Empowering Students to Embrace AI Tools for Academic Excellence: A Special Focus on Government Degree College, Kuppam

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Abstract

The rural English graduates need technology enabled learning not as a luxury,but as a bridge to equity, and employability .Many rural English graduates have strong theoretical knowledge but limited exposure to digital platforms and research tools. Technology enabled learning helps them to compete on equal footing with urban counterparts by providing access to the same quality resources courses and learning environments.

This study examines the level of awareness, digital literacy, and adoption of AI tools among First-year Degree students of Government Degree College Kuppam . Primary data was collected from students across Arts, Science, and Commerce streams, the study analyses patterns of digital literacy, extent of AI tool adoption, and disciplinary variations. The findings reveal a strong association between digital literacy levels and the effective use of AI tools for academic purposes. The study highlights the need for structured institutional interventions to empower students, particularly those from rural backgrounds and the urgency to effectively embrace AI tools for achieving academic excellence.The study is limited to the First year Degree students.

Keywords: Artificial Intelligence, Digital Literacy, Academic Excellence, Higher Education, Rural Students

Introduction

Artificial Intelligence (AI) has emerged as a powerful catalyst in redefining the teaching–learning process in higher education. AI-based tools such as intelligent tutoring systems, content generation platforms, plagiarism checkers, language enhancement tools, and data analysis applications have enabled students to learn more efficiently and independently. In this context of study connected to Government Degree College Kuppam, especially those learning in rural and semi-urban populations, the integration of AI tools holds immense potential for bridging learning gaps and improving academic outcomes.

Government Degree College, Kuppam, caters largely to students from rural and economically disadvantaged backgrounds. While students show growing interest in digital technologies, disparities in digital literacy and access continue to affect the effective use of

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AI tools. This study attempts to assess the extent to which students at GDC, Kuppam, are empowered to embrace AI tools for academic excellence, with special emphasis on digital literacy and disciplinary differences.

Statement of the Problem

Despite the increasing availability of AI-based academic tools, their adoption among students of Government Degree College, Kuppam, remains uneven. Factors such as limited digital literacy, inadequate access to devices, lack of formal training, and disciplinary differences hinder optimal utilization of AI tools. Understanding these challenges is essential for designing strategies that promote inclusive and effective integration of AI in academic practices.

Objectives of the Study

1. To assess the level of digital literacy among first-year degree students of Government Degree College, Kuppam.
2. To examine the extent of adoption of AI tools for academic purposes.
3. To analyse discipline-wise differences in digital literacy and AI tool usage.
4. To study the relationship between digital literacy levels and adoption of AI tools.
5. To suggest measures for empowering students to effectively use AI tools for academic excellence.

Review of Literature

Previous studies emphasize that digital literacy is a critical determinant of successful AI tool adoption in education. Wilson and Dock (2020) reported that students with higher digital competence are more likely to leverage AI tools effectively for learning. Sharma and Gupta (2019) highlighted that students from rural and government institutions face structural and socio-economic barriers in accessing advanced digital technologies. Lee et al. (2021) emphasized the role of institutional support and training programmes in promoting equitable adoption of AI tools. These studies provide a strong foundation for examining AI tool adoption among students of Government Degree College, Kuppam.

Research Methodology

The study adopts a descriptive and analytical research design based on primary data.

- **Sample Size:** First-year degree students from Arts, Science, and Commerce streams
- **Sampling Technique:** Convenient sampling
- **Data Collection Tool:** Structured questionnaire
- **Statistical Tools Used:** Percentage analysis and cross-tabulation

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Data Analysis and Interpretation

Digital Literacy Levels Across Disciplines

The analysis reveals noticeable variations in digital literacy across disciplines. Science and Commerce students exhibit comparatively higher levels of digital literacy, while Arts students show moderate to low levels.

Adoption of AI Tools by Digital Literacy Level

Students with high digital literacy demonstrate significantly higher adoption of AI tools for academic tasks such as assignments, presentations, research, and exam preparation. In contrast, students with low digital literacy show limited adoption, mainly due to lack of awareness and confidence.

