

# Effect of Using Case Study Teaching Strategy on Nursing Students' Perception of Teaching Effectiveness

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## Abstract

**Background:** A case-study approach in teaching promotes the level of knowledge retention by nursing students, enhances their critical thinking skills, and expands their problem-solving capabilities.

**Purpose:** This study aimed to determine the effect of using case study teaching strategy on nursing students' perception of teaching effectiveness.

**Method:** Quasi experimental/pre and post-test research design was used in this study

**Results:** Post-test mean scores were significantly higher than the pre-test mean scores of all teaching effectiveness domains named space & equipment, classmate- interaction, academic goal, teaching method, internship & practicum, and course content. Also, a positive attitude towards case-study teaching strategy reported by the participants.

**Conclusion:** The implemented case study as a teaching strategy had a significant positive effect on the students' perceptions of teaching effectiveness.

**Keywords:** Case-study, Effective teaching, Nursing students, Nursing education.

## Introduction

A case-study approach in teaching promotes the level of knowledge retention by nursing students, enhances their critical thinking skills, and expands their problem-solving capabilities. It also enables students to be better prepared in the event of examinations.

University education is a very costly and important investment, and students' satisfaction with degree programs has significant marketing implications. However, there is little literature that investigates case study teaching strategy and its predictive relationship to student satisfaction. Nursing educators should be able to maintain knowledge of trends that emerge in nursing education as well as be willing to learn and adapt to new method.<sup>1</sup>

Case study teaching strategy is a method of education that favours student-based method to teacher-based method and improves students' motivation and self-efficacy.<sup>1,2</sup> It allows for the active participation of students and is a practical approach in enhancing student learning.<sup>3</sup> Thistlethwaite et al., (2012) concluded in their study that the case-based learning (CBL) enhanced students' learning. They asserted that the students enjoyed the sessions and there was partial enjoyment of

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CBL by the teachers because students enjoyed it, and it motivated them to engage in better learning.<sup>4</sup>

Also, Habasisa (2014) mentioned that using a case study has been efficient in creating a positive learning environment for students. However, the approach faces several barriers, such as lack of teacher experience in using case studies as witnessed in South Africa and the construction of cases.<sup>5</sup> In addition, Majeed (2014) performed a research to assess the efficacy of a case-based approach where concluded that there was a significant improvement in exam performing after didactic teaching. The Higher education in Saudi Arabia recently started to acknowledge that classroom culture plays a critical role in student satisfaction, retention, and learning.<sup>6</sup>

**Significance of the study:** Using case teaching in University and colleges have many good practices as boosts positive interaction between students and faculty, encourages active learning, advances mutuality and cooperation among students. It also gives prompt feedback on students' performance, and encourages students to have great self - confidence and increases the level of self-expectations, emphasizes time on task, and respects variety of talents and ways of learning.

**Purpose of the study:** The aim of this study is to determine the effect of using case study teaching strategy on nursing students' perception of teaching effectiveness.

**Hypothesis of the study:** Post-test scores of students about their perception of effective teaching after using case study teaching strategy are higher than their pre-test scores.

## Method

**Design:** Quasi-experimental/pre and post-test research design was employed in the present study

**Sample:** Convenient sample from third year nursing students (90 out of 122 who fill up the questionnaire) who taking the course, health care ethics during the first semester of academic year 2018-2019, in the traditional baccalaureate nursing program.

**Setting:** Nursing Department, College of Applied Medical Science (CAMS), KFU. Saudi Arabia

**Data Collection Tool:** Perceptions of Teaching Effectiveness questionnaire (PTE) developed by Quay

and Quaglia (2004), Tsai & Chou (2007) and modified by Hsieh (2011) was used for collection of the study data using 5-point Likert scales ranging from strongly disagree (1) to strongly agree (5).<sup>7-8,1</sup> The questionnaire consisted of three parts as follow: Part I: Personal data such as age, gender, previous academic achievement, and place of residence, Part II: PTE scale categorized to six domains as; course content, space & equipment, teaching method, internship & practicum, classmate-interaction, and academic goal, and Part III: Students' Attitude towards case study teaching strategy scale developed by Bansal and Goyal (2017).

