was no statistically significant difference observed in both nursing students' in experimental and control group scores on all personal data about age, sex, educational qualification and residence before study also, he reported that the homogeneity on both groups is very important to prevent any factors of them influence on the application of experiential learning theory (Kolb' learning styles).

Regarding preferred learning style among nursing student, the finding of the present study revealed that there were no statistically

significant difference between control and experimental group before application of experiential learning theory

This finding in similarity with **Duman, (2010)** who revealed in their study at Mugla University in turkey confirmed that the control group and experimental group nursing students with the four modules of kolb's learning styles has no statistically significant difference in terms of pre application of experiential learning styles. Also this findings in similarity with **Chen, (2009)** his study at Hung Kuang University stated that there was no statistically significant difference were found to exist between experimental and control group related to styles of experiential learning styles (concrete experience, reflective observation, abstract conceptualization and active experimentation).

The present study revealed that there was improvement in the Total experiential Learning Styles, pre implementation of experiential learning theory, more than half (55%) Of total experimental nursing students had a high preference to Total experiential

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Learning Styles , it improved to be more than three quarters (77%) post implementation of the experiential learning theory. Also the present study revealed that according the pre and post implementation of experiential learning theory (Kolb's learning styles) among experimental group, there was a highly statistical significant difference between pre implementation and post implementation of the experiential learning theory (Kolb's learning styles).

This findings the same line with **Aden, (2018)** who revealed his study at Walden University, he confirmed that there is a highly significant difference in comparing the pre application to the post application within the experimental group by experiential learning theory (Kolb's learning styles), this was important and implied grouping student by Kolb's learning styles preference for reading instruction may be an effective form of differentiation for small group instruction.

This findings disagreed with **Alaka, (2019)**, who found that the majority of students prefer a single mode of information presentation and the minority preferred three modes or even preferred to receive information using all four sensory modes. On the same line, **Demirbas & Demirkan, (2017)** study at Bilkent University, Ankara in Turkey disagreed with the present study that the kolb's learning styles had not significant difference differ in both experimental and control groups' post application of kolbs' learning styles. In addition to **Meyers, (2010)** study at University of New Hampshire in England supported this study that there was no statistically significant difference relationship between nursing students in the control group and nursing students in the experimental group post application.

The present study shows that there was high statistical improvement in the experimental nursing student's critical thinking disposition, especially in the mean score of open mindedness disposition after application of the experiential learning theory than the control group. This results support the research hypothesis.

This result agree with **Aden, (2018)** mentioned that problem-based learning group demonstrated significantly higher scores than non-problem basic learning students in open-mindedness disposition,

On the other hand, the study disagreed with his finding by **Wangensteen et al., (2018)** who studied critical thinking dispositions among newly graduated nurses. It showed that more than two third of the respondents reported a positive disposition towards critical thinking.

The findings reveals that there was an improvement and highly statistical significance in the level of critical thinking disposition level for the experimental group between the pre implementation and post implementation of experiential learning theory, on the other hand, there was not an improvement and highly statistical significance for the control group between the pre implementation and post implementation of experiential learning theory.

This result agree with **Aden, (2018)** mentioned that problem-based learning group demonstrated significantly higher scores than non-problem basic learning students in open-mindedness disposition, In addition, the result agree with this findings by **Kim & Choi, (2018)**, who reported that there a high critical thinking disposition scores of the students after application of active learning.

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On the other hand, the study disagreed with his finding by **Wangensteen et al., (2018)** who studied critical thinking dispositions among newly graduated nurses. It showed that more than two third of the respondents reported a positive disposition towards critical thinking.

The present findings revealed that there were high statistical significant improvement in the nursing students' attitudes toward nursing profession after application of the experiential learning theory for experimental nursing students that support research hypothesis .

The findings of this study agreed with **Hiremath & Wale, (2017)** conducted in KSA, which found that that a large majority of the nursing participants students are have a positive attitude nursing profession. In addition Similarly, with a previous study done by **Koushali et al., (2012)** who nursing participants students are having a positive attitude nursing profession.

