Preferred Learning Techniques among Bachelor's Level Students

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Abstract

Learning styles describe how individuals acquire, interpret, and assimilate knowledge differently. The effective use of learning styles is essential for effective classroom education. The three most popular learning styles are kinaesthetic, auditory, and visual. This study pursued to learn more about the preferred learning modes of college students. There were 152 respondents from Baneshwor Multiple Campus, Kathmandu Nepal. The data were collected from first year students of BBS, B.Ed. and BA. The researchers used a scale of learning styles (VAK) with 28 items to accomplish the study's goal, and after confirming its validity and reliability, it was applied to the sample. The results show that there are no statistically significant differences in the types of learning patterns preferred by students. Based on these findings, the study recommends that teachers are encouraged to diversify college teaching strategies and methods to suit the preferred learning styles of their students, particularly new students, in order to motivate them to learn in the college environment and to provide the training needs and requirements necessary to enable them to take individual differences among their students into account when identifying educational goals.
Keywords: auditory learning, kinaesthetic learning, learning technique preferences, visual learning

Introduction

Educational and psychological researchers have become increasingly interested in the educational patterns of learners as part of a serious effort to develop education and improve its outcomes. To accomplish this, it was necessary to consider the individual differences in learners' patterns by diversifying appropriate teaching methods and strategies to help them learn effectively; because individuals build their knowledge and experience and develop their multiple skills appropriately during their development, as well as their preferred learning styles (Almomani, 2019). These patterns regulate their thinking about the stimuli and difficulties individuals encounter during their varied daily interactions; as a result, it reflects their preferred ways of interacting with the environmental stimuli and experiences they encounter, which is mirrored in their approaches. Knowing which learning styles students prefer allows teachers to select teaching tactics that meet their preferences and organize classroom activities that satisfy students and improve their attitudes toward learning as well as their academic achievement (Al-Nazeer, 2015; Al-Salameh, 2012). The learning pattern is the learner's ability to absorb learning experiences by selecting the preferred approach utilized to organize and solve knowledge and problems. The ways in which people interact with these patterns differ from one another. To reconcile teaching methods with student learning patterns, the teacher must have additional abilities and ways to accept differences in student learning patterns and to take individual differences into consideration while selecting learning styles and strategies during the educational setting (Abdel & Medhat, 2016).

The phrase "learning patterns" or "learning styles" first developed in the early twentieth century, when various hypotheses and personal classifications of individual differences among persons appeared. Carl Young originally utilized it in his idea of main patterns in 1927. The American Society for Training and Development (ASTD) defined educational style as "a theoretical and practical concept that explains how the learner obtains his/her knowledge or how to modify his/her behaviour" (Almomani, 2019). More broadly, the National Association of American High School Principals defined the learning pattern as "a combination of mental, emotional, and physical characteristics that act as relatively consistent indicators of the learner's behaviours during his reception, interaction, and responsiveness to the environment" Vaishnav (2013). It is defined as "cognitive, motivational, psychological, and temperamental indices that show how the student takes information, processes and interacts with it, and responds favourably to it through the educational environment". According to Fayombo (2015), it is "the way an individual uses information to organize and manage information, including knowledge transformation, integration, and reconstruction into individual experiences". Learning patterns refer to how students interact and handle information, perceived and absorbed, and their ability to retain and retrieve it; these patterns differ from one student to the next, making the same education effective with some students and ineffective with others, confirming the need for diversification in their learning techniques (Rawashdeh, Nawafallah, & Omari, 2010).

Many models for categorizing learning patterns arose as a result of educational scholars' growing interest in the study of learning patterns. The VAK model of sensory-based cognitive learning patterns is the most well-known of these. It was created in the 1920s by psychologists to categorize the most typical patterns and techniques of teaching among humans. It divides learners into three categories: aural, visual, and kinaesthetic. Visual learning style: Its author relies on visual perception and visual memory to learn; he/she learns better by seeing

educational material, such as drawings and shapes, directly or through projectors, and using actions like "show me" or "let me see" as he learns; the auditory style is a pattern that relies on auditory perception (Almomani, 2019). A study on learning styles showed that 29% of all pupils in primary and secondary schools learn visually, 34% learn auditory, and 37% learn better through kinaesthetic technique (Fayombo, 2015).

