

SHIKSHAKENDRA – The Epitome Of Educational Elegance

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Abstract - In the world of computers, artificial intelligence (AI) is a revolutionary field of computer science that aims to create intelligent systems that can mimic cognitive functions similar to those of humans and make predictions, recommendations, and decisions that affect real or virtual environments. AI is intended to facilitate problem-solving. Machine learning, neural networks, and computer vision are just a few of the many methods and tools that are included in artificial intelligence (AI). With the use of these technologies, machines are able to process enormous volumes of data and identify patterns—often rather accurately. Particular objectives and the application of specific techniques, such as reasoning, knowledge representation, planning, learning, and perception, are the focal points of the many subfields of AI study. Researchers in artificial intelligence (AI) have adopted and combined a variety of approaches to solve problems, such as formal logic, artificial neural networks, search and mathematical optimization, and approaches based on statistics, probability, and economics. Philosophy, neurology, and many other disciplines are also incorporated. Subproblems have been identified within the generation problem of making or imitating intelligence.

Key Words: Learning, Chatbot, Physical disabled students, Problem-solving, Planning, Learning, Subscription, Courses, Downloads.

1.INTRODUCTION

A web-based platform or software application called a Shikshakendra Learning Management System (LMS) is made to make it easier to administer, track, record, and distribute training or educational materials. LMS are frequently used to streamline learning and development processes in companies, organizations, and educational institutions. An LMS is primarily used to consolidate and

automate many parts of training and learning, increasing its effectiveness and accessibility. These systems offer capabilities for collaboration, communication, and performance monitoring in addition to a framework for managing various content kinds, including multimedia resources, courses, and evaluations. It guarantees safe data transmission and storage, offers distinct authentication for administrators, educators, and learners, and offers a variety of themes that may be customized.

AI examines learner data, including past performance, to suggest resources, courses, and learning paths that are specifically tailored to each learner as part of a personalized learning platform. By keeping track of analysis and grading, the learning management system forecasts student performance and facilitates progress monitoring. By arranging their sessions, teachers and students may efficiently manage their time. Real-time feedback and surveys will be made available for any necessary educational enhancements. Additionally, it offers the ability to download content for offline learning. There are several advantages to implementing a Shikshakendra learning management system (LMS).

It offers a single platform for organizing and keeping track of instructional materials. This streamlines the learning process by making it simpler for students to access materials and exams in one place. Students can access instructional materials from anywhere at any time thanks to this system. This flexibility is especially helpful for people who work remotely, have hectic schedules, or work for companies where teams are spread out geographically.

Administrative processes including grading, tracking learner progress, and enrolling are automated. Teachers and administrators have less administrative work to do

and can save time thanks to this automation. It offers real-time monitoring and reporting on the performance, engagement, and advancement of learners.

Instructors and administrators can use this data to pinpoint potential improvement areas and make well-informed decisions regarding the efficacy of the training program.

2. Body of Paper

Our system is made to support both non-technical and technical learning. In order to provide individualized learning routes, courses, and resources, it evaluates individual learner data, including historical performance. By keeping up with analysis and a grading system that aids in progress tracking, our system forecasts student performance. This system Shikshakendra has a chatbot that can gather information on user interactions and learning styles. This information may be utilized to pinpoint areas where learners might be having difficulty or where the content could require some enhancement.

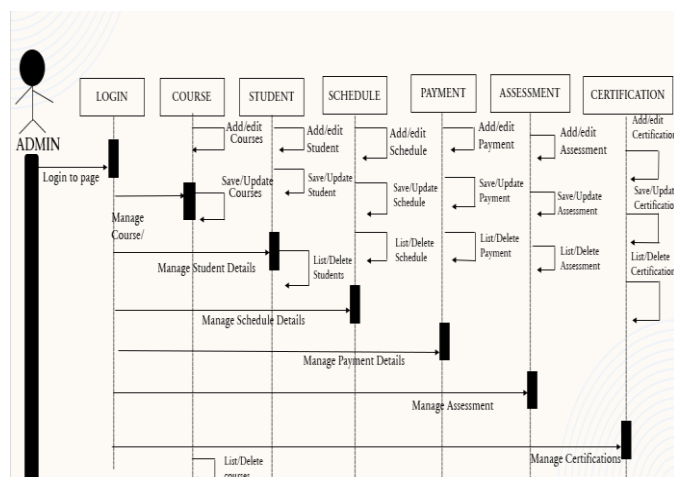
Our Shikshakendra system operates on two student platforms. One for students without dyslexia (physical disabilities) and another for students with dyslexia. It offers both typical and visually impaired students a text-to-speech option. Both pupils with dysgraphia and typical students can use the speech-to-text capability in our system. The purpose of our system is to facilitate the creation, storage, and organization of educational content on a single platform by offering a centralized platform for all learning materials, including courses and quizzes.

