

ASSESS DIFFERENT LEARNING STYLES AMONG BS NURSING STUDENTS STUDYING AT PRIVATE COLLEGES, PESHAWAR

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Abstract

Background: Learning styles are how each person learns new things, including seeing, touching, or hearing. They shape how a student focuses on, understands, and remembers new information. Teaching about learning styles helps students become more active learners by showing them how to learn and use what they've learned to solve problems and succeed.

Aim: The study aimed to assess the preferred learning styles of undergraduate nursing students and to analyze their implications for teaching strategies in nursing education.

Methodology: The research methods, including a cross-sectional quantitative design conducted in various nursing colleges of Peshawar over two months. Nursing students were selected using simple random sampling, and ethical approval was obtained prior to data collection using the VARK questionnaire to assess learning styles. The sample size was 169 participants.

Result: The study was analyzing learning preferences and demographics, revealing 87% male and 13% female participants, with 45.6% from FIN College and 54.4% in their fifth semester. Learning preferences show a strong inclination towards kinesthetic and auditory styles, with significant interest in visual learning through video tutorials and feedback.

Conclusion: The study concluded that nursing students rely heavily on aural and kinesthetic modalities, reflecting the practical and interactive nature of their training. Educators should integrate multimodal teaching strategies with emphasis on discussion, simulation, and hands-on practice to foster effective learning.

INTRODUCTION

Learning style can be defined as the preferred manner through which one takes in, processes and stores information. It has four major categories which are visual, auditory, kinesthetic, and read/write. [1]. Diagrams, charts and written text make visual learners understand better. Auditory learners learn by listening to lectures or discussions.

[2]. Kinesthetic learners like physical activities and hands on practice, whereas the read/write learners make use of notes, books and written materials. These styles manifest the mental, sensual and emotional provisions that define student knowledge interactions. [3].

Nursing students all over the world exhibit a variety of learning styles, and the multimodal approach incorporating two or more methods is preferred by a significant proportion of students. Research has shown that nursing students in Pakistan tend to be oriented towards the styles of learning that are kinesthetic and auditory, and which are in line with the requirements of the nursing profession in practical and discussion-based nursing. [4]. It is also reported to vary by gender, academic year, and cultural background, which underscores the need to study the prevalence among local populations of nurses. [5].

The peculiar feature of nursing education is that students should master the theoretical and clinical material. Knowledge of learning styles assists teachers to formulate instructions that meet the needs of individuals to improve on their recall and application of skills. In case the teaching mode is aligned with the style of the learner, students will be more motivated, perform better in examinations and show better clinical reasoning. [6].

The tools of assessment, like the VARK questionnaire, are also commonly used to assess learning styles in nursing education. The VARK model has four possible groups in which a learner can be classified but it also recognizes the multimodal learner who can utilize different strategies in different contexts. The classification enables the teacher to develop evidence-based teaching methods that can respond to the needs of different learners. [7].

Nursing curricula based on competencies are focused on the combination of knowledge and practice. An example of these would be the differences between kinesthetic and auditory learners in clinical placements and simulation labs and lectures and peer discussions. [8]. Visual learners have an advantage in charts, case maps, and concept diagrams, and read/write learners are dependent on textbooks and assignments. Knowledge of such learning preferences will ensure that the students are sufficiently equipped to meet the level of complexity of the clinical practice. [9].

Learning styles are also a product of cultural and institutional contexts. Interactive or experiential learning is not always given a chance in Pakistan, where traditional teacher-centered methods are

commonly applicable to classrooms. Such a discrepancy between the teaching methods and preferences of the students is one of the reasons to question the necessity of change in nursing education, with more emphasis on active and student-centered approaches. [10].

The current research paper analyzes the learning styles based on VARK framework of BS Nursing students who are admitted in the private colleges within Peshawar. By determining the prevailing preferences within this population, the research gives evidence that may help inform curriculum and instruction. [11]. These insights will be used to enhance inclusivity in the educational strategies, hence increasing the engagement of the students, their academic success, and their preparation to work as professionals in nursing. [12].

Methodology

This study employed a quantitative cross-sectional design to assess the preferred learning styles among Bachelor of Science in Nursing (BSN) students. A cross-sectional approach was selected because it allows researchers to capture data at a single point in time, providing a snapshot of students' preferences without manipulating variables. The study was conducted across three private nursing colleges in Peshawar: Farkhanda Institute of Nursing and Public Health (FIN&PH), Khyber Pakhtunkhwa Institute of Medical Sciences (KPIMS), and Hayatabad Institute of Medical Sciences (HIMS). These institutions were chosen due to their accessibility and their diverse student populations, which provided an appropriate setting for examining varied learning styles. The duration of the study was two months, following formal approval from the concerned authorities. The study population included all nursing students enrolled in the selected colleges. Using non-probability convenience sampling, a total of 169 students were recruited. Inclusion criteria consisted of nursing students in the 5th and 6th semesters who were willing to participate. Students who were absent or declined participation were excluded.

