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Learning Styles Preferences Among the Students

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Abstract

Learning styles are determined by how individuals approach learning, understanding, and remembering information. This study discusses several studies that examine students' learning style preferences. From the studies, it appears that students prefer different learning styles. Recognizing and taking into account these different learning styles can help educators better understand their teaching methods to meet the needs of individual students, resulting in a more inclusive and effective learning environment. The study conducted in this paper is based on a qualitative research approach using open-ended questionnaire to understand the learning attitudes and preferences of high school students. The results show that students primarily prefer four learning styles: self-supportive, Contextual, associative, and collaborative. Each learning style reflects certain characteristics and preferences, such as independence, comfort in a familiar environment, a need for structure and guidance, and a preference for group activities. In summary, this article highlights the importance of recognizing and accommodating students' different learning styles in educational settings. It provides valuable information for educators to effectively adapt their teaching methods to ultimately improve students' learning experiences and academic outcomes.

Keywords: learning styles, inclusive learning environments, learning preferences, self-supportive, Contextual, associative, and collaborative.

Introduction

The concept of how people learn has been widely researched and debated within the field of education, with various theories and models developed. In 1987, Neil Fleming developed the VARK model, one of the most well-known models of learning styles. The model identifies four types of learners: visual, auditory, reading/writing, and kinesthetic. A visual learner prefers visuals and diagrams, an auditory learner prefers sound, a reading/writing learner prefers written text, and a kinesthetic learner prefers physical activities. Kolb's experiential learning theory posits that individuals learn through concrete experience, reflective observation, abstract conceptualization, and active experimentation. Honey and Mumford categorize learners into four types based on their learning styles model: activists, reflectors, theorists, and pragmatists.

Understanding a student's preferred learning style can help teachers better tailor their teaching methods to the student's needs. But learning style preferences are not a single issue. The study (Karim et. al., 2019) shows that out of 1004 medical students, 64.2% preferred multimodal learning styles and the remaining 35.8% preferred unimodal learning styles. Khanal et. al (2019) conducted a study to determine the preferred learning style among first year preclinical medical students and compare the preferred learning style with students' gender, faculty, and academic performance using the VARK questionnaire. The aim of Rezigalla et. al. (2019) were to describe learning styles among undergraduate medical students at the

College of Medicine, Bisha College. The aim of Payaprom et. al., 2020 is to determine the preferred learning styles of undergraduate students and to determine the relationship between learning style preferences, gender, and fields of study. (Hernandez et. al., 2020) describe how medical students with different learning styles learn anatomy and integrate multiple learning styles (multimodal) to achieve learning objectives, focusing on the approach of kinesthetic learners. A cross-sectional study was conducted with a sample of 262 students using a self-administered questionnaire that included sociodemographic data, academic achievement, and the Perch Learning Styles Inventory (Gabal et. al., 2021). Schultz et. al. (2021) conduct three teaching sessions with 35 residency students. Other influential work includes (Wang et. al., 2019). Every investigation analyzed and identified an approach of students to discriminate themselves in terms of their preferences of learning style.

This knowledge enables pedagogical approaches and provides important insights for students and teachers. When educators understand learning styles, they can tailor their teaching methods and activities to the strengths and weaknesses of individual students (Baherimoghadam et al., 2021). Learning styles can be used to tailor teaching methods and materials to meet a student's needs and preferences. In spite of this, research suggests that it is unlikely that teaching methods that are based on learning styles are more effective than those that do not. With the advent of technology, learning has become more convenient and accessible than ever before. With the advent of online courses, educational apps, and digital content, students can now learn at their own pace and on their own terms. However, this new era of learning has also raised the question of learning style. As society evolves and changes, so does the way people learn.

In recent years, the nature of learning has changed significantly, with traditional methods being replaced by more modern, technology-based approaches. This change is largely due to the increasing role of technology in our daily lives and the changing needs and expectations of learners. Modern students are more responsive to visual aids such as videos, infographics, and diagrams than traditional text-based materials. This is because visual aids are more engaging and can help students better understand complex concepts.

