

Perception of Student Nurses towards the Use of Portfolio in a Faculty of Nursing

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Abstract: The use of portfolio for learning and assessment within nursing education has recently increased. The main purposes of developing a portfolio is to link understanding about clinical experiences and theoretical knowledge, promotion of student-centered learning and reflective learning. It is important that students developing a portfolio understand the process. Unless portfolio is perceived by students to be relevant and useful, they will not be committed to using portfolios to their full potential. This paper aimed to identify perception of student nurses towards the use of portfolio and to compare the perception of first and second year student nurses towards the use of portfolio. The sample of the study composed of 376 first and second year students studying medical surgical nursing, in a faculty of nursing. Students were asked to respond voluntarily to portfolio perception questionnaire, which was developed by researchers. The results of the present showed that students stated that portfolio encourage their independent learning, understanding and utilization of basic concepts. The results showed also some discrepancies between first and second year students in their perceptions toward portfolio. Students expressed how the portfolio process could be improved and they recommended the continued use of portfolio in subsequent study years.

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1. Introduction:

Professionals, such as architects, engineers, and graphic artists, have long used portfolios as authentic evidence of their professional accomplishments (Kear and Bear, 2007)¹. In recent years, the use of portfolios as learning and assessment tools has become more widespread across the range of health professions (Buckley et al, 2009)².

There is evidence within the literature of an increasing use of portfolios in nursing education in North America (Tracy et al, 2000, and Robertson et al, 2004)^(3,4), Australia (Emden et al, 2003)⁵ and United Kingdom (Buckley et al, 2009)², in pharmacy education (Plaza et al., 2007)⁶, and in engineering education (Saker and Hu, 2006)⁷.

McMullan et al (2003)⁸ stated that, a portfolio is a collection of evidence of both the products and process of learning that attests to achievement and personal and professional development. Portfolio-based learning is an interactive process. Each student identifies learning experiences, integrates new knowledge into practice, identifies areas for improvement or personal growth, and envisions a plan for meeting further learning needs. Thus the portfolio is a qualitative and interpretive record of

learning that is amenable to continuous assessment (Bell, 2001)⁹.

A comprehensive literature review into the use of portfolios as a tool for assessing competence in nursing has been carried out by McMullan et al (2003)⁸. They identified that portfolios are being used for a variety of theoretical and clinical reasons. These include using them to assess clinical competence; to reduce the theory practice gap; monitor student learning over a period of time; and for personal and professional development.

Morgan (1999)¹⁰ identified different types of portfolio based on the National Education Association definition that "a portfolio is a record of learning that focuses on student's work and his/her reflection on that work". These included 'assessment portfolios' documenting student learning on specific curriculum outcomes and 'skills area portfolios' demonstrating acquired skills in specific areas such as problem solving Gannon et al (2001)¹¹ point out that in preregistration nursing the portfolio of evidence must enable the student to demonstrate that they are fit to practice as registered nurses.

Items typically included in a comprehensive portfolio are reflective writings, samples of work and written evaluations. Both cognitive and affective

learning are demonstrated as the student briefly describes the experience, applies the pertinent concepts, and then offers personal thoughts on the transaction (Kear and Bear, 2007)¹.

For the portfolio process to be successful, it is vital that students own their work (Challis, 1999)¹². For this to happen, students need to invest time and effort into the portfolio process and to assume responsibility for the content and direction of their work (Harris et al, 2001)¹³. In this way, they learn to decide for themselves, which aspects to include in their portfolio. This is consistent with Knowles (1975)¹⁴ concept of adult learning and with life long and self directed learning (Brown, 2002)¹⁵.

The educational value of portfolios is accepted with regard to the promotion of student-centered learning deep learning and reflective learning (Davis et al, 2009)¹⁶. The potential of portfolios to drive student learning in an educationally desirable direction and the importance of identifying individual strengths and weaknesses with regard to limits of competence as part of professional clinical practice may be some of the reasons for the current wave of enthusiasm for portfolios in the health care professions (Challis, 2001)¹⁷.

