

Utilization of Smart Board and Learning Engagement of High School Students

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Abstract:

Due to the chalk dirt and noise of the scratching of nails and chalk at the blackboard, chalkboards or blackboards had been changed through whiteboards. Achievement holds a totally vital region in our tutorial gadget. It is taken into consideration a prime aspect in judging one's total potential and capability. School fulfillment is affected by various factors like learning engagement, have a look at behavior, intelligence and attitudes of learners towards education, socioeconomic repute, and extraordinary aspects of their persona, etc. The findings of the study exposed that the level of skill of smart board utilization and learning engagement found moderate and above. Further skill of smart board utilization and learning engagement not correlated each other.

Keywords: Smart Board, Engagement, Digital Board, Motivation, Commitment.

Introduction

Teaching is incomplete without gaining knowledge of however both pass parallel or aspect with the aid of aspect. Learning results in behavioral change in college students. Teachers are conscious that the taught content in an afternoon, week, or month is remembered later. But something is received well or found out by way of students cannot be retained for a longer length. Memory is a mental construct to signify the occasions going on while we recall and forget about, however complete know-how is gradually gathered. Retention manner trying out what a learner has carried out before both as a pretest or as an instantaneous getting to know check at the quilt of the consultation. Goldstein (1993) indicates retention as knowledge, skill, and abilities a learner can exhibit at some time after instruction is completed.

Smart board is a two-way interaction between the teacher/student and the medium that allows a wide range of participation of the students in the classroom (Singh and Mohamed, 2012). Smart boards being flexible and easy to use device can include a large number of students at the same time (Hache, 2009). Whereas with blackboard, students copy a lesson which is laid out on the board in their notebooks and they carry that notebook everywhere they have to study. Kumar, C. Ashok and Kayalvizhi, R. (2023) demonstrated that the utilization of digital tools is very essential for today's technological world. Smart board lessens the burden of students as they do need not to collect the notes every time. It becomes easy for teachers also they need not to prepare their previous notes again and again for their reference all the time as these are saved inside the board. A teacher can access the material at any time and it never gets erased like with the blackboard (Bleeker, 2010).

There is no need to relocate students to the computer lab and it helps in making students interact with each other, the teacher, and the board itself (Morgan, 2008). Smart boards are whiteboards based on Windows applications and help in presentations and other activities too. Smart boards are easy to use as they just operate like normal computers. Smart boards have replaced traditional boards- white or blackboards from the classroom. Kumar, C. Ashok (2021) stated that today's technology advancements, educational contexts should take advantage of innovative pedagogy and digital rich tools for deeper content exploration,

ease of classroom management, engagement and motivation of students in learning contexts, and generally revolutionizing the learning spaces of old to meet the learning needs of today's students. Many schools or educational institutes have installed digital boards for delivering lessons in the classroom. In traditional boards, physical media like chalk or marker is used to write content over the board whereas on smart boards a stylus or finger touch is used for writing, drawings, or designing.

In schooling, college students' engagement refers to the degree of attention, interest, hobby, optimism, and that student's display whilst they may be studying or being taught, which extends the level of motivation they want to study and progress. In different words, the concept of college students' engagement" is known in a way that gaining knowledge of improves when students are involved or inspired and gaining knowledge of has a tendency to suffer while college students are bored to death or disengaged. Educators have distinct perspectives for student engagement and that they interpret it in a different way from place to place. The word Engagement is used as a synonym for words like commitment, active, attentive, motivation, interest, and effort as defined by Conner (2011).

In many studies, terms like engagement and motivation are used interchangeably. Conner explained these terms are different from each other. Motivation means direction i.e. the reason for behavior engagement is energy or effort in action i.e. the connection between students and the action. For instance, the observable behavior of students like regularity in attending classes, listening attentively to teachers, participating in discussions at the time of teaching, completing work on time, and showing enthusiasm, curiosity, optimism, motivation, or interest in a classroom at the time of teaching. Engagement of student's means motivated to learn, attend classes, and participate in study activities as explained by Bakker et al. (2007).