Another shift in learning preferences is the move toward collaborative and collective way of learning. Modern students prefer to work in groups or pairs rather than individually. The reason is that cooperative learning allows them to share ideas, work together to solve problems, and learn from each other's strengths and weaknesses. Furthermore, the modern students also prefer self-directed learning rather than being bombarded with information by teachers. This is because self-directed learning allows them to take control of their own education and learn at their own pace. They can choose what they want to learn, how they want to learn it, and when they want to learn it.

Identifying learning style preferences can help students become more aware of their own learning styles and develop effective study habits. However, studies conducted by researchers from different countries have found that students prefer different learning styles. In fact, the studies have objectively recorded the different learning styles of students. The change in learning style preferences of modern students can be attributed to the rise of technology and the social and psychological phenomena. Therefore, the researcher felt the need to conduct this study to investigate students' current learning styles and preferences.

Objectives of the study

1. To identify and understand the different learning style preferences of students and their perspectives .

2. To investigate the possible effects of learning style preferences on students' academic performance

and engagement in different learning environments.

Research Questions

1. What different learning style preferences do students exhibit?
2. How do students perceive and describe their preferred learning styles?
3. Are there common patterns or clusters of learning style preferences among students?
4. How do students adapt their learning strategies based on their preferred learning styles?

Research Methodology

The study was conducted with a qualitative research approach. The study was conducted with the purpose of understanding the learning style preferences of students when pursuing academic education. Through this research, the researcher tried to find an answer to the research question. That is, what are the preferred learning styles of students? For this purpose, the researcher tried to reach out to a group of nearly 50 high school students studying in different schools in the Nadia district.

In order to collect the data needed for the study, an open-ended questionnaire containing 8 questions about the students' learning attitudes and preferences was completed. The questions were related to students' wants, needs, habits, and preferences at the time of learning. Factors that influence learning style include cognitive ability, personal preferences, personality traits, environment, culture, and past experiences. Understanding and addressing these factors can improve student motivation and academic achievement (Omar & Azid, 2020). To analyze the qualitative data, which were transcribed and highlighted with codes, a thematic analysis was conducted. Similarities and differences were searched for themes, which were then reviewed, renamed, and interpreted to obtain research findings.

Data analysis and Interpretation

Theme 1: Preferred Learning Environment

The respondent prefers to study in a quiet, calm, and undisturbed environment. The respondent's own study room is the preferred location for studying. The respondent does not prefer to study in a group and finds it difficult to prepare for study in such situations.

> *It is my own study room, where I always prefer to study. It is not that when I get some free time, I begin to learn something new. It depends on my own desires. I don't like to be disturbed when I study.*
>
> *The learning environment Should be calm. I like to learn things in my own way. I don't like to be guided by anyone at the time of my learning. I fail to prepare my study when I am involved in any kind of group study.*

Theme 2:Preferred Learning Activity

The respondent prefers to study in a loud manner and finds silent reading difficult. The respondent likes to study in a sitting position and takes notes while studying. This helps the respondent to remember the concepts for a longer period of time.

> *"Since my childhood, I have always preferred to study in a loud manner. Silent reading is not my cup of tea. I like to study in a sitting position. Whenever I complete reading any concept or theory, I usually write it down right down in my notebook. As a result it can last a long time*

in my memory."

Theme 3:Preferred Learning Process

The respondent underlines the main points of a lesson to help with revision. A neat and clean study room is essential for the respondent's learning, as it provides a tranquil environment. The respondent is organized and follows a routine to cover all the lessons at a stipulated time.

"Sometimes I use tricks in order to remember the lesson. I underline the main points of a particular lesson, and it helps me a lot when I revise the same lesson. It is my own study table, where I always study. I have difficulties learning if it is not in my own study room. I always keep my study room neat and clean because the tranquil surroundings give me some extra pleasure in learning. I am also very organized in my learning. I like to follow a routine so that I can cover all the lessonsTheme 4 at a stipulated time."

Theme 4:Preferred Time for Learning

The respondent is a night owl and prefers to study at night due to the absence of sound, which makes it easier to concentrate. However, the respondent also studies during the day, depending on their mood.