**Procedures:** Reliability of the tool was tested by using the Cronbach's Alpha test. The value was 0.95. Content validity was assessed by tow experts in the related field of nursing education and administration. Also, Validity of the tool for factor analysis was completed using Kaiser-Meyer-Olkin (KMO) Test. The value was 0.90. A pilot study was undertaken on a sample of ten percent from the study participants to check and guarantee that the study tool was clear and applicable. As well as, performed the required modifications. The subjects of the pilot were included in the main subjects of the current research. Data were collected through monkey electronic survey during first semester for academic year 2018/2019. The study conducted using three phases as:

**Planning Phase:** The researcher reviewed related literature to prepare case studies related specific topics of healthcare ethics course to use in the class discussion (ethical issues of informed consent, confidentiality, death and dying, abortion, and organ donation). Case studies that used taken from actual situations; every effort has been made to mask the identities of the participants' involved.<sup>9-12</sup>

**Implementation phase:** The class time of the course was three hours per week; it divided into two sessions, first session for the researcher (course faculty) presentation and explanation of the content and the second session for the assigned case study analysis and discussion by students. After Pre-test data collection the researcher (course faculty) starts to use case study approach in teaching the class for four consecutive weeks by presenting short cases that followed immediately with highly directed questions to get students attention and continue to discuss the topic. At the end of the class, the students provided with homework to be discussed in the next class in the form of mini case related to the topic

that was covered. In small groups (4 per each group) students must present justifications for all actions based on principles; the students should gather all information to determine whether an ethical dilemma exists, examine his or her own values, express the exist problem, consider all possible courses of action, discuss the outcomes, and appraise the action executed.

**Evaluation phase:** In week 14 of academic calendar for the post-test data collection, each participant requested to fill the post-test questionnaires including the Attitude towards case study teaching strategy. The time required to complete a given questionnaire was approximately ten to fifteen minutes.

**Ethical consideration:** All official permission obtained from concerned authority (department head, students’ affair and clinical training coordinator). In addition, all participants were voluntarily involved in this study after they informed with the study purpose and expressed their approval; the participants were able to pullout from this research at any point of this study as they wanted. In addition, confidentiality, privacy, and anonymity of the participants and their responses were assured.

**Statistical analysis:** Data analysis of the current study done by SPSS (version 23). Data produced using descriptive statistic in the structure of frequency, percentage, mean, standard deviation, and Pearson correlation. Moreover, P value of  $\leq 0.05$  used for significant measurements of the study variables.

### Results

Table 1 demonstrates socio-demographic characteristics of the study participants. It was clear from this table that of the age of 20 to 21 got the highest percentage (68.9%). Also, this table shows that 57.8%

of the participants were not married. Additionally, the majority of the participants (75%) do not have children. Concerning the previous academic achievement of the participants, it was noticed that highest percentage (46.7%) got very good score. Furthermore, it was observed that the majority (85.6%) of the participants live in urban areas.

**Table 1: Socio-demographic characteristics of the study participants. N = 90**

Socio-demographic characteristics	No	%
<b>Age</b>		
20-21	28	31.1
22-23	62	68.9
<b>Total</b>	<b>90</b>	<b>100</b>
<b>Marital Status</b>		
No	52	57.8
Yes	38	42.2
<b>Total</b>	<b>90</b>	<b>100</b>
<b>Having children</b>		
No	63	70.0
Yes	27	30.0
<b>Previous academic achievement:</b>		
Pass	2	2.2
Good	18	20.0
Very good	42	46.7
Excellent	28	31.1
<b>Total</b>	<b>90</b>	<b>100</b>
<b>Residence Place</b>		
Rural	13	14.4
Urban	77	85.6
<b>Total</b>	<b>90</b>	<b>100</b>

