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A Comparative Study on the Learning Styles of School Students with And Without Smart classroom

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Abstract

This study explores the differences in learning styles between school students taught in traditional classrooms and those educated in smart classrooms. The research aimed to assess how learning environments influence students' preferred learning styles. A total of 50 students from various schools in Pudukkottai district participated in the study, with 25 students from smart classrooms and 25 from traditional classrooms. The study employed a purposive sampling technique. The Learning Style Scale developed by O'Brien (1985) was used to assess students' learning preferences. Data analysis was conducted using IBM Statistical Package for the Social Sciences (SPSS) 16.0. Descriptive statistics, including mean and standard deviation, were calculated, and an independent t-test was performed to compare the learning styles of the two groups. Two hypotheses were formulated to examine the relationship between classroom type and learning style. The findings indicated no statistically significant difference between the learning styles of students in smart classrooms and those in traditional classrooms. This suggests that while smart classrooms integrate technology into teaching, they may not necessarily alter students' fundamental learning preferences. The results highlight the need for further research to determine whether other factors, such as teaching methodologies, student engagement, or cognitive abilities, play a more significant role in shaping learning styles. The study contributes to the ongoing discourse on the effectiveness of technology-driven education and its impact on student learning.

Keywords: Learning Styles, Smart Classroom, Traditional Classroom, Educational Technology, Student Engagement, Statistical Analysis, Teaching Methodology

INTRODUCTION

Learning styles

Learning is an outcome of sensory and perceptual process. Sensation and perceptual process is unique for every individual. Learning is the outcome of sensation and perceptual process it is essential to understand the individuals learning style which is different from individual to individual. Learning style is determined in the way the individual perceive the information. Theoretical perspectives on learning

layout that people can be classified according to their style of learning, there are various ways in which the learning styles can be defined and categorized. One common assumption of these theories is that individuals differ in the way or style they learn. Learning is the process whereby knowledge is created through the transformation of experience (Kolb, 1984). The National Association of Secondary School principals defines learning style as, "composite of characteristic cognitive, affective and physiological factors that serve as relatively stand indicators of how a learner perceives, interacts with, and responds to the learning environment.

A focus on process: Learning-style models tend to concern themselves with the process of learning: how individuals absorb information, think about information, and evaluate the results

An emphasis on personality: Learning-style theorists generally believe that learning is the result of a personal, individualized act of thought and feeling.Most learning-style theorists have settled on four basic style they are described in the following four style;

The Mastery style learner absorbs information concretely: Process information sequentially, in a step-by step manner; and judges the value of learning in terms of its clarity and practically. The Understanding style learner focuses more on ideas and abstractions: learns through a process of questioning, and testing; and evaluates learning by standards of logic and the use of evidence. The Self-Expressive style learner looks for image implied in learning: uses feeling and emotions to construct new ideas and products; and judges learning in terms of its potential use in helping others. The Interpersonal style learner, like the mastery learner, focuses on concrete, palpable information; prefers to learn socially; and judges learning in terms of its potential use in helping others.

Definition:

"Learning is the process whereby knowledge is created through the transformation of experience".

Learning is the process through which individuals acquire knowledge, skills, or behaviours. It usually originates from an experience, an event, or a sequence of events that happens on several occasions and help us learn.

Types of learning:

Visual Learning: Visual Learners do well when they use symbols, boxes, charts, and colours in their notes.

Kinesthetic: Kinesthetic learners are more hands-on and enjoy practical education more so than other styles Verbal Learning**:** Verbal learners do well when they recite information out loud. They enjoy writing their own notes and highlighting the key points.

Auditory Learning:Auditory learners develop understanding and memory by hearing and listening.

Physical Learning: Physical learning involves using your body and sense of touch to learn, physical learners learn by doing, touching, moving, building, and are described as "hands-on" learner.

Logical Learning**:** logical learners often learn by asking a lot of questions. They need to understand the whole picture. They learn by classifying. Categorizing and thinking abstractly about patterns and relationship etc.

Social Learning**:** Social learners prefer to learn in groups rather than on own, and like generating ideas by brainstorming with others.

Solitary Learning: Solitary learners tend to be more independent and introspective, spending a lot of time on their own, enjoying their own company.

Need for the study:

The need for studying the impact of learning styles on school students in both smart and traditional classrooms is crucial to understanding how technology influences education outcomes. Smart classrooms, equipped with interactive digital tools, can potentially cater to diverse learning style more effectively by providing a mix of visual, auditory, and kinesthetic resources. However, students in traditional classrooms may lack these resources, potentially affecting their engagement and comprehension based on their learning preferences. Investigating this impact can reveal whether technology-enhanced environments truly support varied learning styles better and, if so, how traditional classrooms can adapt or integrate similar strategies. This study is essential for shaping future educational policies and practices, ensuring all students, regardless of classroom type, receive optimized learning experiences that cater to their unique needs.