Hattie and Anderman (2013) defined behavioral engagement as students' behavior concentration of students, initiation, making efforts, following rules interacting with teachers and peers. The factors of engagement play an active role in increasing students' achievement. Teachers may establish classroom routines, use consistent cues, or assign students roles that foster behaviors more conducive to learning. The teacher may clap three times or raise a hand, for example, which signals to students that it's time to stop talking, return to their seats, or begin a new activity. Cognitive Engagement defined by Fredrick et al. (2004) means students' full involvement in school, the efforts made by a student in understanding complex ideas, and his actions performed to attain academic outcomes.

NEED AND SIGNIFICANCE OF THE STUDY

There has been a considerable increase in the number of smart boards installed in schools all over the world. Both students and teachers have positive attitudes toward the use of smart boards in classroom teaching as studied by BECTA, 2007, 2010; Erduran&Tataroglu, 2009; PILTI, 2009; Aydinli&Elaziz, 2010; Yanez & Coyle, 2011; Bicak, 2019 and Mokoena et al., 2019. Pupils are enthusiastic about the interactive whiteboards because of clear visibility and easy access through touch and enjoyment in the lessons (Yanez & Coyle, 2011). Smart board being the need of the hour is highly efficient in maintaining student interest in the classroom as it involves both the audio-visual senses of learners (Seetha, 2013). Smart board has three basic benefits increases in pupil engagement, more effective visual representation, and learning through more pupil participation (Beeland, 2001; Smart, 2006, 2010; Morgan, 2008; Winzenried et al., 2010; Isman et al., 2011; Sonia & Ram, 2018). Smart board has been widely used in educational settings and many studies have been conducted on the impact of technology on education.

From the above information of the proliferation of smart board schools in each government and private faculties, its miles clean that governments and personal faculty management are putting in place clever training ready with smart forums whilst bearing huge monetary burdens. Private faculties but are passing on this financial liability of smart instructions to college students' parents. Moreover, a take a look at of the affects and results of the usage of smart forums on students in phrases of instructional fulfillment, engagement, motivation, and retention of commands, is on the preliminary stage. During the difficult

instances of the pandemic COVID-19 and the exceptional lockdown state of affairs all over the global and in India, colleges, faculties, universities, and other educational institutes were close down for indefinite times. Students have been pressured to stay at home and analyze thru on line lessons and video lectures.

The engagement of students can be categorized in many methods. Intellectual and social engagement of students is viable in the study room for any issue whilst the instructor involves students in a variety of intellectual activities like audio and video lectures of teachers, prescribed assignments for students, or tasks or activities performed for college students to capture their interests or curiosity in a lesson. Emotional engagement of college students will increase while teachers whilst teaching use numerous methods like group coaching, the teamwork of students, curricular or co-curricular activities like debates, poems, speeches, performances on stage, in sports, etc. Are used for promoting emotional and social engagement in a study room that facilitate getting to know of students, minimize their negativity, incapability or underneath self-belief. Emotional engagement means positive or negative reactions of students toward the teachers, peers, and the school defined by Christenson et al. (2012). The behavioral engagement of students is defined by Fredrick et al. (2004) as the involvement of students in academics, social, and extra-curricular activities of the school. Behavioral engagement tells whether a student is fully involved in activities or not.

The gift have a look at desired to explore the effect of clever board educational methodology utilized in lecture rooms i.e. impact of smart board on classroom engagement. Kumar, C. Ashok (2015) mentioned that changing from a traditional 'chalk and talk' method to computer technology used teaching method, cannot simply enrich class room teaching, but can also significantly improve their achievement. It implies that technology used teaching method proves to be more tangible in its effectiveness on achievement than the traditional classroom approach. It seems more practical and is widely acceptable to students. It also reduces individual differences and enables all types of students to perform better. The researcher could also like to investigate the consolation level of instructors and their compatibility while using smart forums in teaching. There might also Some essential elements like the great of e-content, clever board hardware, and teachers' training influencing the use of this technology inside the study room are mentioned in this observe. Other than these issues like identification of demanding situations being confronted by means of clever boards in accessibility, cost-effectiveness, lack of help, technological information, the credibility of sources, and reliability of software and hardware will also be highlighted in this examine. Thus this observe is an effort to look at the position being performed via Smart Boards in Schools and its effectiveness on gaining knowledge of engagement of college students.