Relationship Between Digital Literacy and AI Tool Adoption

The findings indicate a strong positive relationship between digital literacy and adoption of AI tools. As digital literacy levels increase, the likelihood of students using AI tools for academic purposes also increases.

1st Year Degree students Digital Literacy levels by discipline				
Discipline	High	Moderate	Low	Total
Arts	15 (11.7%)	94 (73.4%)	19 (14.8%)	128
Science	17 (27.4%)	36 (58.1%)	9 (14.5%)	62
Commerce	151 (55.5%)	80 (29.4%)	41 (15.1%)	272
Total	183	210	69	462

Overall across all disciplines (n=462): High 39.6%, Moderate 45.5%, Low 14.9%.

Summary of Digital Literacy Levels of 1st Year Degree Students

A total of 462 first year degree students were assessed across three disciplines—Arts, Science, and Commerce—to determine their digital literacy levels (High, Moderate, Low).

Key Findings:

- Commerce students represent the largest group (272 students) and show the highest number of students with high digital literacy (151 students).
- Arts students (128 total) show predominantly moderate digital literacy (94 students), with relatively few at the high level (15).
- Science students (62 total) also show mostly moderate digital literacy (36 students), while high literacy is seen in 17 students.

Overall Digital Literacy Distribution (All Disciplines Combined):

High: 183 students

Moderate: 210 students

Low: 69 students

Most students fall in the moderate range, followed by high literacy. A relatively small portion exhibits low digital literacy.

Discipline	Adopted AI			Not Adopted AI	Total
	High	Medium	Low		
Arts	11	54	15	48	128
Science	12	27	7	16	62
Commerce	56	151	56	9	272
Total	79	232	78	73	462

Summary of AI Adoption Across Academic Disciplines of 1st Year Degree Students

The analysis covers 462 respondents across three disciplines—Arts, Science, and Commerce—to understand their levels of AI adoption (High, Medium, Low) and non-adoption.

Summary of AI Adoption Across Academic Disciplines of 1st Year Degree Students

The analysis covers 462 respondents across three disciplines—Arts, Science, and Commerce—to understand their levels of AI adoption (High, Medium, Low) and non-adoption.

Key Findings

- **Overall AI Adoption**

A majority of respondents (389 out of 462; 84%) have adopted AI at varying levels.Only 73 respondents (16%) reported not adopting AI.

- **Discipline-wise Insights**

Commerce shows the highest engagement with AI: 263 respondents adopted AI, with a significant 151 at medium adoption. Only 9 respondents reported no adoption—lowest among all disciplines.

- **Arts displays moderate adoption:**

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80 respondents adopted AI, mostly at medium levels (54). A relatively higher 48 respondents have not adopted AI.

- **Science reports balanced adoption**

46 respondents adopted AI, with 27 at medium level.16 respondents remain nonadopters.

- **Adoption Level Pattern**

Medium adoption is the most common across all disciplines (232 respondents).

High adoption is strongest in the Commerce discipline (56 respondents).

Low adoption is relatively evenly distributed but highest in Commerce (56).

Key Findings

1. A majority of students possess moderate levels of digital literacy.
2. AI tool adoption is higher among Science and Commerce students compared to Arts students.
3. Digital literacy significantly influences the adoption of AI tools.
4. Limited access to devices and lack of formal training remain major barriers.
5. Students show positive attitudes towards learning AI tools if institutional support is provided.

Suggestions

1. Organising hands-on workshops on AI tools for academic use.
2. Integrating basic AI literacy modules into the curriculum.
3. Improving access to digital infrastructure and internet facilities.
4. Encouraging faculty-led mentoring on ethical and effective use of AI tools.
5. Promoting inclusive digital learning initiatives for rural students.

Conclusion

The study concludes that empowering students to embrace AI tools is essential for achieving academic excellence in Government Degree Colleges. At Government Degree College, Kuppam, digital literacy plays a decisive role in determining the extent of AI tool adoption. With targeted training, improved access, and institutional support, students can effectively leverage AI tools to enhance learning outcomes and academic performance. Strengthening digital empowerment initiatives will contribute significantly to inclusive and future-ready higher education.

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