REVIEW OF LITERATURE

Ahmed, K Shah, N Shenoy (2014). In an article How Different are students and their learning styles?Concluded that the students in their set up prefer multimodal and more of kinesthetic of learning. To meet their need special teaching technique must be implemented**.** A variation in teaching, learning and examination must be framed.

Hawker AkramAwia (2014). Learning styles and its relationship to teaching styles. It is widely believed that understanding students learning style and preferences can benefit both students and teachers. As students learn in many ways, it appears impossible to change the learning style of each student in the classroom. Instead, teachers might modify their teaching style so as to be more consistent with their students learning style. The study takes a theoretical approach to review relevant literature on the topic and present various view points on matching or mismatching learning styles with teaching styles.

Mohammad Jafri ZainolAbidin (2011) Learning styles and overall academic achievement. Learning styles make an important component in the learning environment. The results here suggest avenues of future research to understand this phenomenon.

METHODOLOGY

Research design:

Ex post facto-evaluative research design is implemented in this study

Sample:

The sample for the study includes school students from XI and XII standard students, from few schools in Pudukkottai District

Sample description:

Purposive sampling technique was used to collect the data. About 50 students were chosen. The average age range of the participants was 15-17 years.

Tools Used:

Learning style scale:

Learning style scale was given by O'Brien (1985). The learning style scale has 30 items have to be marked in the 3 Point scale range from never applies to me, sometimes applies to me, often applies to me. The responses are summed up and the predominated score is interpreted as high/low level of learning style of the respondent. The reliability of many learning style has good internal consistency often with Cronbach's alpha values above 0.70 indicating that the items within a given scale measuring coherent construct. The test retest reliability used in this research.

Objectives:

- To assess the learning style of school students while using smart classrooms
- To assess the learning style of school students while not using smart classrooms.
- To assess the difference between different Learning styles of students studying in with and without Smart classrooms

Hypotheses:

1. There will be a significant difference between the visual learning styles of students studying with and without smart classroom
2. There will be a significant difference between the auditory learning styles of students studying with and without smart classroom
3. There will be a significant difference between the kinesthetic learning styles of students studying with and without smart classroom

Statistics to be employed:

The collected data were coded for statistical analysis. The statistical analysis was performed using IBM statistical package for the social science (SPSS)16.0. Specific statistical analysis like mean, standard deviation, t- test, was employed to analyze the collected quantitative data research.

RESULT AND DISCUSSION

Table No: 1 shows the predominant learning styles of the students studying in both classrooms.

Learning Styles	With smart Classroom	Without smart Classroom
Visual	11	7
Auditory	6	10
Kinesthetic	8	8

Table No:2 shows the Mean, Standard deviation and t-value of students studying in with and without smart classroom and the t value of the visual learning styles.

Visual Learning Style	Mean	SD	t- value
With Smart class room	19.88	2.68	-1.008
Without smart classroom	20.56	2.04	

The above table shows that the t- test value is -1.008 (0.01), where there is no significant difference among the visual learners of with and without smart classroom, thus hypothesis 1 is not accepted.

Table No: 3 shows the Mean, Standard deviation and t-value of students studying in with and without smart classroom and the t value of the auditory learning styles.

Auditory Learning Style	Mean	SD	t- value
With Smart class room	19.56	2.69	0.263
Without smart classroom	19.32	3.68	

The above table shows that the t- test value is 0.263, where there is no significant difference among the auditory learners of with and without smart classroom, thus the hypothesis 2 is not accepted.

Table No: 4 shows the Mean, Standard deviation and t-value of students studying in with and without smart classroom and the t value of the kinesthetic learning styles

Kinesthetic Learning Style	Mean	SD	t- value
With Smart class room	20.04	2.20	0.273
Without smart classroom	19.84	2.92	

The above table shows that the t- test value is 0.273, where there is no significant difference among the kinesthetic learners of with and without smart classroom, thus hypothesis 3 is not accepted.

CONCLUSION

The learning styles of the school students studying in smart classrooms are assessed.

1. The learning styles of the school studentsstudying without smart classrooms are also assessed.
2. Different learning styles such as visual, auditory and kinesthetic learning styles are assessed and found that there is no significant difference between the learning style and the type of classrooms.

SUMMARY

The findings indicated no statistically significant difference between the learning styles of students in smart classrooms and those in traditional classrooms. This suggests that while smart classrooms

integrate technology into teaching, they may not necessarily alter students' fundamental learning preferences. The results highlight the need for further research to determine whether other factors, such as teaching methodologies, student engagement, or cognitive abilities, play a more significant role in shaping learning styles. The study contributes to the ongoing discourse on the effectiveness of technology-driven education and its impact on student learning.

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