According to Saker and Hu (2006)⁷ portfolios emphasize the process of learning and the learners' comments on their success in meeting the learning outcomes. Thus students' confidence and motivation are enhanced as they reflect upon their improvements. By enabling students to assess themselves, they begin to take responsibility for their own learning. Portfolio learning has the potential advantage of encouraging students to draw on a wide range of sources of evidence to demonstrate their competence; that is demonstrating their academic and clinical learning outcomes.

There are several studies in both higher education (Zeichmer and Wray, 2001)¹⁸ and nursing education (Dolan et al, 2004)¹⁹ that have identified that, unless portfolio is perceived by students to be relevant and useful, they will not be committed to using portfolios to their full potential.

Significance of the study:

In today's challenging health care environment, nurses must be able to clearly articulate what they do. The development of clearly defined outcomes and identification to measure nurse's competencies is critical to the nursing education. So, it is an important challenge to prepare nursing students to meet and document competencies desirable for nurses practicing in the 21st century.

The use of portfolios in nursing education could help students to promote lifelong learning and professional goal achievement (Bell, 2001)⁹.

Internationally, portfolios are used in nurse education, there has been researches into how portfolios are perceived, understood and used by student nurses (McMullan, 2008; Williams et al, 2009)^(20,21). Students should perceive portfolio to be relevant and useful to be able to use in their professional development, therefore the aims of this study is to identify and compare the perception of first and second year nursing students. In Egypt, the researchers did not find any published researches concerning portfolios in nursing education during the period of 2000-2007. This study is an attempt to start researching in this important issue.

Aim of the study:

The aims of this study were to identify and compare the perception of first and second year student nurses towards the use of portfolio.

Research questions:

1. What is the perception of student nurses toward the use of portfolio?
2. Are there any differences in the perception of first and second year student nurses towards the use of portfolios?

2. Subjects and Methods:

Study design:

A descriptive comparative research design was utilized in this study.

Setting:

This study was conducted in the Faculty of Nursing Tanta University in Egypt.

Sampling:

The eligible sample for this study was 709 first and second year student nurses. The time table when students were in classroom settings provided the researchers with a potential sample of 400 students in two classroom settings in the period of data collection. In total 376 students completed the questionnaire, which gave us a response rate of 94% and representation of 53% of the total pre-registration student population. We compared the demographic statistics with the portfolios of the 709 eligible students and found that the present research sample of students is representative across gender and age. Slightly more than half (52%) of the students (195) were in their first year and (48%) in the second year (181).

Tools:

A students portfolio perception questionnaire was specifically developed for this study constructed by the researchers dependent on the review of the literature. The questionnaire composed of three parts:

Part I: Used to gather students perception toward building of portfolio. Composed of six statements related to the students' perception of receiving clear complete portfolio guidelines, its importance, frequent teachers feedback, searching necessary information, participation by students to build portfolio and monitoring of student progress.

Part II: Included data about students perception toward portfolio as a learning activity. Composed of three statements, that portfolio helped them to improve their understanding and utilization of basic concepts as problem solving and communication skills, statement two concerned with portfolio encouraged students to be responsible for their independent learning, theory-practice link, decision making, using information technology and self-assessment. Statement three related to portfolio reflects the students' knowledge activities and skills.

Part III: Concerned with data about students' perception toward usefulness of portfolio compared with other teaching/learning methods as clinical placement, academic assignments, classroom based teaching/learning and usefulness of portfolio for personal life and professional career development.

Students were asked to rate the statements in part I, II and III using a 3-point Likert scale where 1=disagree, 2= neither and 3=agree.

In addition, students were asked to add hand written open comments toward portfolio.

Tool development:

The students portfolio perception questionnaire was tested for content and face validity by seven assistant professors and lecturers in the fields of Medical Surgical Nursing, education and psychology at the Faculty of Nursing and Faculty of Arts. All experts were affiliated to Ain Shams

University, Cairo, Egypt. Modifications were done accordingly to ascertain relevance and completeness.

