



Impact of AI on E-Governance: A Special Reference to Academic Bank of Credits

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Abstract

The study looks into how Artificial Intelligence(AI) can make the Academic Bank of Credits(ABC) platform more accessible, transparent and user-friendly for students studying in various graduate and post-graduate colleges across Davangere - including those in medical, dental and engineering programs (Dwivedi et al., 2021; OECD. 2021). The research is based on two key objectives. The first is to examine how AI tools can improve students experience with the ABC platform, especially by making it easier to use, more efficient in updating academic records in real time and smoother in handling credit transfers between institutions (Zawacki-Richter et al., 2019; Holmes et al., 2019). The second objective is to offer practical suggestions for improving how AI is used in the system. To do this, the study gathers and analyses feedback from students to understand what works and what needs to change. Insights focus on areas such as system security, ease of scaling and better student engagement. The findings show that AI technologies like smart data systems, interactive interfaces and automated responses can greatly improve how the ABC platform operates (Luckin et al., 2016). The study ends by offering thoughtful policy recommendations to help educators and decision-makers implement AI in ways that align with the National Education Policy(NEP) - 2020, ensuring the Academic Bank of Credits platform serves all students better now and in the future (Government of India, 2020).

Keywords: *AI awareness, E-Governance systems, Academic Bank of Credits(ABC), Academic Administration, student's participation, NEP 2020, Davangere*

1. Introduction

1.1 Background

Artificial Intelligence(AI) is revolutionizing the landscape of governance worldwide. By enabling intelligent automation, predictive analytics and real-time decision-making, AI empowers governments to deliver services more efficiently and with greater transparency (Dwivedi et al., 2021). E-governance refers to the use of electronic systems that provide public services and greatly benefited from the integration of AI technologies (Basu, 2004). These include chatbots for citizen support, AI - driven data processing for faster decision-making and smart systems that reduce human error and enhance service delivery (OECD, 2021).

In the education sector, AI-powered E-governance tools streamline operations such as admissions, grading and credit management (Holmes et al., 2019; Luckin et al., 2016; Al-Besher & Kumar, 2022). In India, one of the most ambitious e-governance initiatives in education is the Academic Bank of Credits(ABC) - a system launched by the University Grants Commission(UGC) to digitally manage academic credits across institutions (Ministry of Education, 2020; University Grants Commission [UGC], 2021). ABC allows students to store, transfer and accumulate academic credits digitally across various higher education institutions. With AI integration, the system becomes more adaptive, secure and efficient in handling large volumes of student data and credit transactions (OECD, 2021; Dwivedi et al., 2021).

E-Governance is transforming public administration by making services more accessible and transparent (Basu, 2004; Venkatesh & Bala, 2008). One of the recent developments in India's educational e-governance is the Academic Bank of Credits(ABC) - a digital credit repository enabling seamless academic credit transfers (Ministry of Education, 2020; UGC, 2021).

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1.2 Academic Bank of Credits(ABC)

The National Education Policy 2020 indicates that the Academic Bank of Credits(ABC) will deposit credits granted by accredited institutions into student's accounts (Ministry of Education, 2020). This will enable them to study freely across the nation's higher education institutions and facilitate students to earn a degree, diploma, postgraduate diploma, or other credential through an appropriate Credit. The transfer of academic credits from one program to another is facilitated through a structured mechanism (UGC, 2021). Under this system, only recognized academic institutions are permitted to submit students credit information to ensure its authenticity and accuracy. ABC serves as a central repository, where credits submitted by these authorized institutions are securely stored and verified (UGC, 2021). Importantly, students themselves cannot directly upload or share their credits; the process must be institution-led to maintain academic integrity (UGC, 2021).

ABC permit academic institutions to lodge and preserve the confidentiality of the credits. It protects student credit's secrecy and validity. The computerized style of operation facilitates quicker credit recognition. ABC is advantageous since it permits pupils to enter and depart repeatedly (Ministry of Education, 2020). It aids in preserving student credit for up to seven years. Following both the source and the destination educational institution approval, ABC uploads credentials through a single portal. Credits may only be uploaded by accredited educational institutions, increasing transparency and fostering a more adaptable approach to curriculum development (UGC, 2021).