The present findings revealed that there were statistical significant relation between Total Experiential learning theory (Kolbs' Learning Styles), California Critical Thinking Disposition and Nursing Profession attitude. This mean when increased the using of Total Experiential learning theory (Kolbs' Learning Styles), it will improve critical thinking disposition and nursing student attitude toward nursing profession.

This findings is supported by **An & Yoo, (2008)** this study have proven that there is a relationship to learning styles and critical thinking and Also the findings is supported by This finding supported with **Gilliland, (2010)** study at Capella University in USA that there was statistically significant differences on

nursing students' using experiential learning theory(kolb's learning styles) and scores of the critical thinking disposition cognitive presence survey; this means that, experiential learning theory(kolb's learning styles) influence the students' engagement in critical thinking in the classroom course.

Conclusion:

There was improvement in the level of critical thinking disposition and attitude of nursing students toward the nursing profession among experimental nursing students after the application of experiential learning theory (Kolb's learning style) which supports the research hypothesis. Also, there was a significant positive statistical correlation Critical Thinking Disposition and Nursing student ' attitude regarding nursing profession after implementation of experiential learning style theory.

Recommendations:

Recommendations for administrator:

- 1) Training program for nurse educators to be equipped with active learning strategies to enhance critical thinking disposition.
- 2) Nursing courses should be planned in such a way that helps in applying active learning strategies in technical health institutes.
- 3) Nurse educators in technical health institutes must be knowledgeable regarding the different types of preferred learning styles among the students.
- 4) Concept of critical thinking disposition should be included in the educational curriculum in technical institutes.
- 5) Further research studies are needed to assess the effect of education environment

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of student's attitudes toward nursing profession.

6) Replication of this study in another setting.

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تأثير تطبيق النظرية التجريبية لأنماط التعلم لطلاب التمريض على استعدادهم للتفكير النقدي واتجاهاتهم نحو مهنة التمريض

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من الشائع أن أساليب التعلم لا تهتم بـ "ما" يتعلمه المتعلمون، بل بالأحرى "كيف" يفضلون التعلم، كما أنها عامل مهم في التفكير النقدي والمواقف لدى الطلاب. يتمتع الطلاب بنقاط قوة وتفضيلات مختلفة في الطرق التي يأخذون بها المعلومات ويعالجونها، أي أن لديهم أساليب تعلم مختلفة. يفضل البعض العمل مع المعلومات الملموسة (البيانات التجريبية، الحقائق) بينما يفضل البعض الآخر التجريد (المعلومات الرمزية والنظريات والنماذج الرياضية). لذلك تهدف هذه الدراسة الى تقييم أثر تطبيق نظرية أساليب التعلم التجريبية على التفكير النقدي لدى طلاب التمريض وموقفهم من مهنة التمريض في المعهد الفني الصحي بامبابه. وقد أجريت هذه الدراسة على طلاب المعهد الفني الصحي بامبابه التابع لوزارة الصحة. وتوصلت النتائج الى كان هناك تحسن كبير في طريقه التفكير النقدي لدى طلاب التمريض. أقل من نصف (33%) طلاب التمريض من العينة التجريبية لديهم نزعة عالية في التفكير النقدي. وقد تحسنت وزادت إلى أكثر من ثلاثة أرباع (84%) بعد تطبيق نظرية التعلم التجريبي. أيضا كان هناك تحسن كبير في اتجاه طلاب التمريض من مهنة التمريض. ما يقرب من نصف (57%) طلاب التمريض من العينة التجريبية لديهم سلوك إيجابي تجاه مهنة التمريض. وقد تحسنت وزادت لتصبح أكثر من ثلاثة أرباع (80%) بعد تطبيق نظرية التعلم التجريبي لطلاب التمريض التجريبي. وقد اوصت الدراسة بتنفيذ برنامج تدريبي للممرضات ليتم تجهيزهم باستراتيجيات التعلم التجريبي لتعزيز التصرف في التفكير النقدي ويجب تضمين مفهوم التفكير الناقد في المناهج التعليمية في المعاهد الفنية.