Ethical consideration:

Ethical approval was given by the Dean of Nursing Faculty, Tanta University. Students were verbally informed about the purpose and procedure of the study. The voluntary nature of their participation and that anonymity and confidentiality would be maintained when the questionnaires were distributed. This was reinforced in the front page of the questionnaire. No individuals were identified in the study.

Pilot study:

The pilot study was conducted on 10% of the sample to evaluate the developed tool for clarity; applicability and then necessary modifications were carried out. The data obtained from the pilot study were not included in the actual study.

Procedure:

The questionnaires were handed to the students studying Medical Surgical Nursing during classroom session identified previously at the end of the semester. The questionnaire took nearly fifteen to twenty minutes to be completed. Students were asked to complete the questionnaire at the beginning of the session data collected during April-May 2008.

Statistical analysis:

Results were collected and tabulated. Statistical analysis was done using statistical package for social science (SPSS version 13). Chi-square test (χ^2) was used for comparison between two groups regarding qualitative data. Results were considered significant at $p \leq 0.05$.

The context of the study:

The study reported here was developed specifically to identify student's perception towards the use of portfolio within a Faculty of Nursing, Tanta University. Portfolio was introduced into the pre-registration-nursing curriculum in this faculty of nursing two years ago when the nursing curriculum was reviewed.

It was anticipated that as portfolio was introduced into the curriculum that over time students demonstrate an increasing ability to effectively link between theory and practice during the course of the study, to be self independent learner, and to achieve clinical learning outcomes. The evidence for these achievements is recorded in their practice record which is assessed at the end of each clinical placement by the registered nurse acting as their

clinical instructor during their placement. The clinical instructor is responsible for assessing the student's level of clinical competence and enabling the students to achieve their clinical learning outcomes. An academic lecturer in a Faculty of nursing also has responsibilities in terms of portfolio building and development. The academic lecturer assures that a clinical instructor has evaluated the student's achievement of clinical learning outcomes and reviews the content and structure of the student's portfolio to ensure that it reflects ongoing professional development.

The components of the portfolio include patient assessment sheet, planning and practice recording, student evaluation sheet, assignments, case study, activities and projects. Portfolio component is summative assessed by the clinical instructor and verified by the lecturer to ensure student achievement of expected learning outcomes.

Guidelines for building of portfolio:

The guidelines were discussed and handed to students at the beginning of the semester to help students build their portfolios. Two main features of the guidelines were selection of content and reflection on learning, as the following:

- Selection of contents, the following points was suggested for consideration of items to be included in portfolio.
 - Re-reading the course syllabus focusing on the learning outcomes.
 - Select the written works that demonstrate best work.
- Reflection.
 - The purpose of portfolio.
 - What are the activities performed to achieve learning outcomes?
 - What skills were developed to meet requirements of the course?
 - How the knowledge and skills acquired during the course could be applied in their personal life and professional career development?

3. Results:

Table (1) showed nursing students' perception regarding the building of portfolio. The majority of the students in group I agreed that they receive clear and complete portfolio guidelines (purpose, learning outcomes) and important to them to receive it 98%, 95%, 90, 87% respectively, while for the second year

nursing students (group II) the percentage of agreement were decreased for the same items as 81%, 70%, 71%, 35% respectively ($X^2 = 30.83$, $X^2 = 42.40^*$, $X^2 = 24.80^*$, $X^2 = 117.45^*$ at P level 0.0001) respectively.

The same table illustrated that nearly all first year students (92%) and less than half of the second year students (48%) stated that frequent teacher's feedback is important during the semester. The majority of students in group I (80.5%) and less than half of the students in group two (43%) stated that portfolio encourages them to search necessary information by themselves. Students in first and second group verbatim that they participated in the building of portfolio (85%, 57%) respectively. Also, students in first and second group stated that portfolio helped them to monitor their progress (88%, 58%) respectively ($X^2 = 88.88^*$, $X^2 = 68.16^*$, $X^2 = 38.56^*$, $X^2 = 45.99^*$ at P level 0.0001) respectively.