Student's earned credits will be put into their ABC 'Academic Account.' When a student transfers to another university, his or her accrued credits are transferred to the new institution's account. Credits can be transferred from one university to another for use in a different program offered by the same or a different institution. The credit will be irrevocably deducted from the individual student's ABC 'Academic Account' once it is redeemed for the aforementioned award. The process of assigning multiple credits to qualifications, degree programs, or individual educational components. Credits are awarded to entire qualifications or programs in accordance with the participating universities or autonomous institutions of the ABC scheme.

1.3 Relevance of the Research to Davangere's Students and Educational Landscape

Davangere, situated in the heart of Karnataka, has emerged as a significant educational hub, catering to a vast student population across various disciplines. With a balanced mix of professional colleges and general degree institutions, it has a large and diverse student population, making it ideal for a study focused on educational policy implementation and digital academic systems, namely Academic Bank of Credits(ABC).

According to data from Karnataka Higher Education Council (2023), Davangere hosts over 120 higher educational institutions, including 2 Medical colleges, 2 Dental colleges, 5 Engineering colleges, Multiple Arts, Science and Commerce colleges affiliated with Davangere University. These institutions collectively cater to over 40,000+ students annually, spanning undergraduate, postgraduate and doctoral programs. A significant number of students are from rural backgrounds, which makes accessibility and ease of navigation in academic platforms such as ABC critically important.

The ABC Platform is Crucial in Davangere's Context because its initiative is progressive, its success depends heavily on digital readiness and institutional support, especially in tier-2 cities like Davangere. Here's where AI comes in, as many students face digital navigation challenges while using platforms like ABC due to unfamiliar interfaces, language barriers and lack of technical guidance. This research is relevant as it aims to evaluate how AI can bridge these digital gaps, enhance transparency and accessibility of academic records for local students and provide policy-level recommendations that are rooted in student feedback from Davangere institutions.

1.4 Concept of AI Integration in E-governance

E-governance is more than just a government website on the Internet. The strategic objective of e-governance is to support and simplify governance for all parties; government, citizens and businesses(Basu, S. 2004). Intelligent automation, decision-making assistance and customized services are introduced when Artificial Intelligence(AI) is integrated into e-governance systems (Dwivedi et al., 2021; OECD, 2021). ABC is a project under India's National Education Policy(NEP) 2020 that stands to gain a great deal from AI-driven change in the educational sector (Ministry of Education, 2020).

2. Literature Review

2.1 AI in E-Governance

The use of AI in e-governance lessens administration and enhances decision-making and service delivery. Many studies indicate the applicability of AI in data analytics, automation, predictive modelling and overall enhancement of governance effectiveness (Prasad, R.S. 2018; Dwivedi et al., 2021).

Artificial Intelligence(AI) has had a revolutionary impact on e-governance in terms of the provision of public services. The AI technologies that include natural language processing, machine learning and computer vision

allow the systems in the government to be more efficient and effective (Dwivedi et al., 2021; OECD, 2021). They replace human labour in operations like data entry, citizen inquiries and resource allocation, thereby cutting on human error and operational expenses. Several countries have AI-based systems that monitor the health of people, manage infrastructure and enhance the effectiveness of law enforcement (OECD, 2021; World Bank, 2016). In India, AI-driven platforms are automating taxation processes, transport services and administrative decision-making in general (NITI Aayog, 2018). The implementation of AI has resulted in real-time handling of the data, where the services provided to people are becoming responsive and more citizen-oriented (Dwivedi et al., 2021).. Moreover, AI promotes transparency and accountability in the process of government as it provides insightful data. This will translate into the making of better policies and timely intervention in issues concerning the public. The power of prediction by AI can also be used to prevent management risks in the government.

2.2 Academic Bank of Credits and AI

It is ground breaking initiative designed at growing student academic mobility and flexibility. It allows learners to accumulate, transfer and redeem credits across higher education institutions. The system's efficiency is increased by the use of AI, which ensures seamless credit transfer, verifies data and fraud detection in real time. AI algorithms help to verify the authenticity of credits and student records, thereby minimizing manual errors and administrative delays (Holmes et al, 2019). Moreover, AI-enabled dashboards provide stakeholders with insights into enrolment trends, academic performance and dropout risks. These insights support better decision-making by institutions and policymakers (Luckin et al., 2016; OECD, 2021). By incorporating natural language interfaces and automated chatbots, AI simplifies the user experience for students. Despite these advantages, the full potential of AI in ABC is yet to be realized due to limited infrastructure and digital literacy (UNESCO, 2021; World Bank, 2020). Nevertheless, ongoing improvements in AI technology are expected to further advance the efficiency and accessibility of the ABC platform.

