



Artificial Intelligence in Smart Classrooms: An Investigative Learning Process for High School

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ABSTRACT

This study identifies instances of technological advancement where AI was used in an intelligent classroom. A learner is more likely to learn concepts via a visual medium than from a literary one, such as smart classrooms and virtual reality programs. The inability to collaborate in education utilizing AI to create a smart classroom for increasing student learning and developing achievements was one of the new technologies' shortcomings. The idea behind that is to teach the learner through visual materials that are significantly easier for them to understand and retain than text-based lessons. The smart classroom makes decisions about how measurement data and classes of elegant class features can contribute to and lead to implementing training methods for manageable improvement in the act of authentic teaching forcefully. This study's methodology focuses on providing a review of the various types of smart classroom technologies that are now available. The outcome demonstrates the considerable influence and suggests improving additional technologies utilized in smart classrooms. The Smart level demonstrates how 3D symbolism and learning techniques are used to study and understand various concepts. This article offers a thorough analysis of the smart classroom and how it can significantly advance the utilization of technology development approaches.

INTRODUCTION

We need to make every effort to change the way education is delivered now since the era of antiquated classrooms with whiteboards covered with sheets is long gone (Malik, 2018). It's imperative that we comprehend how little training has changed from the days when we told pupils to use a duster to remove dust and writing from surfaces (Tshibalo, 2007; Hargreaves, 1994; Friedman, 2005). In general, students can access more material through visual media in study spaces equipped with laptops and even projectors.

One of the inventions of artificial intelligence is the adoption and use of AI in educational settings, such as smart classrooms (Alex., 2019). To get the message across, the field of intelligent learning coordinates technological advancement and integrates it with instructional techniques. (Alfoudari et al., 2021) discussed in their study the development, it focused on the understanding of classroom technology, reflecting the more beneficial. Its design shows more consideration for the classroom and regular human-PC interaction (Ali, 2020). However, according to (Auliawan & Ong, 2020), The characteristics of a smart classroom also include creativity, infrastructure, pervasive computing, technology-generated awareness, electronic intuitive whiteboard technology, distributed enrollment design, and cutting-edge room service technology. The practical module of the future observation study space is composed of the presence figure, function module layer, and information management layer (Bai & Zhang, 2020). It produces a learning environment that fully emphasizes freedom, growth, and cordial relationships and provides instructors and students with a learning space with better adaptability and quicker service (Dunjko & Briegel, 2018).

(Goldstein & Papert, 1977) Leading operators have focused educational education on existing maintenance trials that challenge culture with AI application development (Huang et al., 2023). ESD entails reconsidering learning settings (both physical and virtual) in light of sustainable advancement, recommending adjustments to the classroom that will increase student engagement, developmental evaluation, and dynamic teaching methods (Kessler, 2018). Promoting a robust and long-lasting smart learning environment is essential. Making an educational environment that justifies the efficient use of resources is a key component of creating smart classrooms.

LITERATURE REVIEW

STATUS OF SMART CLASSROOMS

Digital classrooms in response, this essay explores the connections between smart classrooms and four popular ESD strategies. ESD includes problem-based learning initiatives, case deliberations, re-enactments, and pleasant requests). By differentiating how measurements other than smart classroom function groups, smart classrooms can offer jerry and sharpen the most crucial for the application of technology strategies in real education into workable methods (Liang et al., 2021). Furthermore, (Liu et al., 2019) mentioned According to their research, smart classrooms that integrate different elements of traditional classrooms use unique innovations as false insights everywhere

through other people. Additionally, it is common practice to use AI technology to anticipate learning development (Matskevich, 2019).

Smart Classroom Management with a Pitch

A set of resources that can be utilized to organize and assess data gathered in advanced classes makes up a logical teaching activity. The authors contend that innovative teaching tools can produce effective management of research assignments. We demonstrate how a smart classroom can combine the perfect cloud and multiagent model to provide academic services to intelligent and non-intelligent operators, enabling them to adjust and react to students' teaching and learning needs. We identify the collection of learning analysis activities as administration, which creates a circle of information critique, in order to support the learning process in smart classrooms. Also, we clarify how (Pankratova, 2019).

Visual Medium in Smart Classroom

The visual media offers a variety of creative techniques, such as the use of 3D strategies and videos to implant a notion in the understudies' minds. The intelligence study room also offers a list of resources that can be used for tests, amendments, homework, and tests, in addition to tests and notes on actual components. (Pannu, 2015; Chang & Hsu, 2011; Elyas & Picard, 2010). A Smart class also applauds the advent of tablet computers and high-tech pens in place of traditional writing instruments like paper and ink. In this way, we are witnessing the beginning of a new era of environmental learning. Permitted the offered information to be often gathered from course books, but used the visual technique for the corresponding guarantee's better upkeep. (Geursen et al., 2010). according to Figure 1. poses the question of how contemporary technologies and apps can be used to transform a regular classroom into a new smart classroom.



Figure 1. Smart Class

Instead of using chalk or markers, the relevant focal points were rooted and underlined using laser-based remote controllers or high-tech pens. The information on the screen is saved in frames for future use. It has been demonstrated that using a variety of media for teaching and learning can benefit young people since strategies for visual media promote better data absorption and maintenance (Gilakjani et al., 2012; Goodwin & Kosnik, 2013;

Pannu, 2015). For students who struggle with learning, competent and appropriate classroom education is intended to be produced.

