

An Exploration of the Learning Style Among Undergraduate Nursing Students From An Indian Perspective

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Abstract: Individuals' perceptual preference for learning can be identified by using learning style inventories. This provides nurse educators a basis for planning effective and efficient instructional strategies.

Objectives: The objective of this study was to determine the dominant learning styles of undergraduate nursing students and also to associate the selected demographic characteristics of undergraduate nursing students and their learning style

Method / Design: The present study employed a descriptive cross sectional study design to explore the learning style of undergraduate nursing students. Data were collected using the demographic characteristics proforma and Kolb's Learning Style Inventory version 3.1. The study was conducted at two colleges of Nursing in South India. The sample included 326 undergraduate nursing students who were selected by consecutive sampling technique.

Result: The response rate was 95.09% (n=310). Majority (50.3%) of the undergraduate nursing students investigated were of diverging learning style. There was a predominance of diverging learning style throughout the years of Bachelor of Science in Nursing Program.

Conclusion: The study suggests nurse educators to identify the learning style of the group and the remediation of teaching strategies to be planned based on the findings.

Keywords: Demographic characteristics, Kolb's Learning Style Inventory version 3.1, Learning style, Undergraduate nursing students.

I. Introduction

An important exhilarating question for nurse educators is on the individual learning differences observed in a class room scenario. These differences have set in a challenge to nurse educators. Each student has a preferred approach to learning, hence it is the fundamental necessity for educators to identify the learning preferences to make the learning focused and purposeful [1]. This unique approach to learning is learning style. Billings and Halstead stated that "learning style is the unique way in which a person perceives, interacts with, and responds to a learning situation" [2].

There are diverse kinds of learning styles based on different models. These models are based on sensation, thinking, cognition, and learning [3]. For example, Kolb's learning style focuses on how students process information, whereas Dunn and Dunn's learning style focuses on the method of acquiring information [4]. Further, the development of the learning style tools is based on certain theories. For instance, Kolb's learning style is built on the experiential learning theory. Accordingly Kolb has described that the learner learns through four different learning modes which includes abstract conceptualization, concrete experience, active experimentation, and reflective observation. In the process of learning, the learner resolves conflict between being concrete or abstract and being active or reflective. Learning style is then identified by the combination of these modes as diverging, assimilating, converging and accommodating [5].

When, students face a teaching strategy that doesn't comply with the learning preference, there exists a mismatch between learning style and teaching strategy. This mismatch enhances student's tendency to be inattentive and hence perform poorly. Therefore, there is a need to match the teaching strategy and learning style to have a positive outcome. Apparently, the variety of learning style contained in a classroom can be captured by using the learning style instruments, which will broaden the teachers' perspective of the diversity of learning preferences. Erol, Hilal, and Tetik [6] identified that majority of the medical students were assimilators and convergers in both the first and second years of their study period. Zoghi, et al. [7] identified that health science students are mainly convergers. Rassool and Rawaf [8] reported that the preferred learning style among the nursing students was reflective. This shows that learning styles varies from group to group.

The investigators identified that there were abundance of international literatures on learning style, but very few studies related to learning style in an Indian context. Further, there was no evidence of the use of the concept of learning style inventories and its interpretation that is implemented in nursing institutions in India. Therefore the current study was undertaken to explore the learning style among undergraduate nursing students from an Indian perspective.

II. Objectives

The objectives of the study were

- To determine the dominant learning styles of undergraduate nursing students
- To associate the selected demographic characteristics of undergraduate nursing students and their learning style

III. Materials And Methods

3.1. Design and sampling

A descriptive cross sectional design was used in the present study to explore the learning style of undergraduate nursing students. The target population were the undergraduate nursing students enrolled in the Bachelor of Science in nursing program. The inclusion criteria in the study was, being an undergraduate nursing students who completed more than six months in the Bachelor of Science in Nursing program and within the age group of 17-25 years. Two colleges from South Indian were selected for data collection. The sample was selected using consecutive sampling. The sample size was based on the previous study and was estimated to be 306. Data was collected from 326 undergraduate nursing students considering a five percentage possibility of incomplete responses that could be deleted from being analyzed.

3.2. Instrument

The instruments used for data collection were the demographic characteristic proforma and Kolb's Learning Style Inventory version 3.1 (KLSI 3.1). The demographic characteristic proforma was developed to assess sample characteristics. The items in the tool were related to the personal data like age, gender, information on high school education and the year of the program.

The KLSI 3.1 was used to identify the learning style of undergraduate nursing students. There were 12 simple items in the tool, with four choices each. The undergraduate nursing students were asked to think about a recent scenario of learning a new concept, following which to read the item on the inventory and were asked to rank the choices when they would go about learning a new concept. The undergraduate nursing students were asked to rank four for the choice that best described how they learnt and one for the least liked. The four responses in each item corresponded to the four learning abilities described by Kolb as Concrete Experience (CE) – learn by feeling; Reflective Observation (RO) – learn by reflection, watching; Abstract Conceptualization (AC) – learn by abstractness, thinking; Active Experimentation (AE) – learn by action, doing. The sum of each of CE, RO, AC and AE scores obtained for each participant from the 12 items were then subtracted as a combination (AC – CE and AE – RO) and the result was plotted on a four quadrant graph called the learning style type grid provided by Hay group to identify the learning styles of the learner. Once the values obtained from AC – CE and AE – RO were plotted on the grid, the resultant abscissa depicted the dominant learning style of the participants. The four learning styles described by Kolb were converging learning style consisting a combination of abstract conceptualization and active experimentation; diverging learning style comprising a combination of concrete experience and reflective observation; assimilating learning style containing a combination of reflective observation and conceptualization; and accommodating learning style having a combination of active experimentation and concrete experience.