**Table 2: Pre and post-test mean scores of Teaching Effectiveness perception by the study participants. N=90**

Teaching Effectiveness Domains	Pretest	Post-test	t test	P-value
	Mean ± S. D	Mean ± S. D		
Course Content	6.9 ± 2.5	10.0 ± 2.4	8.919	.0001**
Space & Equipment	12.6 ± 3.6	17.2 ± 4.1	8.505	.0001**
Teaching Method	10.2 ± 3.4	16.0 ± 4.5	10.320	.0001**
Internship & Practicum	9.0 ± 2.8	12.8 ± 3.7	8.302	.0001**
Classmate- Interaction	11.6 ± 4.3	16.6 ± 5.5	7.239	.0001**
Academic Goal	11.0 ± 3.9	16.4 ± 5.4	8.096	.0001**

Table 2 represents pre and post-test mean scores of teaching effectiveness perception by the study participants. The results revealed that the post-test mean scores were recorded significantly higher ( $p=.0001$ ) than the pre-test mean scores of for all teaching effectiveness domains named space & equipment, classmate-interaction, academic goal, teaching method, internship & practicum, and course content ( $17.2\pm4.1, 16.6\pm5.5, 16.4\pm5.4, 16.0\pm4.5, 12.8\pm3.7, 10.0\pm2.4$  successively).

Table 3 display positive attitudes towards case-study teaching strategy reported by the participants. The highest percent for strongly agree were obtained with three items as” This technique provided the real time relevance”, “This technique provided an opportunity for self-learning” and “ It was a satisfying learning experience” which values are 38.9, 37.8, and 37.8 respectively.

**Table 3: percentage distribution of the study participants regarding their Attitude towards case study teaching strategy. N=90**

No	Items	Strongly Agree		Agree		Undecided		Disagree		Strongly Disagree	
		No	%	No	%	No	%	No	%	No	%
1	This technique helped me to understand the subject effectively.	20	22.2	26	28.9	20	22.2	9	10.0	10	11.1
2	This technique was an interesting experience.	23	25.6	22	24.4	13	14.4	10	11.1	9	10.0
3	This technique provided the real time relevance.	35	38.9	20	22.2	15	16.7	9	10.0	12	13.3
4	This technique encouraged my intellectual curiosity.	29	32.2	15	16.7	17	18.9	9	10.0	13	14.4
5	This technique kept me engaged during the session.	25	27.8	28	31.1	15	16.7	5	5.6	7	7.8
6	This technique provided an opportunity for self-learning.	34	37.8	26	28.9	11	12.2	15	16.7	11	12.2
7	I feel confident about the subject after this technique.	26	28.9	26	28.9	17	18.9	11	12.2	12	13.3
8	This was an effective means to learn the concepts.	23	25.6	25	27.8	20	22.2	12	13.3	15	16.7
9	It was a satisfying learning experience.	34	37.8	24	26.7	20	22.2	14	15.6	11	12.2
10	I would like to involve in more of such cases.	20	22.2	30	33.3	14	15.6	17	18.9	15	16.7
11	This involved deeper learning approach	14	15.6	33	36.7	20	22.2	11	12.2	9	10.0
12	This technique helped me in development of critical thinking.	19	21.1	30	33.3	14	15.6	17	18.9	12	13.3

Table 4 illustrates high statistically significant difference and positive relationship among all domains of teaching effectiveness. Regarding course content domain, it was noticed that moderate positive relationship with domains of teaching effectiveness named as Space & Equipment, Teaching Method, Internship & Practicum, and Classmate- Interaction ( $r= .714, .636,$

$.619,$  and  $.587$  respectively). Additionally, the same table display moderate positive relationship between Space & Equipment domain and other teaching effectiveness domains named as Teaching Method, Internship & Practicum, Classmate- Interaction, and academic goal ( $r= .603, .603, .502,$  and  $.571$  respectively).

**Table 4: Correlation matrix of Teaching Effectiveness Domains of the study participants. N =90**

Domains of Teaching Effectiveness	Course Content	Space & Equipment	Teaching Method	Internship & Practicum	Classmate-Interaction	Academic Goal
<b>Course Content</b>						
Space & Equipment	.714**					
Teaching Method	.636**	.603**				
Internship & Practicum	.619**	.603**	.705**			
Classmate- Interaction	.587**	.502**	.613**	.676**		
Academic Goal	.752**	.571**	.695**	.701**	.775**	

\* Significant at  $p \leq 0.05$ . \*\* Highly significant  $p \leq 0.001$ .