ABC emphasizes its potential for flexibility and credit portability. AI can automate credit verification and fraud detection, reducing administrative workload.

2.3 Gaps in Research

Although there is a growing body of research on AI in e-governance, there are few studies that specifically address how AI integrates with the Academic Bank of Credits(ABC). Majority of current research specifically in tier-2 and tier-3 cities tends to concentrate on the theoretical advantages of ABC without exploring its practical application (UNESCO, 2021). Furthermore, there is a scarcity of empirical research on how students and educational institutions use the system. It is crucial to comprehend challenges at the grassroots level in areas such as Davangere, where educational variety is prevalent. There aren't many studies assessing how institutions are to use AI tools or the infrastructure issues they encounter (NITI Aayog, 2018). Additionally, not enough research has been done on students' knowledge and confidence in AI-powered technologies (Holmes et al., 2019). The relationship between the practical difficulties and the technological benefits of AI in Indian academic environments is static.

Additionally, not enough research has been done on students' knowledge and confidence in AI-powered technologies. There is very little study on how AI's practical challenges and technological benefits impact Indian academics. By concentrating on the viewpoints of students and institutions, current research attempts to bridge these gaps. It will add unique perspectives to the current discussion on AI and Indian educational governance. Few studies focus on the practical implications of AI in ABC, particularly in smaller educational hubs like Davangere. This study aims to bridge that gap by analyzing student experiences and institutional challenges.

3. Objectives and Possible Research Implications of the Study

The research objective is to determine the extent of student's knowledge regarding the integration of Artificial Intelligence (AI) in the Academic Bank of Credits(ABC) system. It also seeks to discover how AI tools could enhance the operational effectiveness and transparency of the ABC system. Another key objective is to detect the primary challenges and limitations associated with the integration of AI into the ABC system, especially within educational institutions. Lastly, the study examines the potential of AI to improve student academic mobility through the ABC framework.

4. Aims and Hypotheses

Understanding how artificial intelligence might improve the efficiency of e-governance in education through the Academic Bank of Credits(ABC) program is the primary goal of the study.

This study's main aims are:

1. *To assess how AI can improve ABC's accessibility and transparency:* This goal evaluate how AI tools help improve the platform design, make credit transfers smoother and allow real-time updates.
2. *To offer suggestions for policies that will improve the application of AI:* This goal collects opinions and experiences from students and institutions to suggest ways AI can make the ABC system more secure, scalable and engaging. These suggestions can help teachers and policymakers improve how the platform works.

5. Research Design

This qualitative study is based on a participatory evaluation approach conducted by the author, focusing on student perspectives regarding integration of AI into Academic Bank of Credits(ABC) system. Although qualitative in nature, the study employed a structured questionnaire designed in Google Forms, following the principles of quantitative survey methods.

The questionnaire was created to collect data relevant to the study's objectives, including students knowledge of the ABC system, their views on AI's role in improving its effectiveness and transparency, perceived challenges of AI integration and potential of AI to enhance student empowerment, credit portability and academic mobility. The survey also assessed the perceived value and reliability of AI-integrated ABC systems.

The Google Form survey was distributed online between April 25, 2025 and May 09, 2025. Survey link has been shared via WhatsApp groups, email and college communication platforms, targeting undergraduate and postgraduate students across various colleges in Davangere. A brief introduction to the study's purpose and assurance of confidentiality and voluntary participation were included on the first page of the form.

On average, the survey took about 6 minutes to complete. The structured questionnaire included both closed-ended and short-answer questions designed to capture demographic details and student perceptions.

A total of 158 students aged 20 years and above participated in the study. The sample was designed to ensure demographic representation based on age, gender, course of study and institutional background. Responses were collected evenly from students enrolled in graduation and post-graduation programs across both urban and rural colleges in the district.