Table (2) regarding to the role of portfolios as a learning activity. The students in group I and II stated that portfolio helps them to improve understanding and utilization of problem solving and communication skills. 93%, 94%, 56%, 59% respectively at significance ($X^2 = 67.89^*$, $X^2 = 69.60^*$, at P level 0.0001) respectively. The same table showed that students in group I and II stated that portfolio encourages them to be responsible for independent learning, theory practice link, decision making, using information technology and self assessment. 89%, 91%, 92%, 70%, 91%, 62%, 58%, 48%, 48% and 59% respectively at significance ($X^2 = 41.50^*$, $X^2 = 55.45^*$, $X^2 = 88.51^*$, $X^2 = 22.78^*$, $X^2 = 55.50^*$ at P level 0.0001) respectively. The majority of students in group I and less than half of students in group II reported that portfolio help them in their personal life and professional career 79%, 44% respectively ($X^2 = 48.42$ at P level 0.0001).

Table (3) illustrated that the nursing students in group I agreed that building a portfolio is the most useful learning activity followed by classroom based teaching/learning, academic assignments and clinical placements representing 89%, 87%, 72% and 69% respectively ($X^2 = 39.88^*$, $X^2 = 54.20^*$, $X^2 = 18.67^*$ and $X^2 = 8.04^*$). While the students in group II agreed that the portfolio building is the most useful learning activity followed by clinical placements, classroom based teaching/learning: 62%, 55%, 53%, and 51% respectively. The same table showed that portfolios are useful for career development as stated by nursing students in group I and group II: 94%, 79% respectively ($X^2 = 19.44^*$ at p level 0.0001).

Table (4) showed the mean scores of nursing students' perceptions toward portfolio. It was apparent that students in both groups perceive portfolio as a learning activity followed by building portfolio and then its usefulness ($t=15.43$; 12.01 ; 7.89 , respectively at p level 0.0001).

Table (5) showed the students comments toward portfolio. Students in group I and II stated some negative comments as too much paperwork and time consuming, little emphasis and interfere with clinical practice, little guidance and difficult in writing and not certain what to include: 69%, 15%, 3%; 30%, 56%, 27% respectively. Some students (18%) in group I required teachers to provide weekly portfolio ungraded feedback during the semester. Some positive comments were given only by students in group I as portfolios help them to be confident to learn independently, reflects their abilities, knowledge, skills and improves students' communication and with the faculty staff: 21%, 18%, 8% respectively. The same table indicated that nearly more than half (51%) of the students in group I recommended to continue use of portfolio in subsequent years.

4. Discussion:

Portfolio-based learning is an active learning strategy that is individualized, learner centered, outcome oriented, and promotes contextual learning and valuing learning. Portfolios provide a mechanism for documenting the application of knowledge in practice (Kear and Bear, 2007)¹.

It was essential to consider the guidelines provided to build a portfolio as important, particularly if the portfolio is being assessed. It can be seen that nearly all first year students and majority of second year nursing students receive complete and clear portfolio guidelines. However, there, was some confusion among the second year students, although this was not their first experience building a portfolio. This was reinforced by responses to the open-ended questions, "little guidelines on how to make the portfolio; not certain what to include".

This is in accordance with the study done by Saker and Hu (2006)⁷ in that students stated in one of the responses to the open-ended questions, "give more on how to make the portfolio". Students need to be given clear guidelines about the purpose, content and structure of portfolio to balance the open-ended nature of its content and structure (Gannon et al, 2001; McMullan et al, 2003)^(11, 8).

In contrast the findings of the present study Dolan et al (2004)¹⁹ found that the majority of preregistration nursing students surveyed at their university rarely discussed the contents of their portfolio with their academic tutors. They speculate that this may have occurred because the portfolio was not summatively assessed.

As stated by Nairn et al (2006)²² in their study to examine the knowledge, skills and attitudes of student nurses about the value and purpose of portfolio, they concluded that nursing students believed that academic tutors did not make the purpose of a portfolio clear and more than half of students did not consider that the content of portfolio was sufficiently explained. McMullan (2006)²³ concluded that portfolios can be very effective as an assessment and learning tool, but it is essential that both students and mentors receive clear guidelines on and comprehensive support with their use.