## Discussion

Case study teaching proven its effectiveness in improving students learning by many studies in the globe.<sup>13</sup>The present revealed a positive response from nursing students who noticed a remarkable improvement in their perception about effective teaching after using case-study teaching strategy. In addition, the present study found a high statistically significant difference between the pre and post-test percentage for all items of teaching effectiveness domains. This result congruent with the result by Fatima et al. (2015). They stated the that the students found case-based learning a very effective tool for expanding their learning, communication as well as improving their analytical skills.<sup>14</sup>

In addition, in this study according to Space & Equipment domain, it was observed that a high statistically significant difference between its pre and post-test mean scores (sample item includes “the equipment can facilitate my presentation”). This finding agrees with Bijani(2019) who clarified that students can become highly frustrated in case of unavailability of the equipment or be greatly motivated with the extensive equipment. However, case-based learning is uncomplicated and easy to utilize. It does not need specific materials and supplies for implementation.<sup>15</sup>

Another interesting finding was that the study participants reported a high statistically significant difference between pre and post-test mean scores of classmate interaction domain (sample item includes “I can enjoy a cooperative learning”). This finding supported by Torredà et al., (2014). Their findings revealed that case-study teaching is enjoyable because it promotes active interaction among students, creates an academic challenge.<sup>16</sup>

Moreover, the findings of the current research showed that a high statistically significant difference was existed between pre and post-test mean scores of academic goal domain (sample item includes “The course is for academic development in future” and “The course is for work prepare in future”). This finding consistent with Cheng & et al., (2016), and Akhlaghi et al., (2018). They emphasized that case- based learning enhanced the students’ belief that they can be successful in their assignments and tasks, thus bettering their academic outcomes.<sup>17-18</sup>

Concerning teaching method domain, it was observed that a high statistically significant difference was existed between its pre and post-test mean scores (sample item includes “I like the instructor’s teaching method”). This result constant with the previous studies findings (Sahimi & Said (2016), Albaradie (2018), Sayyah, (2017), andPapanagnouet.al. (2016). They asserted that to ensure that the students have a positive learning experience; it is essential to understand student’s perspectives, needs, emotions, and interests regarding their learning environment.<sup>19-22</sup>

Regarding attitudes towards the case study teaching strategy, the participants of the current study reported their positive attitudes towards the case study teaching strategy. This result corresponds with Escartín et al., (2015) who clarified that case study encourages self-learning because nursing students need to search for more information about their cases in textbooks, articles, and online databases for evidence-based research.<sup>23</sup>

In addition, the current study revealed a statistically significant difference and positive relationship between all teaching effectiveness domains. This finding is coherent with the study conducted by Alarcón, et. al.

(2019), Rehna & Abraham (2019). They concluded that the curriculum of nursing education is majorly comprised of intense theory, lab practical and clinical practice and community work as well. Therefore, various teaching method would integrate to suit the diverse aspects of the curriculum as well as nursing student needs.<sup>24-25</sup>

### Recommendations

- Use the relevant case studies that address learning objectives and content accuracy to promote learning.
- Further studies are required to provide deeper insight and provide more information on the effectiveness of the case-study teaching technique on improving learning outcomes, learners and faculty perceptions and their satisfaction level.
- Limitations: There limitation of this study includes using a specific case studies and a small size of population, which may limit to some extent the generalizability of the findings.

### Conclusion

The results of the current study suggest that the implemented case study as a teaching strategy had a significant positive effect on the students' perceptions of teaching effectiveness. Based on students' perception, it was noticed that student evaluations of teaching effectiveness were very positive. The most positive domain of teaching effectiveness perceived by the students were space & equipment and classmate interaction. The study provides evidence that the use of case study offered active learning environment during case-study discussion and promoted greater order, social skills and communication abilities in nursing students.

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