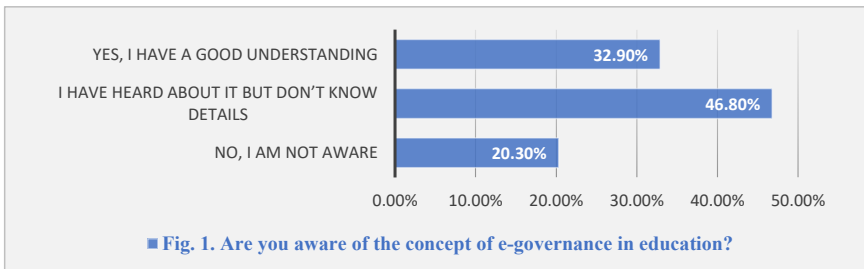
The data collected through the Google Form was automatically recorded and organized using Google Sheets, facilitating smooth analysis for interpretation and discussion.

6. Data Analysis

The responses collected through the Google Form were automatically saved in Google Sheets. The data was then organized for analysis. To understand the overall patterns, descriptive statistics such as percentages and bar charts were used. These helped in presenting information about students age, gender and educational background, as well as their opinions on AI integration in the ABC system.

Interpretative analysis was used for the open-ended responses. This helped in identifying key thoughts, ideas and concerns shared by the students, giving deeper insight into their perceptions and experiences related to AI in the ABC system.

6.1 Student's participation in general awareness about AI and e-governance



Analysing the provided data reveals significant insights into public awareness and understanding of e-governance. Fig. 1. indicate that 20.3% of respondents are unaware of e-governance, 46.8% have heard of it but lack detailed knowledge and 32.9% possess a good understanding. The findings show that this distribution underscores a substantial awareness gap, which is a common challenge in developing countries. Many students have less knowledge of e-governance; hence awareness campaigns are crucial before implementing such initiatives.

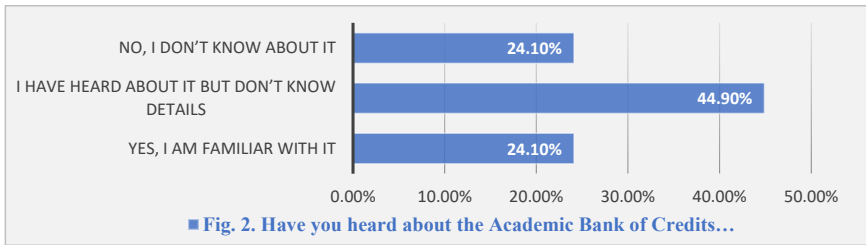


Fig. 2. data reveals that 31% of respondents are unaware of Academic Bank of Credits(ABC), 44.9% have heard of it but lack detailed knowledge and only 24.1% are familiar with it. This indicates a significant awareness gap regarding ABC, critical component of India's NEP 2020 aimed at enhancing academic flexibility and credit mobility. The low familiarity rate suggests that despite policy initiatives, dissemination and understanding of ABC among stakeholders remain limited.

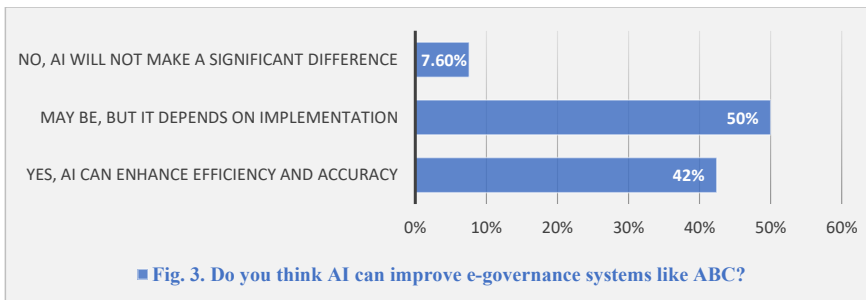


Fig. 3. indicates that 7.6% of respondents believe AI will not significantly impact e-governance systems, notably Academic Bank of Credits(ABC), 50% assert that its effectiveness depends on implementation and 42.4% believe AI can enhance efficiency and accuracy. This distribution reflects a cautious optimism toward AI integration in e-governance, emphasizing that successful outcomes hinge on thoughtful execution. Research supports this perspective, highlighting that AI can streamline government services, improve accuracy and enhance citizen engagement when implemented effectively.