Shikshakendra wants to provide educators and students with an intuitive user interface. Through message boards and discussion boards, it facilitates interaction and cooperation between students and teachers. With the help of this platform, administrators may create new accounts, assign roles and permissions, and keep track of user information. This system is made to provide learners with instructional materials in an organized and approachable way. For students with physical disabilities, our Shikshakendra offers reservations for course access; therefore, the validity of the physical disability certificate is a prerequisite for making a reservation. We give students access to the subscription section for advanced features.

With a subscription, students can download the PDF for offline learning, access limitless daily practice problems (DPP) to gauge their proficiency, track their performances with the grading feature, have their certifications verified by a reputable platform and receive a serial number that allows them to access their certification at any time, and receive a student referral code during the subscription process.

Students who unsubscribe can view a limited number of slides that include the course material. The quiz will have a maximum of questions [5], and certifications won't be validated.

Figure -1: Sequence Diagram



3. RELATED WORK

AI is defined and described in two different ways by Chassignol et al. AI is described as both a field and a theory. According to their definition, artificial intelligence (AI) is a branch of computer science whose goals are to solve many cognitive issues that are frequently connected to human intelligence, like learning, problem-solving, and pattern recognition, and then adapting [11]. According to Chassignol et al., artificial intelligence (AI) is a theoretical framework that directs the creation and application of computer systems with human-like abilities, particularly intelligence and the capacity to carry out tasks requiring human intelligence, such as speech recognition, visual perception, language translation, and decision-making. [11].

Similar components or characteristics of AI are highlighted by other researchers and in other studies when defining AI. AI was described by Sharma et al. as computers that can mimic human thought processes [13] (p.1). In a similar vein, Pokrivcakova defined and described artificial intelligence (AI) with reference to the education sector. She noted that AI is the outcome of decades of research and development that brought together system designers, data scientists, product designers, statisticians, linguists, cognitive scientists, psychologists, education experts, and many others to develop education systems with a certain level of intelligence and the capacity to perform various functions, such as assisting educators and students in acquiring flexible and knowledge-based skills for a world that is constantly changing [14].

According to the author, artificial intelligence (AI) makes use of enhanced software and program skills, such as algorithmic machine learning, to provide computers the capacity to carry out a variety of jobs that call for human-like intellect and the

capacity to adjust to their immediate surroundings [14]. Similar findings are reported by Wartman et al. [17], who defined

artificial intelligence as the capacity of computers and other devices to emulate human thought processes and behavior. According to these definitions and descriptions, artificial intelligence generally refers to the creation of robots with a certain degree of intelligence and the capacity to carry out tasks that are similar to those of humans, such as cognitive processes, learning, making decisions, and environment adaptation. As a result, certain traits and principles stand out as essential to AI. From this definition and explanation of AI, intelligence—or the machine's capacity to exhibit some degree of intelligence and carry out a variety of tasks requiring human-like abilities—emerges as a crucial feature of the technology. Recently, there has been a lot of research done on the application of AI and machine learning to mobile devices. The goal is to improve the quality of computing and open up new possibilities for applications like virtual reality, speech recognition, face unlock, and natural language translation. However, advanced training and learning in machine learning demand massive computational power. Some platforms for efficient computational operation were suggested as a solution to this problem.

Using their GPU processors, Qualcomm unveiled the Snapdragon Neural Processing Engine in 2016 to speed up the execution of neural networks. The HiAI neural network operating platform was proposed by HiSilicon. It should be mentioned that the Android Neural Networks API was created to rapidly run mobile machine learning models [37]. This API decreases network complexity and latency, which is very useful for mobile devices. SqueezeNet, MobileNet, and ShuffleNet are well-developed learning networks linked to artificial intelligence for mobile devices [38]. The advancement of artificial intelligence in mobile devices has raised the bar for mobile education, enabling more interactive and individualized learning while saving students time and effort.

For example, since AI can connect students to the virtual classroom, virtual reality makes learning easier to do outside of the traditional learning environment, creating a global classroom. More precisely, it is clear that AI has been used in education, particularly in administration and teaching, and as a result has affected or impacted students' learning within the framework and narrative put forth by Chassignol et al., which also forms the study's scope.

AI has been used in educational institutions in a variety of ways, including the automation of administrative tasks and processes, curriculum and content development, instruction, and student learning processes, according to an analysis of the academic sources chosen for the study.

