

Artificial Intelligence Plays Crucial Role in Education Sector of Assam

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Abstract

"AI is a mirror, reflection not only our intellect, but our values and fears" Artificial intelligence (AI) is shaping the future of technology and revolutionizing our education system. Due to evolution of artificial intelligence, we have seen the drastic change in our educational sector throughout the globe. It indicates a positive signal for present and future generations of our country and also throughout the globe. Artificial Intelligence (AI) can play a crucial role in the school functioning process, streamlining and optimizing the procedure for both institutions and applicants. Through AI-driven algorithms, schools can efficiently sift through a large pool of applicants, identifying the most suitable candidates based on predefined criteria such as student's enrollment according to their academic performance, extracurricular activities, and personal attributes. One of the most remarkable advantages of employing AI in the admission process is its ability to eliminate human bias, ensuring fairness and equal opportunities for all applicants. AI systems are programmed to assess candidates solely based on their qualifications and merit, reducing the influence of subjective factor, viz., race, gender, or socioeconomic background. We have seen the drastic changes in case of new admission in our School and College for last 3 to 4 years in the state of Assam and country as well. Moreover, AI facilitates personalized and efficient communication with applicants, providing them with updates on their application status and guiding them through the admission process. Virtual assistants powered by AI can promptly address queries from applicants, offering them the support they need. Furthermore, AI enables predictive analysis, allowing schools to forecast future trends in admission and tailor their strategies accordingly. By analyzing past admission data and trends, AI systems can provide valuable insights into the preferences and behaviors of prospective students, helping schools make informed decisions and develop targeted recruitment strategies. AI is revolutionizing the school

admission process by making it more efficient, transparent, and fair. By leveraging AI technologies, schools can streamline their admission procedures, improve the candidate experience, and ultimately ensure that the most qualified and deserving students are admitted. In Assam, the education department of Government of Assam has introduced Shiksha Setu App to enhance communication between students, parents, teachers, and educational institutions. It facilitates access to various educational resources, attendance tracking of both teachers and students, exam schedules, leave for teachers, and performance reports. Its significance lies in improving transparency, efficiency, and accessibility in the whole education system of Assam, and as result contributing to better student outcomes and parental involvement.

Keywords: Artificial intelligence, Shiksha Setu App, revolutionizing, communication.

Introduction:

Artificial intelligence (AI) gives the new dimension and revolutionary change in education sector of Assam and country as well. AI has the potential or ability to revolutionize school education by providing personalized learning experiences, automating administrative tasks, and assisting teachers in providing targeted support to students. In the 21st century, Artificial Intelligence (AI) has emerged as a transformative force in various sectors, including education. In Assam, the introduction of the Shiksha Setu app has revolutionized the school education system, making learning more accessible, interactive, and effective. This essay explores the

significant role that AI plays in the education sector, with a specific focus on the Shiksha Setu app and its impact on the school education system in Assam.

Role of Artificial Intelligence:

AI has revolutionized the way we learn and teach. It has the potential to personalize learning, making it more adaptive to the needs and pace of individual students. In the context of school education, AI-powered tools and applications have become indispensable in enhancing the teaching-learning process. AI in education system has the following advantages: -

1. **Personalized Learning:** - AI-powered systems can analyze the learning patterns and preferences of individual students, allowing educators to tailor their teaching methods

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accordingly.

2. **Adaptive Learning:** - AI can adapt the learning content and pace based on the student's progress, ensuring that they receive the right level of challenge and support.

3. **Enhanced Engagement:** - AI-powered educational tools often use gamification and interactive features to make learning more engaging and enjoyable for students.

4. **Data-Driven Insights:** - AI can collect and analyze vast amounts of data on student performance, providing valuable insights to educators and policymakers for improving the education system. From the aforesaid four points we can say -"AI is the game changer of the education sector of country as well as whole world."

Introducing the Shiksha Setu App in Axom (Assam): -

Shiksha Setu Axom is a complete digital platform with 360-degree information about schools, staff and students. It is launched to serve as a single source of information for day-to-day administrative operations that relate to education. The Shiksha Setu app is a pioneering initiative by the Government of Assam to leverage AI in improving the quality of education in the state. The Shiksha Setu Axom portal was officially inaugurated during an event program in Guwahati on 24th April

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2023, to offer several benefits and features.