The present study showed that feedback was considered as important factor in building and using a portfolio, it was provided by clinical instructor once, in the middle of the semester. It was suggested by students in open-ended questions that portfolio be assessed weekly to encourage students to use it more seriously and efficiently. However, weekly assessment might not be practical in many cases because it would significantly increase the workload of the instructors, especially in a large class. The frequency of the feedback on portfolio needs to be based on factors such as number of students, weight of portfolio in the overall assessment and instructor's workload.

The present study results showed that the majority of first year students and more than half of second year students agreed that portfolio building helped them better understand and apply concepts as communication and problem solving. In contrast to this result, Nairn et al (2006)²² found that students did not generally consider portfolios useful for developing their communication skills. Despite the portfolio being one way to communicate learning from academic and clinical activities.

The present study results showed that portfolio encouraged students to be responsible for their own learning, theory practice link, using information technology, self assessment and reflecting on their learning activities. In general, the students' responses support the use of a portfolio for better understanding of the concepts keeping track of learning progress through reflection. This supports the findings of Tillema and Smith (2000)²⁴, that portfolio assist reflection of the learning process by focusing students' attention on the unit outcomes.

Portfolios are commonly used in nursing education, both as a tool for reflective learning and as an innovative way of documenting student learning and evaluating clinical competence (McMullan et al, 2003)⁸.

The present study results were supported by McMullan (2008)²⁰ who conducted a study to obtain nursing students' perception on using portfolio for their clinical practice learning and assessments. Students stated that portfolios helped them in their development of self-awareness and independent learning.

On the same line, Bukley et al (2009)² concluded that, studies reported direct measurement of changes in student skills or attitudes, the main benefits of portfolio use identified as improvement in student knowledge and understanding, greater self-awareness encouragement to reflection and the ability to learn independently. While, on the contrary to the results of the present study, the same author indicated that students found portfolios do not sufficiently address the assessment of their clinical skills and the integration of theory and practice.

The present study comprehensively documented that the process of building a portfolio increases students' reflective abilities. This is in agreement with Syndre et al (1998)²⁵ and Klenowski (2002)²⁶ as they indicated that reflection is made during the portfolio process because there is a requirement that students document knowledge and clinical practice as they co-evolve. To do this students require specific teaching and support to develop the cognitive processes of critical reflection, self-learning and assessment, which will help them to develop this work of portfolio. The teacher's role as a facilitator is vital here to provide support and regular feedback. This develops the student's confidence, independence and ownership of the process (McMullan et al, 2003)⁸ and has positive effects on students' perceptions toward portfolio learning (Klenowski, 2002)²⁶.

In a study done by Davis et al (2009)¹⁶ to identify students perception to the portfolio assessment, they concluded that students perceived that portfolio construction increased their understanding of the learning outcomes and enabled reflection on their work. Student reactions to the portfolio process were initially negative, although they become familiar with their work over time.

It was possible that student perceptions towards portfolios could influence the degree with which they embrace or reject the portfolio as a method for effective learning. To see the level of positive or negative perceptions towards portfolio some items

evaluated the perceptions that students held towards portfolios as an important approach to teaching and learning compared to other methods and as being useful for career development.

The present study results indicated that portfolios were seen as more useful activity than other teaching and learning activities for both first and second year nursing students. Also the majority of first year nursing students and nearly half of second year nursing students found that classroom based teaching and learning were useful to them. Clinical placements were seen as a least useful activity by the first year nursing students, whereas, academic assignments were seen as a least useful activity by the second year nursing students.

On the contrary, Nairn et al (2006)²² reported that nursing students did not see portfolios as more useful than other teaching and learning activities. Moreover (91%) nursing students found teaching and learning within clinical placements useful compared to (81%) of students having a positive attitude towards classroom based teaching and learning.