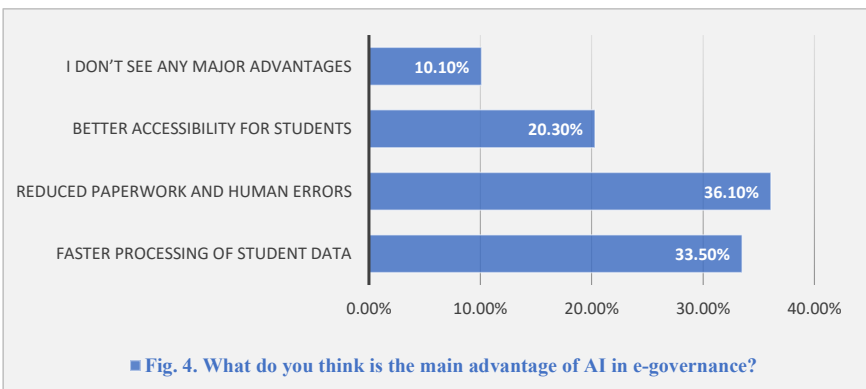


Fig. 4. survey data indicates that 10.1% of students perceive no major advantages of AI in e-governance, while 20.3% highlight improved accessibility, 33.5% emphasize faster processing of student data and 36.1% note reduced paperwork and human errors. These findings underscore a growing recognition of AI's potential to streamline administrative processes and enhance data accuracy in educational governance. Large volumes of student data may be processed effectively by AI-driven systems, enabling prompt decision-making and

individualized educational support. By offering specialized knowledge and services, AI tools can close the digital gap in terms of accessibility and advance inclusion in education.

The relatively lower usage of online portals like ABC indicates a potential gap in student engagement with centralized digital platforms. To enhance the adoption of digital academic services, institutions should focus on improving the user experience of online portals and increasing awareness through targeted communication strategies.

6.2 Student’s participation in awareness about AI in Academic Bank of Credits System

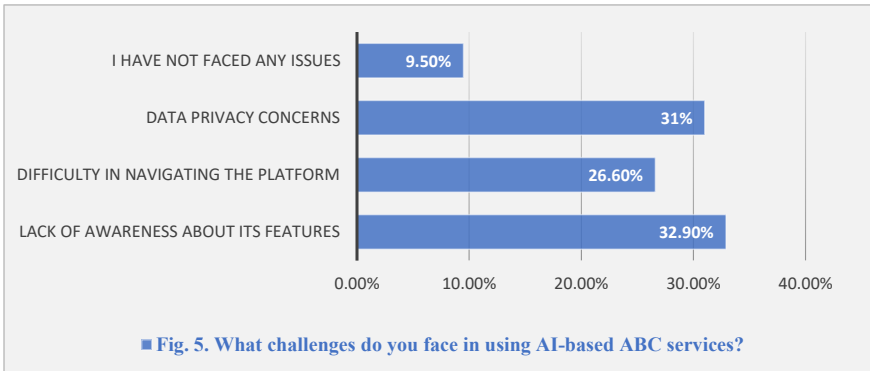


Fig. 5. Survey data reveals that 32.9% of students face challenges due to a lack of awareness about the features of AI-based Academic Bank of Credits(ABC) services, 26.6% experience difficulty navigating the platform, 31% express concerns regarding data privacy and only 9.5% report no issues. This highlights significant barriers to effective utilization of AI-driven academic services. The lack of awareness suggests a need for comprehensive orientation programs and user education to familiarize students with the functionalities and benefits of the ABC system. Navigational difficulties point to potential usability issues, emphasizing the importance of user-centred design and intuitive interfaces to enhance user experience. Data privacy concerns are particularly noteworthy as AI systems often process sensitive student data that needs to be maintained as per the privacy regulations. This helps in effective use of AI - based effective use of AI - based academic platforms.

This study emphasizes how student’s opinions about AI-supported learning platforms are greatly influenced by elements like institutional support and technological self-efficacy. Research indicates that students in higher education usually see generative AI technologies as favourable due to their advantages, while they also have reservations regarding their integration and usefulness. It is crucial for educational institutions to provide training and resources, ensuring that students can effectively utilize these platforms.