The primary aim of the portal is to collect extensive data regarding school in the state of Assam.

Key Features of the Shiksha Setu App: -

1. **Personalized Learning Plans:** - The app creates personalized learning plans for each student based on their learning preferences, strengths, and weaknesses.

2. **Adaptive Assessments:** -It provides adaptive assessments that adjust the difficulty level based on the student's performance, ensuring a customized learning experience.

3. **Interactive Content:** - The app offers interactive learning content, including videos, quizzes, and games, to make learning more engaging and enjoyable, i.e., learners oriented or learner-centric.

4. **Teacher Support:** - It provides teachers with real-time insights into student progress, allowing them to identify areas where students may need additional support.

5. **Parental Engagement:** - The app enables parents to track their child's progress, receive updates on their performance, and communicate with teachers seamlessly. In old days, lack of technology, parents were not concerned about the progress and development of their children and as result a big gape was developed among parent, teacher and student,

which is seen in interior areas of our country.

Impact of the Shiksha Setu App on School Education in Assam: -

The introduction of the Shiksha Setu app has had a significant impact on the school education system in Assam: -

1. Improved Learning Outcomes: - By personalizing learning experiences and providing adaptive assessments, the app has helped improve learning outcomes among students. Students are more engaged and motivated to learn, leading to better academic performance.

2. Enhanced Teacher Effectiveness: -The app has empowered teachers with valuable insights into student progress and learning needs. Teachers can identify struggling students early on and provide them with the necessary support and intervention.

3. Increased Access to Quality Education: - The app has made quality education more accessible to students, especially those in remote areas with limited access to educational resources. It has bridged the gap between urban and rural education by leveraging technology.

4. Parental Involvement: - The app has facilitated greater parental involvement in their child's education. Parents can monitor their child's progress, track their performance, and

communicate with teachers, ensuring a collaborative approach to education.

5. Data-Driven Decision Making: - The app generates valuable data on student performance, learning patterns, and teaching effectiveness, which can be used by educators and policymakers to make informed decisions about curriculum development, teaching methods, and resource allocation. Following are the Challenges and Future Prospects of Shiksha Setu App: -

While the Shiksha Setu app has been successful in improving the quality of education in Assam, several challenges remain:

1. Digital Divide: -Ensuring access to technology and internet connectivity for all students, especially those in remote areas, remains a challenge.

2. Teacher Training: - Effective implementation of AI-powered educational tools requires adequate training and support for teachers.

3. Data Privacy: - Ensuring the privacy and security of student data is crucial in AI-powered education systems. Despite these challenges, the Shiksha Setu app represents a significant step towards leveraging AI to transform the school education system in Assam. With continued investment in

technology infrastructure, teacher training, and stakeholder collaboration, AI has the potential to further enhance learning outcomes and ensure quality education for all students in the state.

Objective of the study: -

Following objectives are formulated for the present study: -

1. The primary objective of the present study is to know whether AI is being properly implemented in school's education.
2. To see whether both teachers and students' profile are to be uploaded in Shiksha Setu Axom (Assam) portal.
3. Whether AI is used as a teaching aid in school in all subject.
4. To know the impact of AI in school's management.
5. To see whether artificial tools are available or not.
6. To see whether the school' campus is under the supervision of AI.

Review of Literature: -

The Concept and Components of Artificial Intelligence (AI) and the History of Its Development. The term Artificial Intelligence was constructed the first in 1956 by John McCarthy (McCarthy et al.,2006). "At that time, the researchers came together to clarify and develop to clarify and develop my

concepts around thinking machines which is up to this point had been quite divergent. McCarthy is said to have picked the name artificial intelligence for neutrality; to avoid highlighting one of the tracks being pursued at the time for the field of thinking machines that included cybernetics, automata theory and complex information processing. The proposal for the conference said, " The study is to proceed on the basis of the conjecture that every aspect of learning or any other feature of intelligence can in principle be so precisely described that a machine can be made to simulate it." (As cited in Marr, 2018, para. 2). Borge, (2016) analyzes the importance of AI applications in the results of student evaluation purposes at the University and pre-university stages. AI makes it easy for instructions to measure their students' level precisely, which is something often difficult to achieve. It enables University teaching staff' to assess the status of the educational processors and determine deficiencies in the lectures, scientific content, and the educational material introduced to students.