Another model is the Fleming and Bonwell VARK model. This model categorizes learning patterns into four types based on cognitive sensory means, in which the learner likes to process his knowledge and experiences in order to learn. They are as follows: A. Visual learning style: the author learns through visual perception of the instructional material. B. Aural learning style: the author learns through auditory perception. C. Reading style: The author learns by relying on the ideas and meanings that are read and written. D. Kinaesthetic style: The author learns tactile perception concepts and meanings from experience and discovery, and they favour authentic and natural settings and models (Vaishnav, 2013). As proven by prior learning pattern classifications, and based on research and studies that have demonstrated the value of paying attention to these patterns in providing greater learning chances in university education (Al-Nazeer, 2015; Yaqoob, Alkhazi, & Safar, 2016). Alternatively, in the general education stages (Fayombo, 2015; Vaishnav, 2013), this is accomplished by training and encouraging teachers to rely on a variety of educational strategies, methods, and activities to suit their students' preferred learning patterns and to assist them in learning better according to these patterns in order to overcome learning difficulties, develop their abilities, raise their academic level, and improve their attitudes toward learning.

Research Problem

At various stages of educational activities, teachers have a large number of students in the classroom who differ in their abilities, tendencies, and educational patterns, but often teach them all in the same way without taking into account their differences in the learning styles they prefer. Then the development of their thinking during the academic stages may have a negative impact on the quality of the teaching process outputs (Neupane & Subedi, 2018). Given the reality of contemporary teaching in educational stages in general, as well as the challenges confronting the educational process in the twenty-first century, educational institutions should have engaged in research and reflection on the development of effective educational mechanisms that would ensure the generation of an educational setting, and make it adaptable to changing times; this can only be accomplished through the development of modern teaching models and strategies, as well as the elimination of traditional models that do not reveal students' abilities and potential, and do not take into account individual differences in their learning patterns.

Based on the disparities between the findings of previous studies on the subject of the study and the recommendations made by some recent studies (Fayombo, 2015; Yaqoob, Alkhazi, & Safar, 2016), it was determined that more research on learning patterns in various stages and educational environments was required. The purpose of this study is to identify the learning styles (VAK) preferred by students who have been studying in college levels, and to compare the results obtained through this study with the results of previous studies in this area, in order to provide an opportunity for all students to learn according to their preferred learning styles.

Research questions

The following research questions are addressed in this study:
1. What types of learning styles are favoured by college students admitted to Baneshwor Multiple Campus?
2. Do college students enrolled to Baneshwor Multiple Campus prefer distinct learning strategies based on gender?

Significance of Research

The significance of the current study arises from the discovery of preferred learning styles among college students who have been admitted to the university level. It is expected that the findings of this study will help to determine the impact of students' preferred learning styles on their academic achievement, as well as encourage college administration to provide a stimulating college environment for its new students by focusing on faculty members' training needs and professional requirements, allowing them to consider individual differences between their students in determining academic achievement which will satisfy them and boost their motivation and attitudes toward university learning, as well as keep abreast of scientific and technological advancement in order to produce what is known as successful university teaching with its excellent educational outputs.

Literature Review

Rai et al. (2017) conducted a study to identify the learning styles of male and female students in Nepali public and private schools. Primary data were acquired from the Chepang community of Makwanpur, Chitwan, Gorkha, and Dhading districts. The study included 368 students from four districts. The Visual, Auditory, and Kinaesthetic (VAK) model established by Neil Fleming was employed in the field for data collecting. The findings revealed that there was no significant difference in learning methods between male and female pupils. It demonstrated that male and female achievement and performance are comparable.

Yaqoob et al. (2016) had a study to investigate the predominant patterns of learning among Kuwait University students and their relationship to some variables. The finding showed that the cognitive pattern is the most typical form of learning among pupils. Furthermore, the results revealed statistically significant variations in cognitive pattern attributed to gender variable and in favour of females, whereas no statistically significant differences attributed to other variables were found (academic year, scientific specialization, and general average). Based on the findings, the study proposed that teachers be sensitized and taught to monitor learning patterns and do additional research in this area.

Marantika (2022) studied on learning styles with reference to gender. The purpose of this study was to identify students' learning styles from a gender viewpoint and define the associated learning strategies to aid in the learning process. Overall, the findings revealed a link between learning styles, gender, and learning outcomes. Based on the research findings, it is possible to deduce that learning style and gender can influence learning outcomes, particularly language abilities of students.