No modification was performed to the tool. In the present study reliability of the KLSI 3.1 was established by test retest method and was observed to be 0.76 and 0.82 respectively for AC-CE and AE-RO. This finding was in conformity with the values found in literatures.

3.3. Data collection procedure

Permission to conduct the study was obtained from the Research Committee of the two colleges where the study was conducted. The students were gathered in a classroom and explained the purpose of the study. Following which, the students were given a free choice to be part of the investigation. The students who were willing to be a part of the investigation were assured of confidentiality and a written consent was obtained from them for willingness to be a part of the study. Data was collected by giving a hard copy of the “demographic characteristic proforma” and “KLSI3.1”.

IV. Results And Discussion

Initially 326 undergraduate nursing students were included in the study, but sixteen KLSI 3.1 were found to be incomplete, therefore 310 were included for analysis. The data collected was entered into the Statistical Package for Social Science version 20 (SPSS 20). The entire hypotheses were tested at $p=.05$ level of significance. The demographic characteristics of the 310 undergraduate nursing students who participated in the study were as follows:

Table 1: Demographic Characteristics of Undergraduate Nursing Students (N=310)

Demographic Characteristics		Frequency	Percentage
Age	≤ 20	188	60.6
	> 20	122	39.4
Gender	Female	299	96.5
	Male	11	3.5
High school education	Government	139	44.8
	Private	171	55.2
Year of program	I	81	26.1
	II	64	20.6
	III	71	22.9
	IV	94	30.3

TABLE 1 demonstrates that among the 310 undergraduate nursing students who participated in the study, majority (60.6%) were less than or equal to 20 years of age. Further, in the study conducted by D’Amore, et al. [9], the age of nursing students ranged between 18 – 25years. The difference identified in the present study could probably be attributed to the reason that in India, students join professional courses soon after high school education.

In the present study, majority (96.5%) of the study participants were females. Similarly, studies conducted on nursing students by researchers have identified that majority of the study participants in nursing were females [9]. These findings can be related to the reason that nursing, all over the world is considered as a “women’s occupation”, and hence is dominated by females.

The present study also identified that majority (55.2%) of students had their high school education in private institution. In India, private schools are considered superior to government schools in terms of pupil-teacher ratio, teaching activity, infrastructure and other facilities, hence there was a higher representation of students who had their high school education in private institution. Further in the present study, among the four year of Bachelor of Science in Nursing program, maximum (30.3%) representation of sample were from the IV year. The first objective of the study was to determine the learning style of undergraduate nursing students. The data obtained following the administration of KLSI 3.1 identified the distribution of the study participants among the four learning styles.

Table 2: Learning Style of Undergraduate Nursing Students (N= 310)

Learning Style	Frequency	Percent
Accommodating	87	28.1
Diverging	156	50.3
Converging	26	8.4
Assimilating	41	13.2

TABLE 2 highlights the learning styles among the study participants. Among the 310 undergraduate nursing students, it was observed that majority (50.3%) of them were of diverging learning style. The findings of the present study were consistent with the findings reported by D’Amore et al. [9], who reported that majority of nursing and midwifery students were mainly divergers and assimilators. Suliman[10] also identified that the nursing students preferred diverger learning style.

Kolb [5]has described diverging learners as being innovative, imaginative, oriented, interested in people, and empathize with people. Further Kolb has specified that diverging learners view concrete situations, analyze from various perspectives and finally arise at conclusions. From this description of the features of diverging learners, dominance of diverging learning style among the undergraduate nursing students in the present study is appropriate as the profession deals with people and an empathetic and intuitive characteristic features is necessary in nursing students to be a professionally competent nurse.

The second objective of the study was to associate the selected demographic characteristics of undergraduate nursing students and their learning style. No significant association was identified between (age,gender, high school education). There was a predominance of diverging learning style across all years of the program. Liew et al. [11], reported that there was no gender differences in learning style. However, studies have reported relation between learning style and gender of students [12, 13]. The difference in the findings related to gender can be associated to the context of cultures, as majority of the study participants were females and females probably tend to learn through feelings [13].

V. Conclusion

This study concentrated on identifying learning styles of undergraduate nursing students. It highlights the need for nursing educators to have an awareness of the different learning styles, so that they can remediate their teaching strategies to match the learning styles prevailing in the classroom to improve quality of education and in turn promote academic success. The present study highlights that the majority of undergraduate nursing

students were diverging learning style that is a combination of concrete experience and reflective observation. This shows that majority prefer to learn by feeling, watching and reflection. The educators can focus predominantly on teaching strategies that focus on these learning preferences. Despite having a predominant learning style within the group, use of variety of other teaching strategies promotes the learner to accommodate to alternate ways of learning as all students have a multimodal approach to leaning. Further research in this area would give a strong evidence as the present study had its limitations with regards to the use of consecutive sampling technique, and data were collected from only two colleges which limits generalization of the results. Another limitation was the use of self-report tool, wherein there is a possibility of false response by the participants.

Acknowledgement

The authors would like to thank the Hay group for the permission to use the KLSI 3.1.

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