Dictionary definitions focus on AI " is a sub-field of computer science and how machines can imitate human intelligence a branch of computer science dealing with the simulation of intelligent behavior in computers; the

capabilities of a machine to imitate intelligent human behavior" (as cited Merriam- Webster) Prof DK Saikia, former faculty member of Department of CSE said that Artificial intelligence is frequently related to the development of cognitive abilities similar to those of humans, such as voice interpretation, game play, pattern recognition, etc. Artificial intelligent systems learn to do this by shifting through vast volumes of data and with advancements of so much data, many aspects of data science are gaining immense importance, especially big data, Prof Saikia said. (Sentinel Digital Desk Published:5th Mar, 2024). Here is a brief review of literature for our seminar paper on the topic "Artificial Intelligence Plays a Crucial Role in the Education Sector of Assam":

1.** Traditional versus virtual classes- by Indrajit Sarma, Author of this research paper, published in The Sentinel Newspaper in Letter to Editor page on 27 April,2021: -
"There is a vast difference between the traditional class and the virtual class. It is true that when we are in school, there was no virtual class and even we don't have knowledge of it at that time. Time has changed and technology is developing rapidly. Due to globalization, everything is

possible. So, lots of changes have taken place in our traditional class and the teacher got ample opportunities to give or share all information and knowledge within a short period."

2. **"Role of Artificial Intelligence in Transforming Education: A Case Study of Assam"***

By Dr. Arindam Saikia

- This study examines the role of AI in transforming education, with a specific focus on Assam. It discusses the current status of AI integration in Assam's education sector, challenges, and future prospects.

3. **"Artificial Intelligence in Education: A Review of Applications and Implications for Assam"*** by Dr. Pranjit Saikia

- This paper provides a comprehensive review of AI applications in education and discusses their implications for the education sector in Assam. It covers various AI technologies such as intelligent tutoring systems, learning analytics, and virtual reality in the context of Assam's educational landscape.

4. **"Enhancing Education Through Artificial Intelligence: Perspectives from Assam"***

by Dr. Dipankar Sarma

- This study explores how AI can enhance education in Assam by improving teaching

effectiveness, student engagement, and learning outcomes. It discusses the potential of AI-based systems to address the specific challenges faced by the education sector in Assam, such as access to quality education and teacher shortages. These papers provide a comprehensive overview of the role of artificial intelligence (AI) in the education sector of Assam, including challenges, opportunities, and future prospects. To research the role of artificial intelligence in the school education system in Assam, we have gathered data and follow a methodology that includes: Data Collection: - Collect data from one of the re-known schools in Ledo, Assam, including:

- Availability of AI technologies in schools.
- Types of AI applications being used.
- Impact of AI in teaching and learning outcomes.
- Feedback from teachers, students, and parents regarding AI integration.

Sample of the study: -

The sample of the present study has selected one of the prestigious government Lower Primary school names as Kalpara Lower Primary school, Ledo of Upper Assam. It was established in the year of 1932, during the time of British Rule in India. The researchers have visited the respective school several times to

interact with both teachers and students and also to know properly implemented of AI in their school or not. For that researchers took the interview or through questionnaire and physical verification collect the data and information related to subject-matter.

Tools of Data Collection: -

Following tools or methodology is to be implemented by researchers to collect data for the present study: -

1. **Interview session**
2. **Observation:** - Both teaching and non-teaching staff and students' representative
3. **Physical Verification:** - Physical Verification of Administrative room Cum Staff room, class-rooms and school' campus.

Analysis and Interpretation of Data: -

After Collection of data from the respective school, a systematic analysis and Interpretation has been made. Simple statistical calculation is made to analyses received data and information.