Data Collection

A standardized, adopted VARK questionnaire (Version 7.8) was used to assess learning styles. The tool, widely validated in nursing education research,

includes 16 items exploring preferences in Visual, Aural, Read/Write, and Kinesthetic modalities. The questionnaire had two sections: (a) socio-demographic profile, and (b) VARK-based learning style questions. Prior to data collection, permission was obtained from institutional heads, and informed consent was secured from each participant. Data collection took place in classroom settings to ensure a supportive environment.

Data Analysis

Data were coded and entered into SPSS version 24 for analysis. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were calculated to summarize socio-demographic variables and learning style preferences. Cross-tabulations were performed to identify patterns across demographic groups such as gender, semester, and institution. The results were presented using tables and charts to enhance clarity and

interpretation. Ethical considerations were carefully addressed: approval was obtained from the concerned institutional review bodies, and written permission was granted by college administrations. Participants were fully informed about the aims and objectives of the study and were assured of confidentiality and anonymity. Participation was voluntary, and no identifying information was collected. Data were stored securely and used solely for academic purposes.

Results and Analysis

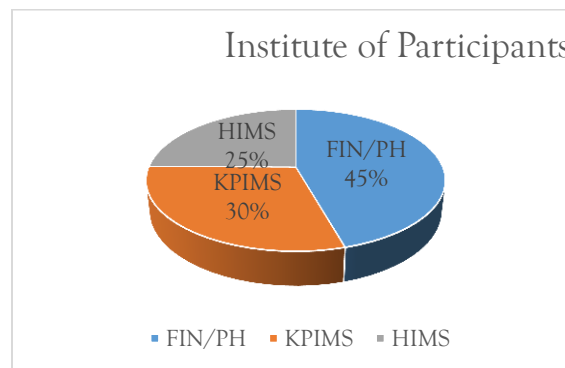
The majority of participants were male (87%), while only 13% were female. Most respondents were from FIN/PH (45.6%), followed by KPIMS (29.6%) and HIMS (24.9%). Over half were from the 5th semester (54.4%), with the remaining from the 6th semester (45.6%). This indicates a young, male-dominated nursing student population. [Table 1].

Table 1: Socio-Demographic Profile of Participants (n = 169)

Variable	Categories	Frequency (n)	Percentage (%)
Gender	Male	147	87.0
	Female	22	13.0
College	FIN/PH	77	45.6
	KPIMS	50	29.6
	HIMS	42	24.9
Semester	5th	92	54.4
	6th	77	45.6

Most participants were from FIN/PH (45.6%), followed by KPIMS (29.6%) and HIMS (24.9%). This shows FIN/PH had the highest representation among the colleges. [Figure 1].

Figure 1: Institute of Participants



When giving directions, most students preferred aural instructions (42.6%), while visual learning was least preferred (12.4%). For cooking tasks, aural learning again dominated (37.9%). Regarding test feedback, read/write style was favored (34.3%), while visual feedback was the least popular (16.6%). Overall, aural and read/write styles were stronger than visual. [Table 2].

Table 2: Preferred Learning Styles – Direction, Cooking, and Feedback

Question Context	Most Preferred Style	%	Least Preferred Style	%
Giving directions (Q1)	Aural (verbal instructions)	42.6	Visual (maps)	12.4
Cooking (Q4)	Aural (listening to instructions)	37.9	Visual (images/videos)	15.4
Feedback after test (Q14)	Read/Write (written feedback)	34.3	Visual (graphs)	16.6

Learning from website videos was mostly associated with visual preference (35.5%), followed by kinesthetic (29.6%). For acquiring new skills, both aural and kinesthetic styles were equally chosen (40.8% each). In learning computer programs, aural (32%) and read/write (29.6%) styles were prominent. These results highlight the importance of both auditory and hands-on learning. [Table 3].