Virtual reality (VR) and three-dimensional (3-D) technology are two other aspects of AI in instructions that Mikropoulos and Natsis discuss in their paper. They note that VR presents

enormous potential for the educational process, integrating 3-D technology with simulation since it allows for simulation and gives students a chance to learn by doing.

As noted by the United Nations Educational, Scientific, and Cultural Organization (UNESCO), it is clear that artificial intelligence (AI) has impacted many spheres of society, including education, as seen by the discussion of instructional strategies, tools, and techniques [16]. Changes in the general environment have prompted the implementation of AI in education in other domains or methods, such as learning and administration.

In their study, Kahraman, Sagioglu, and Colak talked about the development and application of artificial intelligence (AI) in education in the form of adaptive and intelligent Web-based educational systems (AIWBES), which are quickly taking the place of the rudimentary just-plop-it-on-the-Web method of using the Internet and the World Wide Web [18]. AIWBES is the process of incorporating technology and AI concepts into web-based learning environments to enhance the learning process for students.

Since Knewton offers a platform for student feedback based on interactions on the platforms, they relieve the workload of instructors. Similar opinions are present in various articles and studies that address systems that simplify administrative procedures.

According to Rus et al., intelligent tutoring systems (ITSs) may grade assignments and give students feedback on their work, among other things [12]. Working using ITS, instructors can more effectively complete their fundamental duties of guiding and instructing students to succeed in their studies as well as a variety of administrative activities. The arguments and conclusions presented by Mikropoulos and Natsis support those of these research; utilizing AI in education has increased productivity and efficacy when it comes to administrative duties like assigning grades to pupils [15].

Knewton uses machine learning algorithms to determine a student's learning style and then uses that information to tailor course materials or content in real-time to meet the needs of the individual student [11]. Similar platforms include Cerego, Immersive Reader, and CALL. These, when combined with other platforms, have the potential to enhance students' educational experiences at all levels of the system, from early childhood education to undergraduate and graduate study at universities [11], [14].

Pokrivcakova further said that the usage of chatbots and AI integration enhance students' learning experiences since they make use of machine learning algorithms and provide content that is tailored to each student's learning requirements and aptitudes [14].

The author also emphasizes how AI is being used in education to enhance student experiences through intelligent tutoring programs, adaptive education systems, and machine translation tools. There are various methods that artificial intelligence (AI) makes sure that content is tailored to the requirements.

4. MATERIALS AND METHODOLOGY

The purpose of this research is to learn more about how instructors and students perceive the effects of artificial intelligence (AI) systems on learner-instructor interaction. Educators and students are more aware of the value of distance education and new experiences gained from recent online courses. Our goal was to investigate areas where AI systems favorably impact learner-instructor interaction and where further attention is needed, rather than evaluating specific AI technology

Communication

When it comes to themes directly relevant to learning contents, such as assignments, tests, conversations, and instructional materials, queries and replies between students and the instructor are referred to as communication in online learning environments. While educators and students anticipate that AI systems will improve the amount and caliber of communication between them, there is a chance that they will lead to misunderstandings and problems with accountability.

Support

Support in online learning settings is the instructor's administration of the lesson for the students, including giving them comments, clarifications, or suggestions that are directly relevant to the material being taught (Kang & Im, 2013). Instructors and students anticipate that AI systems will benefit them by enabling just-in-time, personalized help for students at scale, but they also anticipate that excessive support may hurt students' agency and sense of ownership over their education.

Quiz

Within learning management systems (LMS), quizzes are an essential tool for raising student engagement, evaluating learning objectives, and fostering productive learning environments. With the use of quizzes, teachers can assess their student's understanding of the content being covered in class and monitor their development as learners. Through the use of quizzes to assess learning outcomes, teachers can identify areas in which students might benefit from more guidance or explanation. After completing a quiz, students can receive quick feedback from LMS systems, which helps to reinforce learning by giving them insight into their performance. By assisting students in identifying their areas of strength and weakness, this feedback allows for more focused study sessions and encourages self-directed learning.

5. CONCLUSION

The educational landscape has been drastically altered by the Learning Management System (LMS). It provides unparalleled access to information and enables individualized learning experiences from any location at any time without requiring physical presence. It guarantees data security as well. It offers

a platform for pupils who are physically challenged as well as normal students. Learning management systems (LMS) will be crucial in creating a society where education has no boundaries and where people all over the world are encouraged to pursue lifelong learning and skill development. It offers insightful statistics and data on the engagement, involvement, and performance of learners. By enabling companies to make well-informed decisions, this data helps them enhance their training initiatives and overall learning objectives over time. Instructors and administrators have less work to do when administrative procedures like enrollment, progress tracking, and reporting are automated. They can concentrate on providing high-quality content and attending to the specific needs of each learner as a result of this streamlining.

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