"Being a night owl, I always prefer to study at night. Atnight,t their is a complete absence of sound. I feel no disturbance at this time. That's why this is my favorite time to study. But it is not that I don't study during the daytime. I study during the daytime also, but it completely depends on my mood. My internal motivation drives me to prepare my own lesson."

Theme 5:Criteria for Learning

The respondent needs a fixed setup and finds supervision from a better-known person helpful. The respondent also uses online sources to gain a clear understanding of a topic. The respondent prefers to follow a logical order when studying, which helps establish a connection between two topics.

"I always try to prepare my studies attentively. That's why a fixed setup is needed for me. Supervision from a better-known person is very helpful for me. Sometimes I take some help from various online sources which give me a clear cut idea about a particular topic. I always try to follow a logical order when I study. As a result I find some linkage between two topics."

Theme-6:Presence of Friends and Teachers in Learning

The respondent finds the presence of friends and teachers helpful in their learning process. They serve as a positive influence and offer assistance when the respondent faces problems in understanding a lesson.

"The presence of friends and my teachers in my learning gives some positive effect. Whenever I see my friends studying some lesson I am determined to prepare for it. Whenever I face problems in understanding a particular lesson, I take help from my peers and teachers. External assistance is always beneficial for me."

Theme-7:Problems Faced in Group Learning

Group learning has both advantages and disadvantages. The respondent finds group learning beneficial as they can learn from discussions and share ideas with others. However, the respondent faces a problem with disturbances and chaotic situations. The respondent believes that this problem can be controlled by their own intention.

> *"Group learning has some advantages as well as some disadvantages. Here we learn by discussion. Whenever we fail to understand some lesson we immediately can clear our confusion. Here we can share our ideas with one another. In group learning we have the same goal. That's why we get many alternatives for a particular goal. One problem that we face in group learning is the chaotic situation. Disturbances occur in group learning. But this is not a critical issue. We can control this situation by our own intention. So group learning Is very beneficial for me."*

Theme 8: Approach to learning

The respondent prefers a mixed approach to learning, combining various methods such as visual aids, group discussions, and individual study. Visual aids, such as diagrams and illustrations, help them understand complex concepts, while group discussions allow for idea exchange and gaining different perspectives.

> *"I like to combine different methods such as visual aids, group discussions, and individual study. I find that visual aids such as diagrams and illustrations help me to understand complex concepts better. Group discussions allow me to exchange ideas with my peers, and it also helps me to understand different perspectives."*

Dimensions	**Students Response**	**Identified Learning style**
Preferred learning environment	Own study room, Calm environment, No disturbance, No guidance, Not comfortable with group study	**Self supportive** (Emphasis on the individualized way of learning.)
Preferred type of learning activity	Loud reading, Sitting position, Note-taking for better retention	
Preferred learning process	Underlining main points, Learning at own study equipments, Need for clean and tranquil environment, Following a routine for time management	**Contextual** (Emphasis on the environmental and individual perspectives.)

Preferred time for learning	Nighttime due to absence of sound and disturbances, Can also study during the day based on mood and motivation	
Criteria considered most relevant for learning	Need for a fixed setup, Helpful supervision from a known person, Use of online sources for clarity, Following a logical order in studying,	**Associative** (Emphasis on the situation and the support of others.)
Presence of friends and teachers in learning	Positive effect, motivates to study, Help in clearing confusion and sharing ideas, External assistance is beneficial	
Problems faced while learning in a group	Chaotic situation, Disturbances and lack of control, Benefits of group learning outweigh the drawbacks	**Collaborative** (Emphasis on the peer support.)
Mixed approach to learning	*combine different strategies*	

Result and Discussion

1. The student indicates the learning style as self-supportive. This indicates that the learner prefers to learn independently without relying on the guidance or help of others. Learners who are self-supportive often exhibit characteristics such as self-motivation, self-discipline, and a preference for autonomy in their learning process (Akbari et al., 2019). This suggests that the student values a calm and peaceful environment for effective learning. Research has consistently shown that a conducive learning environment can significantly impact concentration, focus, and overall learning outcomes (Crawford & MacLeod, 1990; Pellegrino et al., 2017).
2. Another learning style identified in this study is contextual. This suggests that students prefer a self-directed and independent learning style typically associated with learning in their own familiar environment. The contextual learning style reflects the tendency to learn in a well known and suitable environment where they can establish a routine and control their learning environment. These findings are consistent with previous studies that highlight the importance of effective learning strategies and time management for academic success (Crede & Kuncel, 2008; Schmitt et al., 2017). Previous research has recognized different learning styles, including independent learners who are successful in self-directed learning environments (Coffield et al., 2004). The importance of an appropriate learning environment in supporting effective learning outcomes has been highlighted in educational research (Pellegrino et al., 2017).
3. The results show that the identified learning style of the students in this study is also Associative. Among the criteria they consider most important for learning, students prioritize the need for a set