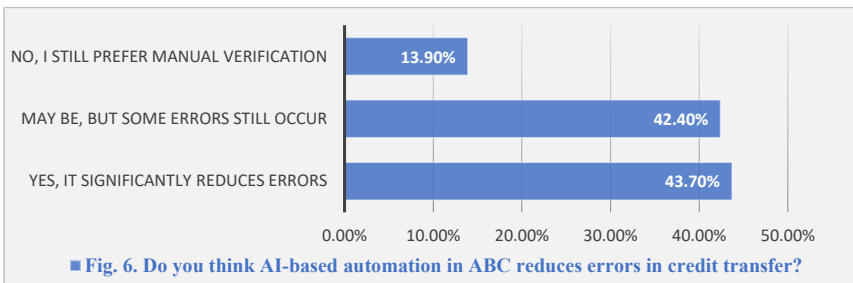


Fig. 6. survey data shows that 43.7% of students believe AI-based automation in the Academic Bank of Credits(ABC) significantly reduces errors in credit transfer, 42.4% think some errors may still occur and 13.9% prefer manual verification. This reflects a general confidence in AI’s ability to enhance accuracy, while also acknowledging potential residual issues. AI-driven systems have been shown to streamline credit transfer processes, reducing administrative burdens and minimizing errors. However, concerns about data privacy and necessity for human oversight persist, emphasizing the importance of transparent and secure AI implementations. For addressing such concerns, institutions should make sure robust data governance and provide clear

communication about AI processes to build trust among users. Balancing automation with human oversight can optimize the benefits of AI while mitigating its limitations.

6.3 Student's participation for deriving recommendations and improvements

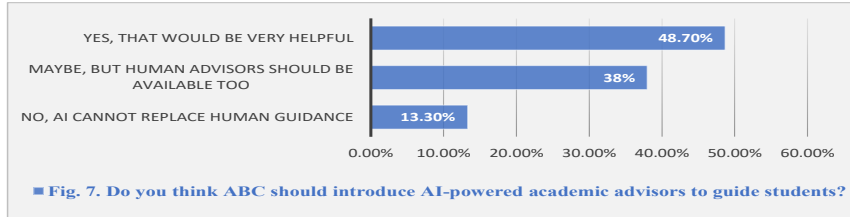


Fig. 7. Data shows that 48.7% of students believe AI-powered academic advisors would be highly beneficial, 38% support their use alongside human advisors and 13.3% feel AI cannot replace human guidance. This suggests a strong interest in AI-driven advising tools, provided they complement rather than replace human interaction. Research supports this perspective, highlighting that AI systems can enhance personalization, improve decision-making and increase retention rates when integrated thoughtfully. However, students value the empathy and nuanced understanding that human advisors offer, indicating that a hybrid model combining AI efficiency with human support may be most effective. Therefore, institutions should consider implementing AI-powered advising tools that augment human advisors, ensuring balanced strategy that influences technological advancements although sustaining essential human connections.

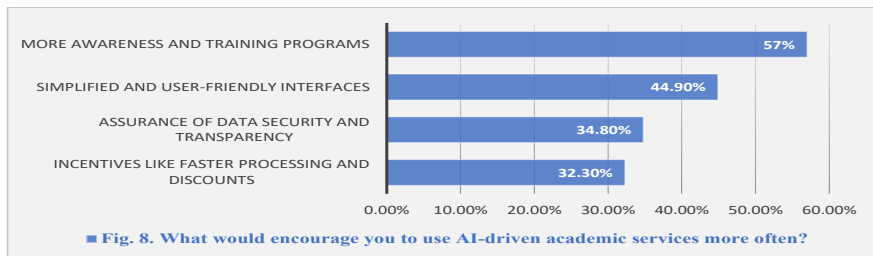


Fig. 8. Survey findings reveal that 57% of students believe awareness and training programs would encourage more use of AI-driven academic services, followed by 44.9% favouring user-friendly interfaces, 34.8% emphasizing data security and transparency and 32.3% supporting incentives like faster processing. This indicates that improving digital literacy, simplifying user experience and ensuring data protection are critical for boosting adoption. Research supports these insights, highlighting that AI acceptance in education grows when users feel confident, secure and see clear benefits (Panorama Education, AI Literacy – Wikipedia). Institutions should prioritize targeted awareness programs, transparent data policies and streamlined systems to foster trust and usability, ultimately enhancing student engagement with AI in academia.

