



Constructing and Using a Smart Classroom

Dr. Rajendra Kumar Mahto

Assistant Professor

Department Of Information

Technology,

Dr Shayama Prasad Mukherjee

University, Ranchi

Abstract: More students are being admitted, technology is advancing, personal computers are widely available, internet broadband connectivity is available, and instructional materials are rich. This has created a global platform that information and communication technology (ICT) can use to raise standards in the classroom. The use of information, computation, and communication technologies to improve training and education is known as e-learning. Education has become more general in the advanced world, and simplicity is currently valued by society, which makes learning more engaging. Compared to traditional methods, smart classroom methods allow learners to interact in a more engaging way. Technology use improves instruction and learning, as well as enhances the educational system. Through the application of contemporary technologies and methodologies, the system provides students with a high-quality education while also streamlining the learning process and ensuring uniformity in the classroom.

Keywords: Quality education, higher education, enhanced education, smart class system, e-learning

I. INTRODUCTION

An enhanced method of teaching and learning in which teachers communicate and students learn in colleges or other higher education institutions through creative and significant use of technological tools is known as a "smart class." The proper use of technology in the classroom or lab by students or mentors is known as a "smart classroom." Students could watch incredibly powerful audiovisuals and animations to help them learn and comprehend complex ideas and problems. These resources allow us to create engaging learning experiences. For students, which will undoubtedly raise their general achievement. Teachers and other faculty members can quickly assess their students' classroom learning thanks to smart class systems.

In today's cutthroat and international marketplace, the importance of e-learning technology in a variety of functional domains is widely acknowledged. However, there is still much space for improvement in terms of e-learning proficiency among scholars, particularly for those who are still having difficulty acquiring this knowledge in rural areas.

Creating and implementing a framework for a Smart Class approach that uses e-learning tools is crucial. Increasing the value of education in society is crucial for promoting long-lasting learning (Nataliya et al., 2016).

Our educational system urgently needs to do effective work in order to ensure students' futures so they can continue to compete in the labor market. Learning is defined as "knowledge or skills acquired by instruction, study, or experience" by Merriam Webster (<http://www.merriam-webster.com/2016>).

Learning is an ongoing process that involves gaining knowledge and improving our skills through study, practice, experience, and receiving instruction from others. With the aid of eLearning, we can offer remote and rural areas high-quality education.

contemporary technologies such as mobile phones, internet, and satellite (Ahmad and Mehedi 2012).

Learning anything requires a lot of concentration. It is a fact that today's students are very different from those of the past. They have a plethora of information and resources available to them at their fingertips. Their hunger is for encouragement, inspiration, and direction. Eaton, S. E. (2010).

There is an extremely broad range of applications for e-learning. It encompasses communication and computation technologies as well as other contemporary gadgets like interactive television. 2012; Ahmad and Mehedi.

A smart classroom system is completely distinct from the conventional method of teaching that involves writing on blackboards. It is a modular approach created specifically to support educators in meeting new challenges and enhancing the performance and capabilities of their students (www.indiastudychannel.com 2016).

Simply switching out the smart card, among many other actions, allows the system to automatically record the attendance of instructors, faculty, and students. In order to teach students, faculty, and instructors good environmental habits, smart classroom systems should also be environmentally friendly.

The framework offers a Class View and Planner, Rules and Observation, Work Assessment, Sharing of Student and Instructor Screens. All of these difficulties can be solved with the help of the smart classroom system. Additionally, it offers a system model to improve the educational system.

II. REVIEW OF LITERATURE

E-learning is widely accepted as an accessible learning method. This method of instruction is made available online, on laptops, and through wireless mobile handheld devices, enabling learning to take place anywhere, at any time. People, communities, and nations that were previously too far away, either socially or geographically, for other types of educational initiatives can now learn thanks to electronic learning (Traxler, 2009).

The use of readily available information and communication technologies to expedite the learning process is commonly understood as e-learning. E-learning is the blending of online learning with traditional classroom instruction. 2012; Ahmad and Mehedi.

Electronic learning can be seen as a tool for students to obtain knowledge while they are on the go, anywhere at any time, with complete flexibility, rather than as the magic bullet for education. Non-linear learning is facilitated by smart classrooms equipped with interactive whiteboards in two different ways:

Hypertext and hypermedia can be accessed either online or as external files. Secondly, it can be accessed by paging back and forth to review slides pertaining to questions and answers from both faculty and students (Blau, 2011).

More educational institutions throughout the cosmos are moving toward e-learning and mobile learning in order to benefit from what is potentially a ubiquitous quality for learning. A growing corpus of research investigating the potential applications of mobile learning in educational settings has identified a number of important characteristics of mobile learning, including cost-effectiveness, accessibility, flexibility, motivation to learn, convenience, and interaction (Laurillard, 2007).

The manner of instruction determines how well students understand the material. Learning retention rates by type of instruction are explained by Figure 2 of the learning pyramid. The Internet, which offers instant access to a multitude of information in various formats, including text, audio, video, and images, has sufficiently grown up with today's students (Whitepaper Sponsored by: Samsung 2012).