As related to the perception of nursing students towards portfolios as being useful for career development. Nearly all first year students and the majority of second year students agreed that portfolios were useful for personal life and professional career development. It could be concluded that the perceptions about portfolios as facilitating career development are maintained throughout the first and second years. McMullan (2006)²³ stated that portfolios encourages both personal and professional career development through the process of reflective practice and critical analysis.

The students in the present study found that portfolio building interfered with clinical learning. The students' mentioned that there was too much paperwork in the portfolio process and it was time consuming. In the same line McMullan (2006)²³ the students reported that portfolios were very time consuming, causing them a great deal of anxiety, and were not very effective in developing and assessing their learning.

On the contrary, Dolan et al (2004)¹⁹ in their study to investigate the students and staff usage and perceptions of portfolio, concluded that the majority of students felt that too little time was spent on the portfolio than any other aspect of the course, although many students and staff appreciate the potential value of using the portfolio, it is not a requirement of the course and so tends not to be treated as a high priority. Davis et al (2009)¹⁶ stated

that reduction in portfolio content may be responsible for improvements in student perceptions to portfolio process.

In responses to the open-ended questions, some students stated that they need more guidance on the portfolio, have difficulties in writing and not certain what to include. These responses were reported mainly by second year nursing students. They did not give any positive response in open ended questions and they have the lower proportion of agreement on the perception statements compared to first year nursing students.

Second year nursing students who participated in this study were the first group-within the faculty of nursing where the study was undertake who have required to maintain a portfolio building to demonstrate academic progression and achievement of clinical learning outcomes and competencies. This could be due to that lecturers and clinical instructors, might be failing to fulfill the need for support and guidance on portfolio building and use which they where the students were in their first year.

Nairn et al (2006)²² reported that students in their third year were less optimistic about the use of portfolio than students in the first year.

Contrary to the present study findings Robinson (2000)²⁷ found positive attitudinal change towards portfolio assessment and the initial feeling of student uncertainty and resentment is a finding common to several portfolio assessment studies. Robinson (2000)²⁷ added that although some frustration was exhibited by several students at the beginning, this tapered off quickly as students become familiar with portfolio development process.

In a study done by Williams et al (2009)²¹ to measure lecturers and students perceptions toward portfolio, they found that third and fourth-years students were the least positive compared to lecturers, added that the value of portfolios becomes less salient to student nurse towards the end of their training course.

The study results indicated that portfolio improved communication and relationship between first year students and faculty staff. In the same line Harris et al (2001)¹³; McMullan et al (2003)²³ stated that student-faculty link is an important component in the reflective portfolio process. Challis (1999)¹² suggested that the student-faculty link could take many forms ranging from regularly scheduled formal meetings with a mentor to telephone or e-mail communication as needed. This student-faculty link could potentially reduce negativity and confusion associated with the use of portfolio, as well as

provides valuable formative assessment information to both students and faculty alike.

Findings of this study revealed that first year nursing students in their open ended responses stated that portfolio helped them to be confident and efficient in their independent learning and that portfolio could be continued through the years of the study.

Saker and Hu (2006)⁷ concluded that in engineering education students reported that creating a learning portfolio generally helped their learning since they took responsibility for their own learning.

5. Conclusion and Recommendations:

Student nurses in the present study stated that portfolio process helped their learning since they took more responsibility for their own learning. Also, portfolio helped them to understand the basic concepts, improve the students-teacher relationship and portfolios are useful for their professional career development.

There were same discrepancies between first and second year nursing students in their perceptions towards portfolio. The value of portfolio becomes less salient to second year nursing students.

Some aspects considered important by students in building a portfolio including: provision of clear guidelines, regular frequent feedback, decrease the paperwork required and increase the marks allocated for portfolio appropriate to the workload involved.

Portfolios were seen by student nurses as more useful learning activity than other teaching and learning methods. The positive feedback from students also supported the continued use of a portfolio in subsequent study years.

Based on the findings of the present study, it could be recommended that:

- Portfolio can be very effective learning method but it is essential that students receive clear guidelines on and comprehensive support with their use.
- Portfolios should be designed in such a way that they are clear, relevant, objective and not time-consuming with refined content and should be linked with learning outcomes.
- Lecturers and instructors need to look at students' perceptions and why some students' perceptions deteriorate. There could be regular discussion with students to see how and why the students begin to see portfolios less useful for

their education and continual professional development.