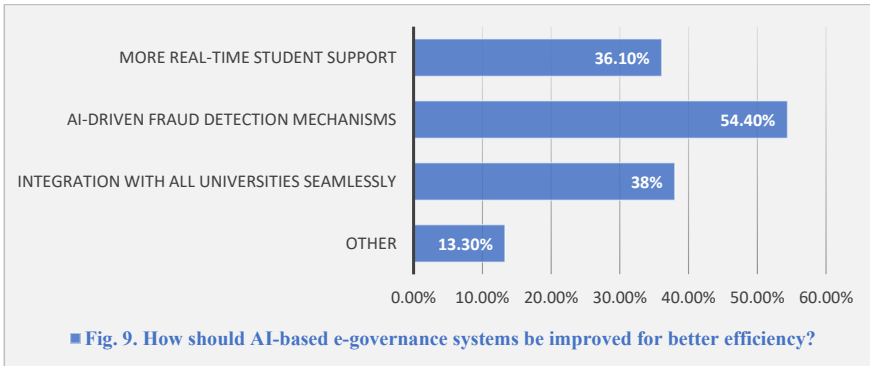


Fig. 9. Survey findings indicate that 54.4% of students advocate for AI-driven fraud detection mechanisms to enhance the efficiency of e-governance systems in higher education, 38% emphasize the need for seamless integration across universities, 36.1% suggest the provision of real-time student support and 13.3% propose other improvements. The emphasis on AI-powered fraud detection in leveraging artificial intelligence to proactively identify and mitigate fraudulent activities, thereby safeguarding institutional integrity and resources. Furthermore, the call for seamless integration across universities underscores the importance of interoperable systems that facilitate efficient data sharing and administrative processes, as exemplified by initiatives like the SAMARTH e-governance platform in India. The demand for real-time student support highlights the necessity for responsive and accessible services that address student needs promptly, enhancing the overall user experience.

7. Results and Discussion

The results from the survey and interviews show different aspects of how students understand and feel about AI-based e-governance systems, especially Academic Bank of Credits(ABC). Many students are either not aware of these systems or only have a little knowledge about them (Fig. 1 & Fig. 2). This shows that there is an urgent need to create awareness and educate students so they can use digital platforms properly. Even though the National Education Policy(NEP) 2020 says that ABC may help make education more flexible, it won't work well unless students and other users understand and support it.

Fig. 3 and Fig. 4 show that students are somewhat hopeful about the role of AI in improving services in education. Around 42.4% believe AI can make systems more accurate and efficient, while 50% say it depends on how it is used. Students also mentioned that AI can help reduce paperwork and speed up processes, which matches what other international studies have found. However, students are not using ABC much, showing that the system must be made easier and more accessible.

Fig. 5 and Fig. 6 highlight the challenges students face. 32.9% say they don't know enough about the system, 26.6% face problems in using it and 31% are worried about data privacy. These problems show that the design and communication about the platform need improvement. To fix this, we need better training, a more user-friendly design and strong data privacy measures. While 43.7% of students trust AI to reduce mistakes in credit transfers, many still want human staff to check the process, showing the importance of combining AI with human oversight.

Similarly, Fig. 7 shows that many students are okay with AI-powered academic advisors, but 38% prefer a mix of AI and human advisors, which supports idea of AI-human collaboration in education.

To increase student use of these tools (Fig. 8), students suggest more awareness programs and training (57%), simpler platforms (44.9%), better data security (34.8%) and rewards or incentives (32.3%). This matches studies that show people are more likely to use technology when it is useful, easy to use and safe.

Lastly, Fig. 9 shows that students want AI to be used for fraud detection (54.4%), easy coordination between colleges (38%) and real-time help and support (36.1%). These requests show that students want systems that are reliable, fast and trustworthy. If these recommendations are followed in future policies and platform design, AI tools can truly improve how higher education is managed by making it more transparent, accessible and efficient.

8. Conclusion and Recommendations

The study highlights a growing but still uneven awareness among students regarding e-governance tools, namely the Academic Bank of Credits(ABC) and role of Artificial Intelligence in Academic Administration. While a majority of students recognize AI's potential to reduce errors, personalize educational pathways and enhance

service efficiency, concerns about usability, data privacy, over-reliance on technology and lack of human interaction persist. The findings also reveal a demand for better awareness programs and technical support to overcome challenges such as platform navigation difficulties and insufficient understanding of AI features. Students show cautious optimism about the future of AI in academic services, provided there is transparency, ethical oversight and a balanced integration with human advisors and systems. Overall, the study underscores the need for a student-centric approach in designing and deploying AI-driven governance tools in higher education.

Policy Recommendation 1: Improve AI literacy among students through workshops and training programs.

Policy Recommendation 2: Strengthen cybersecurity measures in ABC to protect student data.

Policy Recommendation 3: Develop an AI-integrated interface for seamless ABC management across institutions.

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