According to Knight et al., there are two types of interactive teaching and learning environments: technical, which involves students physically interacting with electronic devices like laptops, tablets, e-pads, e-readers, and

smartphones, and linear, or traditional, environments where interactions occur between students and faculty as well as between students and their peers (Knight et al., 2004).

While pedagogical interactivity and technical expertise can both promote skill practice permits reflections on the learning process and higher-order thinking (Kennewell et al., 2008).

III. METHODOLOGY

There are four main modules in the structure of the suggested e-learning method. These four components are further broken down into smaller parts that are utilized for email and message sending to parents and students, as well as query processing. They are smart classes, smart cards for schools (smart faculties/schools), and smart cards for students (smart students). A high configuration server and a database are the system's primary parts. Every module is connected. The smart class module is directly connected to smart faculty, smart students, and smart schools.

Smart Class: The initial element consists of a standard classroom outfitted with all the latest technology, including laptops, smartphones, interactive TVs, card readers, facial recognition software, high-definition cameras, and so forth. Every time a faculty member, instructor, or student walks into the classroom, they must present their smart card to the card reader or use the facial recognition technology to verify their identity. This verifies the person's attendance for that specific session. A database and a high configuration server are always connected to a smart classroom. Teachers and faculty in the classroom have access to on-demand content through the server. The contents are available as word document files, PDF files, images, audio, video, and 3-D models. Faculty, staff, and instructors can communicate with students via the system to clarify concepts, answer questions, and address other issues. In the smart class

Instructors or faculty members can log in to their session and begin teaching. There's no need to bring the usual classroom supplies like attendance records, lecture notes, white board markers, and other items. They can look through the topics and subjects and get the meeting started.

The subjects on interactive TVs or monitors can be explained by them. Faculty, students, and smart classes make up the core database tables. The system's architecture is displayed below. .. By offering a variety of learning styles in the classroom and during lab sessions, Smart Class will assist in ensuring that every student in the class is gaining knowledge. The system is useful for controlling students' attention and participation in class instruction. Smart Class will assist in resolving some of the issues teachers encounter in the classroom. Students can readily relate abstract curriculum concepts that are hard for them to comprehend and visualize by using an interactive, three-dimensional (three-dimensional) multimedia approach.

Conclusion

A crucial tool for helping faculty, students, and teaching assistants overcome the difficulties they face on a daily basis in the lab and classroom is the Smart Class system, which also raises student engagement and performance in the classroom. It helps with both the substantial use of technology and practical work.

References

- I. Dr. Mehedi Masud and Ahmad Tasnim Siddiqui (2012). International Journal of Computer Science Issues, Vol. 9 (4), "An E-learning System for Quality Education"
- II. (2007) D. Laurillard. In N. Pachler (Ed.), *Mobile learning: Towards a research agenda*, Pedagogical forms of mobile learning: Framing research questions. Vol. 1, pp. 33–54, London: WLE Centre, Institute of Education.
 - A. T. Rashid, J.-H. Valk, and L. Elder (2010). "An Examination of Asian Data on the Use of Mobile Devices to Enhance Academic Results," *International Review of Research in Open and Distance Learning*, vol.11, no.1, pp.117–140.

- III. Identification of Student Attitudes and Learning Styles in Distance Education, A. Valenta, D. Therriault, M. Dieter, R. Mrtek, *Journal of Asynchronous Learning Networks*, vol. 5, no. 2, pp. 111-127, 2001.
- A. Chan and M. J. W. Lee (2007). *Cut Down Turkish Online Journal of Distance Education, TOJDE*, vol. 8, no. 1, pp. 85–105, "The Effects of Isolation and Promoting Inclusivity for Distance Learners through Podcasting."
- IV. "Designing an Intelligent Mobile Learning Tool for Grammar Learning (i-MoL)" was presented by Munir Shuib, Amelia Abdullah, and Siti Norbaya Azizazan at the Gunasegaran Universiti Sains Malaysia in Penang, Malaysia.
- V. Dr. P. Karthikeyan and A. S. Sathishkumar (2016). *IJSR-International Journal of Scientific Research*, volume 3, issue 8, pages 446–449, "Emerging Technology of Smart Class Teaching in School Education- A Literature Review."
- VI. Denis Ushakov, Olga Gnedkova, and Nataliya Osipova (2016). "Mobile Education Technologies for English Language Acquisition," *ICTERI*, Kyiv, Ukraine
- VII. Blau (2011). Smart teaching in a "smart classroom": Evaluating professional development for teachers in order to integrate Interactive WhiteBoards in classrooms. S. Eden, A. Caspi, and Y. Eshet-Alkalai (Eds.), *Learning in the Age of Technology* Open University of Israel, Ra'anana, Israel, pp. 63–74.
- VIII. Jones, S., Beauchamp, G., Tanner, H., and Kennewell, S. (2008). examining how interactive technology is used to carry out interactive instruction. *Computer Assisted Learning Journal*, 24, 61–73.
- IX. Pennant, J., Piggott, J., and Knight, P. (2004). What does it mean to incorporate the interactive whiteboard into your regular math class? *Micromath*, 20(1-2), 14–16.