facility, helpful supervision from a known person, using online sources for clarification, and following a logical sequence in learning. Research has consistently shown that social interactions and support contribute to better learning outcomes (Vygotsky, 1978; Johnson et al., 2014). These criteria reflect students' preferences for structure, guidance, and the use of various resources to support their learning. Previous research has highlighted the importance of organization, support, and access to information in promoting effective learning (Hattie et al., 2007; Mayer, 2008).

4. The study also found a collaborative learning style. This suggests that students prefer to engage in group activities and collaborate with their peers to enhance their learning experiences. This finding is consistent with previous research that has identified different learning styles, including collaborative learning types that thrive in social learning environments (Coffield et al., 2004). Previous research has shown that group learning can improve critical thinking, problem-solving skills, communication skills, and the ability to work effectively in teams (Slavin, 1996). However, some previous studies have also highlighted the potential disadvantages of group learning, such as noise and distraction, conflict among group members, and difficulty coordinating efforts (Johnson et al., 2014). In this regard the self supportive style may be preferred by the students.

In this investigation it is noticed that the student's learning style follows a two-dimensional pattern. One dimension is based on approach, and the other dimension is based on perspective. As for approaches, there are social and individual approaches. On the other hand, the perspective dimension includes habitual and situational bases. Roughly speaking, these dimensions can be divided into four foundations: philosophical, sociological, environmental, and psychological. The philosophical foundation is associated with the individual dimension, the sociological foundation relates to the social dimension, the environmental foundation relates to the situational dimension, and the psychological foundation corresponds to the habitual dimension.