Statement of the Problem

The title of the problem is "*Utilization of Smart Board and Learning Engagement of High School Students*".

Operational Definition

Utilization of Smart Board

Smart boards are interactive board connected to the computer and projector for you to project an image, write on it or move the image around by interacting with the board and the users.

Learning Engagement

Coates (2008), defines learning engagement as the active involvement of students in activities and conditions to produce high-quality learning outcomes.

Objectives

1. To examine the level of smart board utilization and learning engagement of high school students.
2. To examine whether there is any statistical difference between male and female high school students with regard to smart board utilization and learning engagement.
3. To examine whether there is any statistical difference among government, aided and self-financing high school students in their smart board utilization and learning engagement.

4. To examine whether there is any statistical difference between rural and urban locale high school students with regard smart board utilization and learning engagement.
5. To examine whether there is any statistical association among the teacher expertize and smart board utilization of high school students.
6. To examine whether there is any statistical relationship between smart board utilization and learning engagement of high school students.

Hypotheses

1. There is no statistical difference between male and female high school students with regard to smart board utilization and learning engagement.
2. There is no statistical difference among government, aided and self-financing high school students in their smart board utilization and learning engagement.
3. There is no statistical difference between rural and urban locale high school students with regard smart board utilization and learning engagement.
4. There is no statistical association among the teacher expertize and smart board utilization of high school students.
5. There is no statistical relationship between smart board utilization and learning engagement of high school students.

Methodology in Brief

a) **Population**

The study was conducted among high school students studying in the Dindigul District.

b) **Sample Size**

This study was confined to 480 high school students, who distributed the questionnaire and collected the data.

c) **Sampling Technique**

In this study, a stratified random sampling technique was used to collect data from the samples.

d) **Tools**

1. Utilization of Smart Board Inventory developed and validated by A. C. Palanisamy and Sivakumar (2021).
2. Learning Engagement Scale developed and validated by Allen & Seaman, 2013.

Data Analysis

A test of the significance of the difference between large independent samples was used for data analysis.

1. Percentage Analysis.
2. 't' Test.
3. ANOVA.
4. Chi-Square Test.
5. Karl Parson Product Moment Correlation.

Analysis

The level of smart board utilization and learning engagement of high school students are as follows;

Table 1
Level of Smart Board Utilization and Learning Engagement of High School Students

	Level					
	Low		Moderate		High	
Smart Board Utilization	98	20.4	289	60.2	93	19.4
Learning Engagement	107	22.3	258	53.7	115	24

As shown in Table 1, 60.2% of high school students showed moderate levels and 22.6% showed high level of skill of smart board utilization. And also the table indicate that 53.7% of high school student’s possessed moderate levels and 24% showed high level of learning engagement.

Null Hypothesis 1

There is no significant difference between male and female high school students with regard smart board utilization and learning engagement.

Table 2

The mean score difference between Male and Female High School Students with regard Smart Board Utilization and Learning Engagement

Variable	Gender	Mean	SD	‘t’ Value	‘p’ Value
Smart Board Utilization	Male	179.079	12.2446	6.304	.000
	Female	171.467	14.0178		
Learning Engagement	Male	177.447	25.5750	-3.029	.003
	Female	184.229	23.4845		

As shown in Table 2, the skill of smart board utilization of male and female high school students exhibited a statistically significant difference in their mean score (Male: 179.079 & Female: 171.467) and the calculated ‘t’ value (6.304). Hence, the null hypothesis that there is no significant difference between male and female high school students in their skill of smart board utilization was rejected. Similarly, the learning engagement of male and female high school students exhibited a statistically significant difference in their mean score (Male: 177.447 & Female: 184.229) and the calculated ‘t’ value (-3.029). Hence, the null hypothesis that there is no significant difference between male and female high school students in their learning engagement was rejected.

Null Hypothesis 2

There is no significant differences among government, aided and self-financing high school students with regard smart board utilization and learning engagement.