- Provision of portfolio template could help students to make decisions about the type, quality and content of documents to include in their portfolios.
- The small class size in this study limits the generalization of the findings. Further studies based on a larger sample size are recommended to strengthen the evidence for portfolios use, particularly studies which observe changes in students' perceptions, knowledge and abilities.

Table (1): Student nurses' perception toward building of portfolio.

| Statement | Group I (1 st year) (n=195) | | | | | | Group II (2 nd year) (n=181) | | | | | | X ² | P |
|--|---|----|---------|----|----------|---|--|----|---------|----|----------|----|----------------|---------|
| | Agree | | Neither | | Disagree | | Agree | | Neither | | Disagree | | | |
| | No | % | No | % | No | % | No | % | No | % | No | % | | |
| 1. Receive clear and complete portfolio guidelines: a. Purpose of portfolio b. Content c. Expected clinical learning outcomes | 191 | 98 | 3 | 2 | 1 | 1 | 146 | 81 | 14 | 8 | 21 | 12 | 30.83* | 0.0001* |
| | 185 | 95 | 9 | 5 | 1 | 1 | 127 | 70 | 32 | 18 | 22 | 12 | 42.40* | 0.0001* |
| | 176 | 90 | 15 | 8 | 4 | 2 | 128 | 71 | 32 | 18 | 21 | 12 | 24.80* | 0.0001* |
| 2. Important to me to receive portfolio guidelines | 170 | 87 | 24 | 12 | 1 | 1 | 63 | 35 | 66 | 37 | 52 | 29 | 117.45* | 0.0001* |
| 3. Frequent teacher's feedback is important during semester | 179 | 92 | 8 | 4 | 8 | 4 | 86 | 48 | 36 | 20 | 59 | 33 | 88.88* | 0.0001* |
| 4. Portfolio encourage me to search information myself | 157 | 81 | 33 | 17 | 5 | 3 | 78 | 43 | 52 | 29 | 51 | 28 | 68.16* | 0.0001* |
| 5. Participated actively in the building of portfolio | 166 | 85 | 20 | 10 | 9 | 5 | 103 | 57 | 41 | 23 | 37 | 20 | 38.56* | 0.0001* |
| 6. Portfolio helps me to monitor my progress | 171 | 88 | 17 | 9 | 7 | 4 | 105 | 58 | 34 | 19 | 42 | 23 | 45.99* | 0.0001* |

*Significant $p < 0.05$

Table (2): Student nurses' perception towards portfolios as a learning activity.

| Statement | Group I (1 st year) (n=195) | | | | | | Group II (2 nd year) (n=181) | | | | | | X ² | P |
|---|---|----|---------|----|----------|-----|--|----|---------|----|----------|------|----------------|---------|
| | Agree | | Neither | | Disagree | | Agree | | Neither | | Disagree | | | |
| | No | % | No | % | No | % | No | % | No | % | No | % | | |
| I. Portfolio helps me to improve understanding and utilizing of basic concepts as - Problem solving skills - Communication skills | 181 | 93 | 11 | 6 | 3 | 2 | 102 | 56 | 48 | 27 | 31 | 17 | 67.89* | 0.0001* |
| | 184 | 94 | 9 | 5 | 2 | 1.0 | 106 | 59 | 40 | 22 | 35 | 19 | 69.60* | 0.0001* |
| II. Portfolio encourages me to be responsible for..... - Independent learning - Theory-practice link - Decision making - Using information technology - Self-assessment | 174 | 89 | 17 | 8 | 4 | 2 | 112 | 62 | 39 | 22 | 30 | 17 | 41.50* | 0.0001* |
| | 177 | 91 | 13 | 7 | 5 | 3 | 104 | 58 | 49 | 27 | 28 | 16 | 55.45* | 0.0001* |
| | 179 | 92 | 10 | 5 | 6 | 3 | 86 | 48 | 63 | 35 | 32 | 18 | 88.51* | 0.0001* |
| | 137 | 70 | 31 | 16 | 27 | 14 | 87 | 48 | 65 | 36 | 29 | 16.0 | 22.78* | 0.0001* |
| | 178 | 91 | 14 | 7 | 3 | 2 | 106 | 59 | 49 | 27 | 26 | 14 | 55.50* | 0.0001* |
| III. Portfolio reflects my knowledge, activities and skills | 154 | 79 | 30 | 15 | 11 | 6 | 80 | 44 | 77 | 43 | 24 | 13 | 48.42* | 0.0001* |