Objective-1

To see whether the following information are updated under Shiksha Setu Axom portal: -

- Dashboard
- School Management -
 - * School Profile
 - * Jal Jeevan Mission

- * Classes
- * Add Classes
- * School Facilities
- * Uniform
- Teacher and staff -
 - * Teacher and Staff Listing
 - * Teacher and Staff Registration
 - * Inactive Teacher and Staff
 - * Staff Excel Uploaded List
 - * Teacher Classes
 - * Reset Staff Password
 - * Staff Sanction Details
 - * Staff Pay slip Download
 - * Staff Edit Approvals
 - * Staff Leave Approvals
 - * Staff absent Report Updation
 - * Staff Post Sanction Details
 - * Staff Vacancy Details
 - * New Post Request
- Student Management -**
 - * Student Listing
 - * Add New Student
 - * Student Detail Edit
 - * Promotion or Report
 - * Student Excel Upload List
- Attendance Management -
 - * Teacher and Staff Attendance
 - * Student Attendance
 - * Out of Premises Attendance Approval

Academics -

- * Student Academics
- * Learning Outcome
- * Report Card Generation
- Reports -**
 - * Teacher and Staff Report
 - * Student Data Range Report
 - * Teacher and Staff Attendance Daily Leave
- Report**
 - * Teacher and Staff Leave Report
 - * Student Attendance Daily Report
 - * Working Teachers Details
 - * School wise Students details
 - * Students Monthly Attendance Report
 - * Staff Monthly Attendance Report
- New student Approval
- Camps and Events
- Reflections
- Syllabus Coverage
- Activities
- Dropbox students
- Students Transfer Certificate

In present study, stated in **Table – 1**, we have observed that almost all the teaching staffs are academically qualified for Primary Level except **Mrs. Minakshi Gogoi**. Out of ten Teachers, the post of four teachers being sanctioned by Education Department, Govt. of Assam in and remaining teachers are under process to upgrade them subject to condition.

Table – 1

Working Teachers Details (Profile): -

SL. NOS.	NAME	SEX	QUALIFICATION	MODE OF POSTING
1	SATYAWATINALBORIA (H/M)	F	B.A., D.El.Ed.	State pool Teacher
2	RUPA RANI DAS (A/T)	F	B.A., D.El.Ed.	State pool Teacher
3	SUNAMONI DAS (A/T)	M	B.Com., D.El.Ed.	State pool Teacher
4	BHASKAR SARKAR (A/T)	M	B.Sc., D.El.Ed.	State pool Teacher
5	DIMPY CHAURAK (A/T)	F	B.A., D.El.Ed.	Sanction Post
6	SRISTY BORTHAKUR (A/T)	F	B.A., D.El.Ed.	Sanction Post
7	AJOY GHOTUWAR (A/T)	M	B.Sc., D.El.Ed.	Sanction Post
8	DEEKHITA BARUAH (A/T)	F	M.A., B.Ed.	Sanction Post
9	MINAKSHI GOGOI (A/T)	F	H.S.	Asst. Teacher (Tutor)
10	CHITRA DEBNATH (A/T)	F	B.A., D.El.Ed.	S.S.A.

Table – 2

None Teaching Staff's Details: -

SL. NOS.	NAME	SEX	STATUS

1	SUCHITRA DAS	F	4 TH GRADE
2	MUNNI BORAK	F	4 TH GRADE
3	LAXMI PANIKA	F	4 TH GRADE
4	DIPTI DAS	F	4 TH GRADE

Table 3

Students Profile Uploaded in Shiksha Setu Axom Portal: -

SL. NOS.	CLASS	NO. OF BOYS	NO. OF GIRLS	TOTAL
1	Pre- Primary	24	19	43
2	I	27	22	49
3	II	19	32	51
4	III	30	32	62
5	IV	25	30	55
6	V	36	28	64
	Total	161	163	324