METHODOLOGY

In this study, the smart classroom technology—also known as Smart Classroom—that uses AI in teaching is described. The significance of smart classroom, its characteristics and restrictions, and what smart classroom is in general.

A clever approach to teaching and learning is the Smart Classroom. This includes using a projector to show historical mixed-media introductions on a screen. (Pikhart, 2020). The virtual conference with students in their homes should be conducted by teachers in each classroom using the cloud computing communication channel.

Here is some importance of smart classrooms:

Smart study areas with internet access can provide students with ready access to detailed information on each subject. Teachers can utilize this to thoroughly examine particular subjects, design assessments based on games, and even have visual discussions with students about games to help them comprehend the material (Pingxiao, 2017).

Online component: Rehashing an identical activity won't help pupils understand the lesson, especially if they are seated in the back of a crowded study session (Saini & Goel, 2019; Raman & Mohamed, 2013; Schleischer, 2015).

There are a number of reasons why a student is likely unable to attend class, and this is where online modules play a crucial role.

Interaction: By fostering student advantages and encouraging them to consider various issues based on length, using an advanced structure can help the class become smarter. By creating engaging challenges that put students' abilities to the test, instructors can hold their attention. Low cost of support Apart from the initial cost, the majority of smart classrooms are pretty simple to monitor. Unlike traditional classrooms, they only require occasional cleaning and care, and maintaining them is relatively inexpensive. Innovation: Smart classrooms improve student performance and even inspire others to be more creative. These are all significant factors when it comes to online components, online modules, engagement, affordable assistance, and creativity. Additionally, the container is still utilized by individuals who develop or enhance learning continuity solutions through effective integration and student-friendly design.

FINDING AND DISCUSSION

We discovered significant qualities relating to the teachings of smart classrooms and the interplay of modern communication technology, such as

time-efficient; smart classes ensure productivity as far as exhibiting various themes and subjects. It is because it saves time for drawing and writing on the load up, making students in a comparable class much more accustomed (Agustinasari et al., 2022). Attend to every student's demands; in a study hall, there are people who are changing their perspectives and becoming more in control. While some students believe it is easy to teach using the classical method, others find it challenging. Creates an Interesting Learning Environment; Many kids today find the traditional form of instruction using chalk and slate to be somewhat taxing. Instead, they favor methods of realizing that are visual in nature and keep them confined. Simple Access; A smart classroom allows enrollment at any time; (Purwanto et al., 2023). In any case, there may be times when one has to access and return to notes even while they are not really in the class. Covers up the missed course and is highly beneficial for truants and inattentive students because the teaching materials are stored in the database for subsequent use.

This paper describes many kinds of smart classrooms that already exist and their cognitive and positive AI reliabilities. This study demonstrates how well teachers and students used their cognitive skills when using the Rose classroom's integrated smart classroom. (Semmler & Rose, 2017). Another study used Jasmine classroom (Weischedel et al., 1978), It focuses on smart classroom such as time feedback on smart classroom usage and the effectiveness of teaching methods in AI learning environments. On the other hand, the visual media class discovered that students chose to transform their use into smart classroom facilities and the manner that classmates communicate with one another by analyzing the validity of a survey of 40 distributed components of undergraduate students (WU et al., 2013; Xie et al., 2001).

This study reveals various benefits of smart classrooms as well as drawbacks such insufficient teaching security. A technical flaw or defect may allow a class to be abruptly interrupted due to some inescapable restrictions, which may inevitably lead to an exercise in futility, vitality, and resources. (Yanhua, 2020; Zhang & Chen, 2021). Smart Classes Will Never Be able to replace in-person instruction. There is no substitute for a teacher elaborating on the current ideas through true models, even though a smart class may offer better and more innovative means of teaching (Yoon, 2003; Zhang, 2020). A smart class is normally a little more expensive; yet, because it is a broad invention, it is not very cost-effective. the effects of employing smart classes to improve students' communication skills and learning outcomes. Additionally, the usage of open source technologies and student peer interactions will boost their achievement and self-confidence.

CONCLUSION

One of the most engaging and creative ways to learn is in a smart class. Numerous schools and school administration structures around the country teach and encourage it. Therefore, it is important for parents, teachers, and students of all ages to get familiar with this educational framework. Innovative technologies from the modern day are used for interactive content, effective delivery, and thorough display. Models for distance learning and e-learning have evolved to effectively deliver information to a large number of students.

This study's primary goal was to share prior studies on smart classrooms and their benefits. The study's utilization of several smart classrooms and the degree of student acceptance and use are reviewed in this report. We discovered that the present content strategies for smart classrooms were mostly designed for one type of media. There is a need to design a clear framework, a suitable plan, and programmed switching methods from one Media type to another without losing data. The simple availability of content for smart classrooms is insufficient; the teacher must adopt a teaching style that keeps students asking for more technology. Comparatively, prior surveys that are familiar give a more accurate representation of the understudy understanding in the study hall. Numerous stages have created to assess, consequently, various kinds of tests and schoolwork.

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