Neupane and Dawadi (2018) conducted an exploratory cross-sectional study. The quantitative method was used in this investigation. The gender differences of learning styles among 102 high school students was inspected. The study showed that kinaesthetic learning style was

preferred by high school students. Similarly, Meshack (2015) did a master's project to investigate the association between learning patterns (VAK) and academic achievement among Kenyan secondary pupils. The results of the data analysis revealed that the majority of pupils favoured the three forms of learning. While kinaesthetic learning was the least preferred by students. The findings also revealed that there are no statistically significant differences between students' learning patterns and their academic achievement, whether for groups with low or high achievement, while the findings revealed a strong correlation between academic achievement and the learning patterns of students who prefer the three educational styles.

Radhwan Hussein Ibrahim and Dhia-Alrahman Hussein (2016) studied about learning styles (VAK). The goal of this study was to analyse undergraduate nursing students' visual, auditory, and kinaesthetic learning styles. A descriptive study was conducted in two nursing colleges at the universities of Mosul and Kirkuk. Data was collected via stratified random sampling. The intended audience consisted of 210 undergraduate nursing students (60 male and 150 female). For data analysis, the Statistical Package for the Social Sciences (SPSS), Chi-square, Frequencies, and Percentage were employed. The findings revealed that the study sample's visual, auditory, and kinaesthetic learning styles were (40.0%), (29.5%), and 30.5%, respectively. Females preferred auditory learning (30.3%) over males (27.3%), whereas males favoured kinaesthetic learning (32.3%) over females (29.8%). The researcher recommended that nurse educators should aware of learning styles of the students and provide teaching style to be matched with their learning style.

Fayombo (2015) conducted another study to identify educational patterns (VAK), teaching strategies (video, games, role play, discussion, teams), and their impact on academic achievement among a sample of 171 male and female undergraduate students in the Educational Psychology specialization at a university in the West Indies. To meet the study's aims, the researcher created three tools: a questionnaire of active learning tactics, a survey of learning patterns, and a detection of student academic achievement. Following the application and analysis of the study instruments, the results revealed that students prefer visual, auditory, kinaesthetic, and then numerous patterns, and that the majority of students favour classroom learning methodologies. The findings also demonstrated a statistically significant relationship between learning patterns and instructional styles and student academic attainment. Based on these findings, the study proposed that teaching tactics be varied in order to accommodate variances in students' learning patterns and boost their academic accomplishment in educational psychology.

Alwan (2012) performed another study with the goal of identifying the preferred learning techniques of high school students in Ma'an, Jordan, and their relationship with gender and specialization characteristics. The study sample included 220 second grade secondary school pupils. According to the study's findings, the auditory style is the most chosen learning approach for students, followed by the visual style, and the kinaesthetic pattern is the least preferred among students (touch). Furthermore, the findings revealed that students in the scientific field prefer visual and kinaesthetic learning methods, but students in the literary field favour audio learning methods. According to the findings, teachers should focus on understanding students' preferences for learning techniques and planning accordingly.

Almost all previous studies have found that gender is one of the most critical factors in learning preferences. The majority of these studies show that boys and girls learn in quite different ways. Each learner has an own learning style, which could be auditory, visual, or kinaesthetic. Maqbool et al. (2018) discovered that most students in the classroom favoured an auditory learning approach, in which they learned through reading or listening. Other students, in addition to auditory learning methods, prefer visual or kinaesthetic learning techniques, or a combination of the two. According to Shuib and Azizan (2015), what is now a concern and a source of discussion among researchers is whether gender variations affect each student's learning style preferences.

Methods & Materials

This study adopted quantitative research, which is to quantify the problem by generating numerical data or data that may be turned into usable statistics (Neupane, 2018). Deductive reasoning is evident in quantitative research. The quantitative researcher separates the variables to be examined, develops in advance a precise issue statement and a precise hypothesis to test, gathers uniform data from every participant, analyzes the data, and draws generalizability-related conclusions. Further, quantitative research employs quantifiable data to develop facts and find trends in research (Neupane & Dawadi, 2018). In this study, quantitative research will assist the writer in presenting the research results as numeric data in a percentage table, which can influence the research conclusion.

This is a cross-sectional non-experimental study. The research was conducted at Baneshwor Multiple Campus, Kathmandu. The primary goal of this study was to discover gender differences in college students' learning styles. The information was gathered by a self-administered questionnaire survey. The total number of respondents was 152 (52 males and 100 females). The collected data and information were analysed and evaluated quantitatively. The sample was analysed using the SPSS statistical tool and the results were displayed in percentages as well as chi square tests. The quantitative data collected in the field were edited, tabulated, and finally analysed using statistics.