Table 3: Preferred Learning Styles – Technology & Skill Acquisition

Question Context	Most Preferred Style	%	Second Preference	%
Learning from website video (Q2)	Visual (diagrams/images)	35.5	Kinesthetic (hands-on)	29.6
Learning new skills (Q7)	Aural (listening) & Kinesthetic (hands-on)	40.8 each	Visual	16.6
Learning new computer program (Q9)	Aural (listening)	32.0	Read/Write (tutorials)	29.6

Aural style was consistently preferred in contexts like directions, doctor explanations, and presentations, ranging from 29% to 48%. Kinesthetic style scored highly in practical activities such as cooking and product testing (25–47%). Read/write preference appeared in buying products and receiving test feedback (29–46%). Visual style remained the least dominant, though valued for videos and diagrams (15–36%). [Table 4].

Table 4: Overall Learning Style Preferences Across Activities

Discussion

The results of this research indicated that aural and kinesthetic learning styles were the most popular with read/write coming next and visual the least popular among the people. This outcome is consistent with the past studies [13], who reported that the aural and kinesthetic modalities are dominating in the practical sphere of life like the nursing profession. The fact that hands-on and listening-based approaches are very common in the context of nursing education is not a surprise since those learners are usually subjected to training focused on patient-centered as well as skills-based methods that need attentiveness and practical interaction.

The present study is different when compared with the study [14], who found that the multimodal learning with a high effect on the visual and read/write styles appeal is the most preferred type of learning by medical students. Learners of nursing in this situation were fewer visual learners, which can be attributed to curriculum design and learning conditions. The comparison emphasizes that contextual elements, including the availability of resources and instruction methods, influence the preferences of students in their learning styles. One can also compare it with the study [15], which stated that Turkish medical students were great enthusiasts of visual learning. Their results are in contrast to this study which indicates that visual was the least preferred by a group of Pakistani nursing

students. Cultural and infrastructural restrictions can be cited as one of the possible explanations because the adoption of high visual aids such as simulation labs and multimedia technologies, is not prevalent in several local settings as it is in an international setting. This is an indication that both institutional support and availability of resources have a direct impact on the development of the learning style.

The aural and kinesthetic orientations in the given research are close to the findings [15], as the authors concluded that health sciences learners in Sri Lanka favored multimodal learning, and one of the most prevalent of them was the kinesthetic. Just like the work by them, the results in this case point out the importance of experience-driven and discussion-based teaching methods as compared to visual or text-intensive ones for learners in practical professions. These similarities indicate that there is a regional trend in South Asia with students preferring a participatory learning environment.

In contrast to [14], who reported that read/write was the predominant among the physiology students, this research shows that read/write was still secondary as it was outweighed by aural and kinesthetic learning methods. This gap implies that the nursing students can focus on experience-based and interactive approaches rather than text-based strategies, as their training is clinical in nature. These results support the notion that discipline-specific requirements can have a drastic impact on learning style orientations.

The findings are also more or less similar to those of the studies [15], which reported that nursing students tended towards favoring the kinesthetic learning. Their study however, as pointed out, showed prevalence of kinesthetic though aural was slightly higher in the current study. This difference could be attributed to the willingness of teaching methods, since local approaches to teaching usually imply lectures and oral explanations, and auditory stimulation is more effective in these cases. This also helps in the idea that learning preferences are not fixed and they change according to the teaching-learning environment.

All in all, the results can contribute to the increasing body of knowledge on the fact that learning style preferences differ depending on the subject and area and institutional context. Although some international research focuses on visual or read/write

learning styles, aural and kinesthetic styles are highly favored by Pakistani nursing students, which speaks of the need to develop educational plans that would involve a discussion, case-based learning, and practical tasks. These preferences can be addressed to enhance the performance of teaching, student interaction and the competence of the clinical practice, but additional comparative research is necessary to apply these findings within the different settings.

Conclusion

The present study concluded that nursing students demonstrated a stronger preference for aural and kinesthetic learning styles, while read/write was secondary and visual remained the least dominant. These findings emphasize that nursing education, which is heavily practice-oriented, requires teaching strategies that align with students' natural inclinations towards listening, discussion, and hands-on activities. The results highlight the importance of recognizing learning diversity within nursing programs and adapting educational methods to improve engagement and clinical competence. By acknowledging these preferences, nursing educators can design more effective instructional strategies that foster critical thinking and practical skill development.

Recommendations

1. Integrate more interactive teaching strategies such as case-based discussions, role-plays, and group activities to support aural learners.
2. Increase the use of clinical simulations, demonstrations, and hands-on practice sessions to strengthen kinesthetic learning.
3. Provide faculty training workshops on multimodal teaching approaches to reduce reliance on lecture-only methods.
4. Gradually incorporate visual aids such as charts, videos, and simulation-based software to enhance visual learning styles.
5. Encourage students to engage in reading, writing, and reflective journaling to improve read/write learning skills.

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