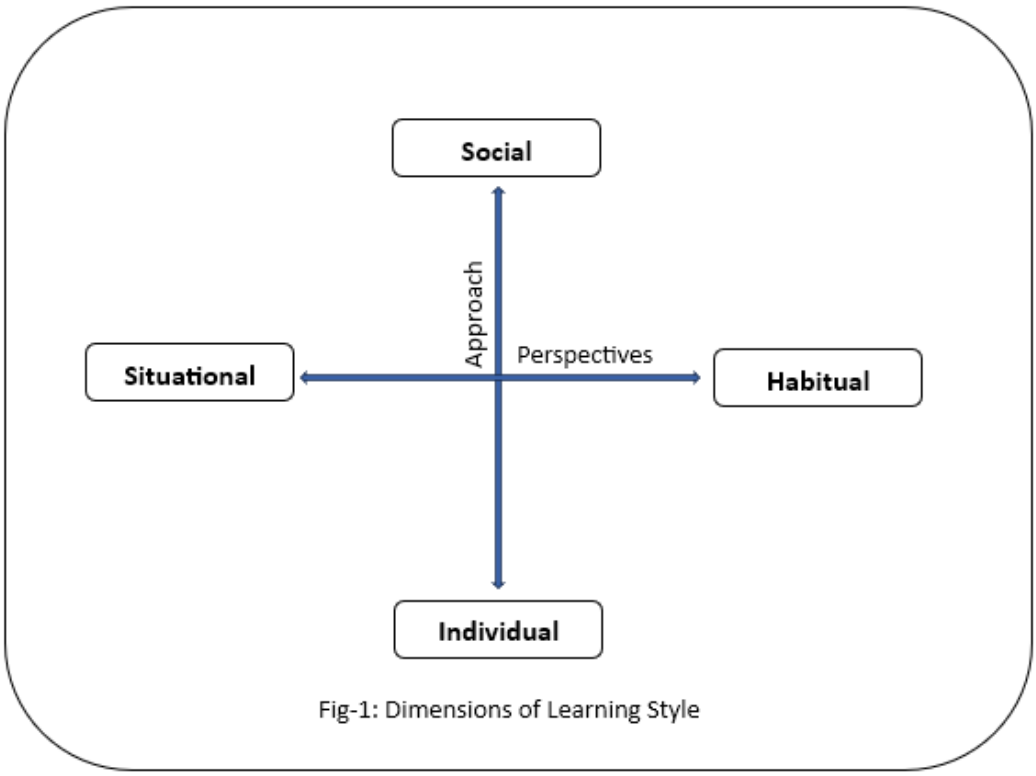

Fig-1: Dimensions of Learning Style

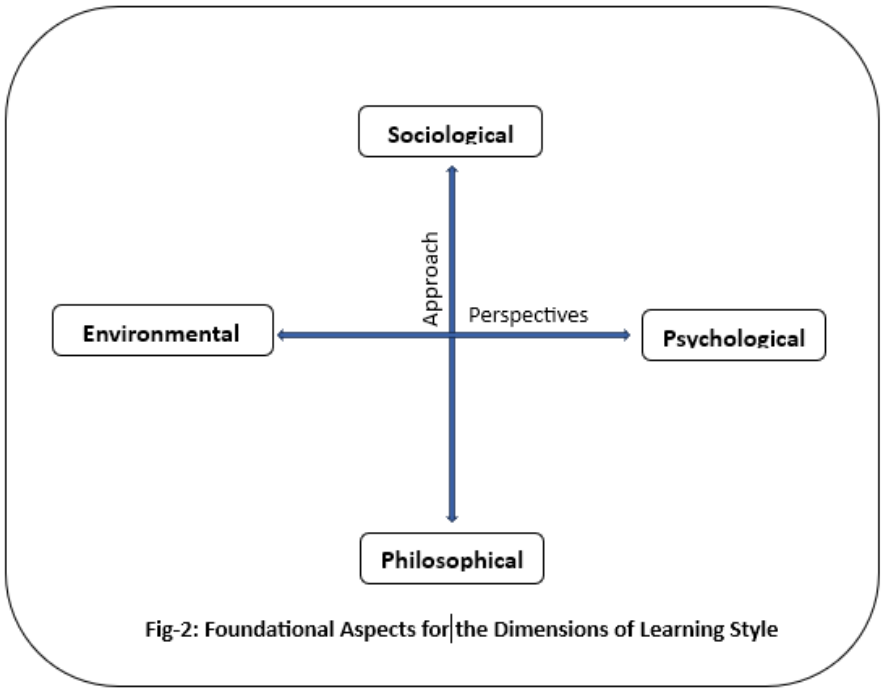

Fig-2: Foundational Aspects for the Dimensions of Learning Style

Within this framework, certain types of learners occupy a special position. Self-supporting learners, for example, lie between the habitual and individual dimensions. They have a self-directed approach to learning that incorporates personal routines and strategies while maintaining a high degree of independence in their learning efforts. Contextual learners are between the individual and situational dimensions and show a preference for individual learning approaches that are influenced by their immediate learning context, such as learning at home or in a familiar environment. Associative learners fall between the situational and social dimensions and combine adaptive learning styles that take advantage of the specific learning context with a preference for cooperative interactions and group work. Collaborative learners, on the other hand, tend toward the social and habitual dimensions and emphasize interactive and cooperative learning experiences that involve shared goals, reciprocal learning, and group dynamics. It could be better understood from the chart given below:

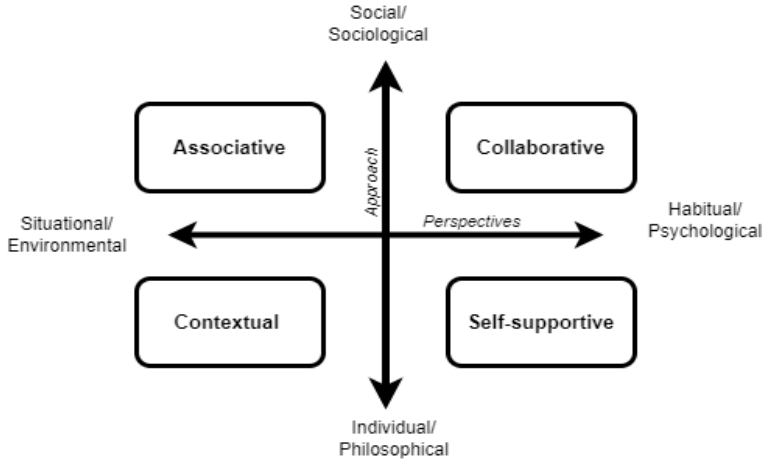

Fig-3: Foundational Aspects, Dimensions and Styles of Learning

In summary, we can see that students are divided into four categories based on their preferred learning style. The four types of learning styles are given in the following diagram:

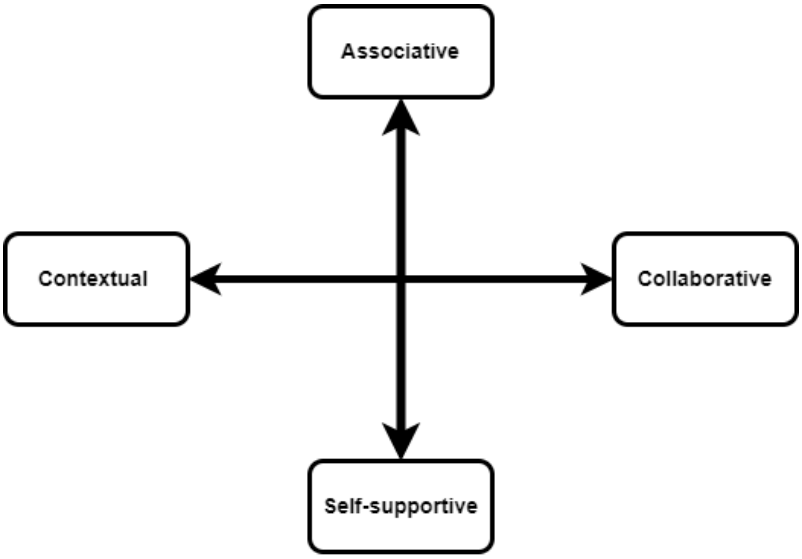

Fig-4: Different Styles of Learning

A. Self supportive

A self-supportive learning style refers to a style of learning in which individuals take responsibility for their own learning process. Individuals who have a self-supportive learning style tend to be highly motivated and independent learners who are able to set goals, manage their time effectively, and monitor their own progress.

B. Contextual Learning

Contextual learning style refers to a type of learning that takes place in the home or familiar environment. This learning style provides students with a safe and comfortable environment in which to learn. Contextual learning allows for greater flexibility in scheduling. Students can work at their own pace and on their own schedule, which can be especially beneficial for those who have other commitments such as extracurricular activities or part-time jobs.

C. Associative Learning

With an associative learning style, individuals tend to learn through a preferable support. They may also rely on visual aids such as diagrams or tables to help them make connections between different pieces of information. These students also prefer to learn with teachers or comparatively more experienced individuals.

D. Collaborative Learning

The term collaborative learning style refers to a type of learning that emphasizes interaction and cooperation among students. In this approach, students work together in groups to solve problems, complete tasks, and discuss ideas. The goal of collaborative learning is to actively participate in the learning process by sharing knowledge and skills with others and learning from peers.

Conclusion

This study addresses student learning styles that follow a two-dimensional pattern based on approach (social and individual) and perspectives (habitual and situational). It identifies four bases for these styles:

philosophical, sociological, environmental, and psychological. Within this framework, specific learning types are described, such as self-supportive, contextual, associative, and collaborative. Understanding these learning styles has practical implications for educators because it allows them to identify the different needs of students and adjust their teaching methods accordingly. By recognizing the unique characteristics and preferences of individual learners, educators can create inclusive and effective learning environments that accommodate a wide range of learning styles.

In summary, this article provides valuable insights into the multidimensional nature of student learning styles and highlights the importance of recognizing and accommodating these different styles in educational settings. Identifying the different learning styles and their respective underpinnings opens avenues for further research and the development of targeted instructional strategies to enhance students' learning experiences.

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