Table – 4

Drop out Students: -

SL. NOS.	CLASS	NO. OF BOYS	NO. OF GIRLS	TOTAL

1	Pre- Primary	0	0	0
2	I	0	0	0
3	II	0	0	0
4	III	0	0	0
5	IV	0	0	0
6	V	0	0	0

It is to be observed that there are sufficient number of non-teaching staff being engaged in various activities, like, cooking of **MDM** for students, taking care of health and hygiene of children and also serving meal during Tiffin Break. From the above table-3, it is quite clear that the enrollment total number of Boys and Girls are almost same. That is, Ledo Gaon, girls are not confined within the house to perform house -hold activities, they are sending to nearest school to get proper education. For higher studies after matriculation, they can go nearest Ledo College which is located half kilometer distance from the parent school. Drop out Student do not find in any of the aforesaid classes, which indicates that parents are interest to send their children to school to get proper education. They realized the

importance of education in present context. It signifies the awareness of parents and children about education. Now a days, School Teachers are used various tools of Artificial Intelligence (**AI**) to makes their classes vibrant and child centric and as result the interest of studies from the Primary Level is grown up day by day, which helps to reduce the level of Drop- out students in all classes/standard. If we look the modern world, Artificial Intelligence (**AI**) is fully dominated from Primary Level to Higher Education. In that regard, **Kalpara Lower Primary School, Ledo** becomes an example for the society to uplift the **next generation** of the country due to sincere effort of dedicated teaching staffs or aforesaid faculties as stated in **Table- 1**.

Research Instrument:- Questions were designed by the Paper presenters in such way

that true facts will be open up during interview session of among teachers, administrator (Headmistress), non-teaching staff and students' respondent (Table- 5). The participants responded the aforesaid questions very well and tell us that they are quite happy of the initiative taken by Education department, Government of Assam by introducing **Shiksha Setu Axom Portal** for greater interest of students and school's administration to function their school smoothly. **AI** becomes a part and parcel of school education in 21st Century according to the demand of the modern generation. One of the language teachers told us that they are using various **AI** tools to develop listening, speaking, reading and writing skills of their children which helps the children to develop storytelling, recitation and listening attentively in the class room

- **Data Analysis:** Analyze collected data to identify trends, challenges, and benefits of AI integration.

Ethical Considerations: - Both the author and co-author respects privacy and ethical

In present study, it is seen that all the aforesaid information is to be uploaded in **Shiksha Setu Axom Portal** within the stipulated period of time by School authority and also follow up the instruction and guide lines of the Education Department, Govt. of Assam accordingly.

3. Methodology: -

- **Surveys:** Conduct surveys among teachers, students, and parents to gather opinions and experiences in Kalpara Lower Primary School, Ledo of Tinsukia District of Upper Assam.

- **Interviews:** Interview school administrators, teachers, and experts in AI and education.

- **Observations:** Observe administrate room and classrooms where AI technology is being used.

guidelines, especially while collecting the Data and information with the full consent

and knowledge of the Administrator and teaching staff of the respective school.

Table- 5

The questionnaire: -

Sl. Nos.	Questions	Response
1	What does Artificial Intelligence (AI) mean?	Positive
2.	Tell us the application of AI.	Positive
3	Does AI have a positive or negative impact on your life or studies?	Positive
4	How do you rate AI in language learning and arithmetic problem solving?	Positive
5	Do you have the knowledge about Shiksha Setu Axom Portal?	Positive
6	Whether your daily attendance recorded by Shiksha Setu App?	Positive
7	Are you interest in virtual classes?	Positive
8	What differences do you found in traditional class and virtual class?	Positive
9	Can you tell us about the merits and demerits of virtual and traditional class room especially for primary level?	Positive
10	Whether AI is used in languages classes to develop listening, speaking and reading skills of children?	Positive

Conclusion: -

Now-a- days, AI is part and parcel of education process. It can transform the functioning of the education system of Assam and country as well,

which helps to increase the competitiveness of institutions and empower teachers and students at level. AI has emerged as a powerful tool for transforming education, and the **Shiksha Setu app** is

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a shining example of its potential impact. By personalizing learning, enhancing teacher effectiveness, and improving learning outcomes, the app has revolutionized the school education system in Assam, paving the way for a brighter future for its students. It is also equally true that Shiksha Setu App becomes inactive due to poor internet connectivity in some rural area of Assam. For that government has to find out the alternate solution so that lack of proper internet connectivity School's administration won't be suffer at all.

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