*Significant $p < 0.05$ **Table (3): Usefulness of portfolio as perceived by student nurses compared with other teaching and learning methods.**

| Statements | Group I (1 st year) (n=195) | | | | | | Group II (2 nd year) (n=181) | | | | | | X ² | P |
|---------------------------------------|---|----|---------|------|----------|---|--|----|---------|----|----------|------|----------------|---------|
| | Agree | | Neither | | Disagree | | Agree | | Neither | | Disagree | | | |
| | No | % | No | % | No | % | No | % | No | % | No | % | | |
| - The following are useful to me..... | | | | | | | | | | | | | | |
| - Building portfolio | 174 | 89 | 18 | 9 | 3 | 2 | 112 | 62 | 49 | 27 | 20 | 11.0 | 39.88* | 0.0001* |
| - Clinical placements | 135 | 69 | 50 | 26 | 10 | 5 | 100 | 55 | 65 | 36 | 16 | 9 | 8.04* | 0.018* |
| - Academic | 140 | 72 | 37 | 19.0 | 18 | 9 | 93 | 51 | 69 | 38 | 19 | 11 | 18.67* | 0.0001* |

| | | | | | | | | | | | | | | |
|---|-----|----|----|---|----|-----|-----|----|----|----|----|----|--------|---------|
| assignments - Classroom based teaching/learning | 170 | 87 | 13 | 7 | 12 | 6 | 96 | 53 | 57 | 32 | 28 | 16 | 54.20* | 0.0001* |
| - Portfolios are useful for my personal life and professional career development | 183 | 94 | 10 | 5 | 2 | 1.0 | 142 | 79 | 28 | 16 | 11 | 6 | 19.44* | 0.0001* |

*Significant $p < 0.05$ **Table (4): Mean scores of student nurses' perceptions toward portfolio (building – learning activity – usefulness).**

| Variables | Group I (n=195) | Group II (n=181) | t-test | P |
|---|---------------------|---------------------|--------|---------|
| | Range Mean±SD | Range Mean±SD | | |
| Building of portfolio | 17-24 23.11±1.41 | 8-24 19.03±3.43 | 15.43* | 0.0001* |
| Portfolio as a learning activity | 22-50 28.62±2.41 | 4-30 23.57±5.37 | 12.01* | 0.0001* |
| Usefulness of portfolio | 7-24 14.04±1.53 | 6-15 12.55±2.12 | 7.89* | 0.0001* |

*Significant $p < 0.05$ **Table (5): Student nurses' comments toward portfolio.**

| Nursing students' comments toward portfolio | Group I (n=195) | | Group II (n=181) | |
|---|--------------------|----|---------------------|----|
| | No | % | No | % |
| 1. Too much paper work, time consuming | 135 | 69 | 54 | 30 |
| 2. Little emphasis, and interfere with clinical learning | 29 | 15 | 102 | 56 |
| 3. Little guidance, difficulties in writing, not certain what to include | 5 | 3 | 48 | 27 |
| 4. Provide weekly feedback during the semester | 35 | 18 | - | - |
| 5. Portfolio help me to be confident, to develop myself, able to independent-learning efficiently | 40 | 21 | - | - |
| 6. Reflects my ability, learning activities | 35 | 18 | - | - |
| 7. portfolio improve communication relationship between students and faculty staff | 14 | 8 | - | - |
| 8. Continue use of portfolio next years | 99 | 51 | - | - |

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