Table 3

The mean score difference among Government, Aided and Self-Financing High School Students with regard Smart Board Utilization and Learning Engagement

Variable	Sum of Squares	Mean Squares	Post Hoc ‘α’ Value	‘F’ Vale	‘p’ Value
Smart Board Utilization	494.639	247.320	174.528	1.331	.265
	88629.153	185.805	174.820		
	89123.792		176.747		
Learning Engagement	78.989	39.495	180.076	0.064	.938
	294897.603	618.234	180.707		
	294976.592		181.059		

Table 3, exhibited no significant difference among government, aided, and self-financing high school students in their skill of smart board utilization, as the calculated ‘F’ value (1.331). Hence, the null hypothesis that there is no significant difference between government-aided, and self-financing high school students in their skill of smart board utilization was accepted. Similarly, there no significant difference found among government, aided, and self-financing high school students in their learning engagement, as the

calculated 'F' value (0.064). Hence, the null hypothesis that there is no significant difference between government-aided, and self-financing high school students in their learning engagement was accepted.

Null Hypothesis 3

There is no significant differences between rural and urban locale high school students with regard smart board utilization and learning engagement.

Table 4
Mean Score Difference between Rural and Urban Locale High School Students with regard Smart Board Utilization and Learning Engagement

Variable	Locality	Mean	SD	't' Value	'p' Value
Smart Board Utilization	Rural	174.839	13.6226	-1.191	.234
	Urban	176.364	13.7955		
Learning Engagement	Rural	182.304	24.4122	1.701	.090
	Urban	178.349	25.2911		

As shown in Table 4, the smart board utilization of rural and urban high school students do not differ statistically, as indicated by the calculated 't' value (-1.191). Hence, the null hypothesis that there is no significant difference between rural and urban high school students in terms of their skill of smart board utilization was accepted. Similarly, the learning engagement of rural and urban high school students do not differ statistically, as indicated by the calculated 't' value (1.701). Hence, the null hypothesis that there is no significant difference between rural and urban high school students in terms of their learning engagement was accepted.

Null Hypothesis 4

There is no statistical association among the teacher expertize and smart board utilization of high school students.

Table 5
Association among the Teacher Expertize and Smart Board Utilization of High School Students

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	99.739 ^a	120	.911
Likelihood Ratio	113.632	120	.646
Linear-by-Linear Association	1.554	1	.213
N of Valid Cases	480		

As shown in Table 5, teacher expertize in the smart board utilization not associated with the students skills in utilization of smart board. Because the p-value is greater than our chosen significance level ($\alpha = 0.05$), we do not reject the null hypothesis. Rather, we conclude that there is insufficient evidence to suggest an association between teachers expertize in the smart board utilization and students skills in utilization of smart board.

Null Hypothesis 5

There is no statistical relationship between smart board utilization and learning engagement of high school students.

Table 6
Relationship between Smart Board Utilization and Learning Engagement of High School Students

	Learning Engagement	
Smart Board Utilization	Pearson Correlation	.011
	Sig. (2-tailed)	.815
	N	480

With reference to Table 6, there is no significant relationship skill of smart board utilization and learning engagement, as the calculated ‘ γ ’ value of .011. It indicates that, skill of smart board utilization cannot control the high school students learning engagement. Hence, the stated null hypothesis there is no significant relationship between skills of smart board utilization and learning engagement of high school students was accepted.

Findings

1. The level of high school students smart board utilization skill and learning engagement was moderate and above.
2. There was a statistical difference between male and female high school students with regard to smart board utilization and learning engagement.
3. There was no statistical difference among government, aided and self-financing high school students in their smart board utilization and learning engagement.
4. There was no statistical difference between rural and urban locale high school students with regard smart board utilization and learning engagement.
5. There was no statistical association among the teacher expertize and smart board utilization of high school students.
6. There was no statistical relationship between smart board utilization and learning engagement of high school students.

Conclusion

The uses of smart boards are gaining recognition amongst students and faculties to put in this learning device with a purpose to be at par with the modern international of learning platform. The use of smart board is important as a cutting-edge learning strategies with a view to attain the academic goal of improving and improving conventional educational techniques practiced in school settings. The creation of smart board within the education line has made studying procedure lots less difficult. This new technology has integrated all ranges – primary school, excessive college and better mastering institutions to decorate the teaching and getting to know in easy way.

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