Results and Analysis

The statistical analysis conducted on the study data revealed the following results ordered according to their questions:

Research Question 1

To identify the learning styles of students enrolled Baneshwor Multiple Campus, the percentage of respondents' replies on the learning styles scale were calculated. The outcomes are shown in Figure 1. Out of total respondents, 34.51% preferred Kinaesthetic learning styles. Followed by, 32.01% preferred Auditory learning styles. 33.48% respondents preferred Visual learning styles.
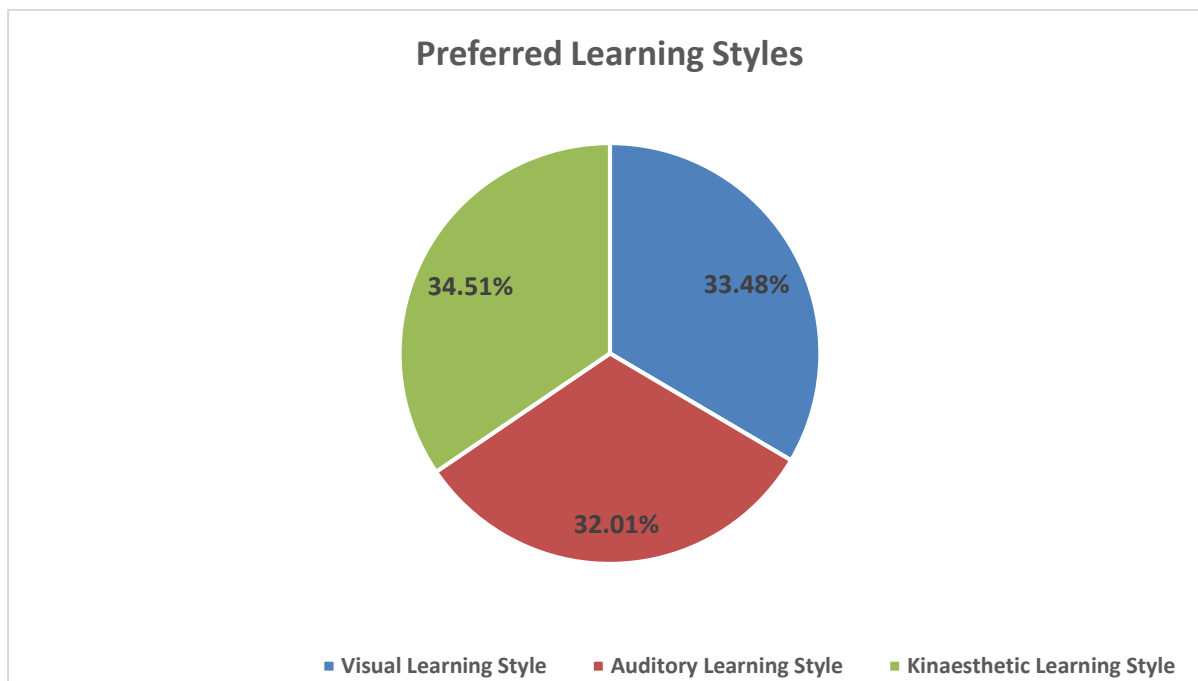
Figure 1: Preferred Learning Styles

Figure 1 shows the study sample's preferred learning styles (visual = 33.48%, auditory = 32.01%, kinaesthetic = 34.51%). This finding contradicts the findings of prior studies, such as Fayombo (2015), who found that undergraduate students preferred visual, aural, and kinaesthetic learning. According to (Alalwan, 2012), students in the scientific field prefer visual learning approaches. In addition, Vaishnav (2013) found that secondary pupils have a low preference for the kinaesthetic learning pattern. This conclusion may reflect the type of the instruction offered to students in secondary and prior levels, as evidenced by the incorporation of educational scenarios in pictures and drawings, models and paintings, chalkboard writing, and dialogue and discussion during learning. However, this does not imply that there are no other preferred learning styles that have an impact on students' achievement in the event of a change in the learning environment, particularly since these students have moved to a university that differs from the general education levels in their environment. This necessitates college teachers diversifying their approaches and strategies in the classroom to guarantee that all students' requirements are satisfied in accordance with the learning objectives.

Research Question 2
To address the question, the researcher calculated percentages of frequency for each cell arising from the intersection of the learning mode variable (kinaesthetic/visual/auditory) and the gender variable (male/female). The outcomes are depicted in Figure 2.
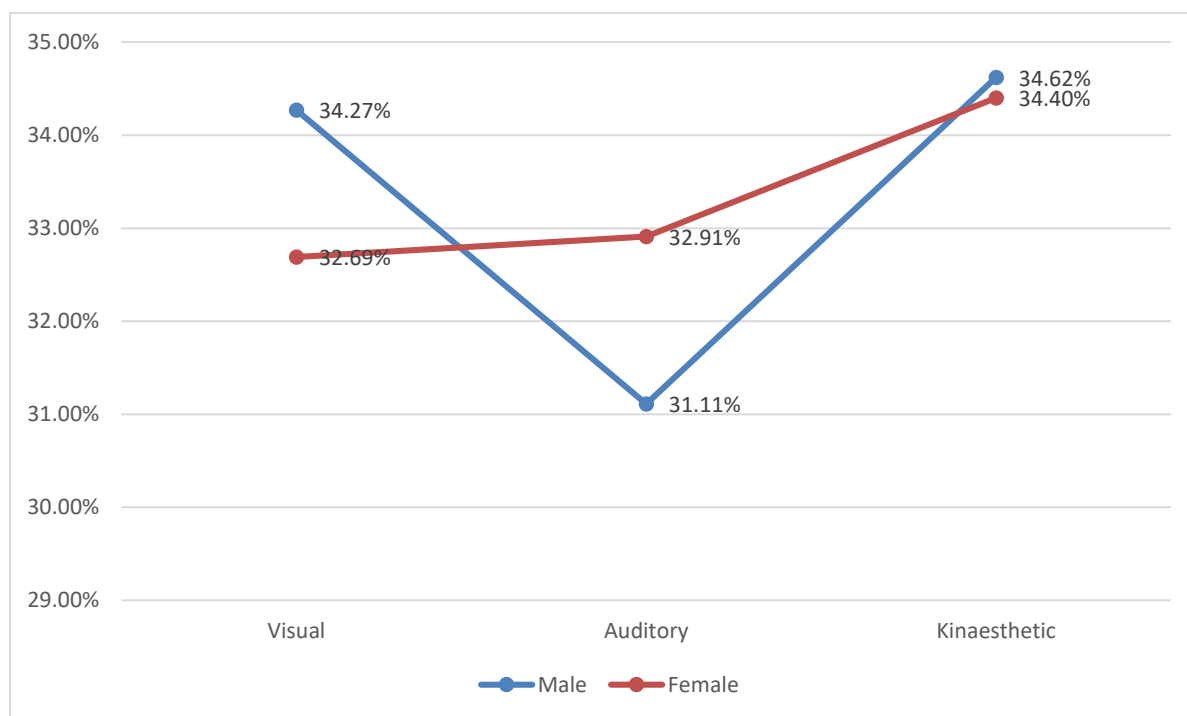
Figure 2: Gender-wise Learning Techniques Preference

Figure 2 shows that there are significant differences in the percentage of frequencies of learning patterns selected by the sample that could be attributable to the gender variable. Male students preferred visual and kinaesthetic learning styles than auditory learning style. This result showed that in contrast to male students, female students preferred the auditory learning technique. Due to their propensity for enjoying and actively listening to music, female students favoured the auditory learning technique.

These findings contradict the findings of other studies, such as (Bilawi, 2006) and (Alwan, 2012), which found that students preferred aural learning over visual and kinaesthetic patterns. Based on the findings of Fayombo (2015), children choose visual patterns over auditory and kinesthetic ones. These preferences may occasionally be influenced by a variety of elements, including the learning environment, equipment accessibility, students' capacity for experimentation and problem-solving, achievement, and others.

Conclusion

In this study, the most preferred learning style of college students was not distinct amongst Visual, Kinesthetic, and Auditory. There is a considerable difference between male and female VAK learning styles; male students prefer Kinaesthetic, Visual and Auditory learning styles, whilst female students prefer Visual, Auditory and Kinaesthetic learning styles. Thus, encourage professors to diversify teaching strategies and approaches to suit the learning patterns preferred by their students, particularly new students, in order to stimulate them to learn in the college setting. In order to determine educational objectives, material, methodologies, and tactics that take into account the distinctive differences between their students, faculty members' training and professional needs must be satisfied. It is necessary to conduct additional research on students' various learning styles so that we can better understand students' preferred learning techniques.

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