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An Analysis of Students Views on The Use of Artificial Intelligence in Education in Coimbatore City

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Abstract:
Artificial Intelligence has emerged as a significant innovation in higher education, enhancing learning efficiency, personalization, and accessibility. This study examines college students perceptions of AI educational tools in Coimbatore city and their impact on the learning process. Using a descriptive research design, primary data were collected from 120 students through a structured Likert-scale questionnaire using simple random sampling. Statistical tools such as Correlation, Regression and Frequency analysis were applied using SPSS.

Keywords — **Artificial Intelligence (AI) in Education, Student Perceptions.**

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I. INTRODUCTION

INTRODUCTION

Artificial Intelligence (AI) is increasingly used by students to support their learning through various educational tools and platforms. These tools help students access information quickly, learn at their own pace, and understand subjects more easily.

Students' opinions play an important role in understanding the effectiveness of AI educational tools. While many students find them useful, others face challenges such as lack of personal interaction and unclear explanations. Therefore, this study aims to examine students' opinions about the use of Artificial Intelligence educational tools and identify their benefits and limitations

STATEMENT OF THE PROBLEM

The rapid growth of Artificial Intelligence educational tools has changed the way students learn in higher education. Although these tools are widely used, students' opinions about their effectiveness, usefulness, and challenges are not fully understood. Many students rely on AI tools for academic support, yet concerns such as lack of clarity, limited interaction, and overdependence remain. Without understanding students' opinions, institutions may not be able to use these tools effectively. Therefore, it is important to study students' opinions on the use of Artificial Intelligence educational tools to improve learning outcomes.

NEED FOR THE STUDY

The increasing use of Artificial Intelligence educational tools has significantly influenced students' learning methods. Understanding students' opinions is essential to assess how effectively these tools support academic learning. This study helps identify the benefits and limitations faced by students while using AI educational tools. It also highlights challenges such as overdependence, lack of interaction, and data privacy concerns. The findings of this study can help educators and institutions improve the effective use of AI tools in the education system.

OBJECTIVES

- To identify the benefits of AI tools in terms of personalized learning and academic support.
- To gather suggestions from students on improving AI tools for better educational experiences.

RESEARCH METHODOLOGY

Primary data:

Primary data is collected directly from students through a structured questionnaire designed specifically for this study.

Secondary data:

Secondary data is collected from books, academic journals, research papers, conference proceedings, websites, and published reports related to Artificial Intelligence in education and competency-based learning.

Sampling technique & sampling size:

The study uses the simple random sampling method to ensure equal opportunity for all students to participate in the survey. The sampling size used for the study is 120 respondents.

TOOLS USED FOR THE STUDY

SPSS software is used for the analysis part of the study.

- FREQUENCY ANALYSIS
- CORRELATION
- REGRESSION

LIMITATIONS OF THE STUDY

- The geographical scope of the study is limited to the Coimbatore city.
- Only 120 respondents have been taken for the study, a larger sample size may yield different or more generalized results.

REVIEW OF THE LITERATURE:

Sajitha J. Kurup, and Sanjose A. Thomas (2024), in their study titled "Artificial Intelligence in Education: Tailoring Curriculum to Individual Student Needs through AI-Based Systems," aimed to examine how AI technologies such as adaptive learning systems, machine learning, and natural language processing can personalize education according to individual learner needs. The study adopted a review-based research methodology, analysing existing literature and prior empirical studies related to AI-driven educational tools. The findings revealed that AI-based systems significantly enhance academic performance, boost student motivation, promote inclusivity, and improve accessibility for learners from diverse backgrounds. However, the authors also identified critical concerns such as data privacy risks, algorithmic bias, and inadequate teacher training. The study suggested the implementation of strong ethical guidelines, transparent data policies, and continuous professional development programs for educators to ensure effective AI integration. In conclusion, the authors emphasized that while AI can act as a powerful support system in education, it should not replace teachers but instead complement human instruction to create a more personalized, inclusive, and responsive learning environment.

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	below 15	15	12.5	12.5	12.5
	16-18	36	30.0	30.0	42.5
	19-21	46	38.3	38.3	80.8
	above 21	23	19.2	19.2	100.0
	Total	120	100.0	100.0	

DATA ANALYSIS AND INTERPRETATION

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	male	66	55.0	55.0	55.0
	female	54	45.0	45.0	100.0
	Total	120	100.0	100.0	

Educational Level

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	secondary	32	26.7	26.9	26.9
	higher secondary	29	24.2	24.4	51.3
	undergraduate	40	33.3	33.6	84.9
	post graduate	18	15.0	15.1	100.0
	Total	119	99.2	100.0	
Missing	System	1	.8		
Total		120	100.0		

Institute Type

Age		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	government	11	9.2	9.2	9.2
	private	44	36.7	36.7	45.8
	3	46	38.3	38.3	84.2
	4	19	15.8	15.8	100.0
	Total	120	100.0	100.0	

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.399	1	1.399	1.913	.169[b]
	Residual	85.592	117	.732		
	Total	86.992	118			

a. Dependent Variable: For what purpose do you mostly use AI tools ?

b. Predictors: (Constant), Educational Level

Interpretation

The age-wise distribution shows that the majority of respondents (38.3%) belong to the 19–21 age group, indicating higher participation from college-going students. In terms of gender, male students (55%) slightly outnumber female students (45%). Regarding educational level, most respondents are undergraduates (33.3%), followed by secondary and higher secondary students. A small proportion of respondents (15%) are postgraduate students. With respect to institute type, a larger number of students are from private institutions, indicating higher representation compared to government institutions.

REGRESSION

H_0: There is no significant relationship between educational level and mostly used AI tools.

CORRELATIONS

		Educational level	For what purpose do you mostly use AI tools ?
Educational level	Pearson Correlation	1	.127
	Sig. (1-tailed)		.085
	N	119	119
For what purpose do you mostly use AI tools ?	Pearson Correlation	-.127	1
	Sig. (1-tailed)	.085	
	N	119	120

INTERPRETATION

The intercept coefficient (constant) remains at 2.256, indicating that educational level is .169. The coefficient for educational is -0.105 with a p-value of .169, suggesting that Educational Level have a relationship with the purpose of AI tools used by the students. The standardized coefficient (Beta) is -.127, indicating a weak positive relationship between the Educational Level and the purpose of AI tools used by the students, but this relationship is not statistically significant.

CORRELATIONS

Descriptive Statistics

	Mean	Std. Deviation	N
Educational level	2.37	1.040	119
For what purpose do you mostly use AI tools?	2.02	.860	120

INTERPRETATION:

From the above correlation between educational level and for what purpose do you mostly use AI tools has a positive relationship (r=0.85). However, the significance value (p=0.127) is greater than the accepted level of significance (0.05). This indicates that the relationship does not accept significantly.

FINDINGS

- The study was conducted among 120 students from different age groups, educational levels, genders, and institution types.
- Most respondents (38.3%) belonged to the 19–21 age group, showing higher participation from college-going students.
- Male students (55%) slightly outnumbered female students (45%), indicating nearly balanced gender representation.
- The majority of respondents were undergraduate students (33.3%), followed by secondary and higher secondary students.
- A higher proportion of students were from private institutions compared to government institutions.
- Regression analysis shows that educational level does not have a statistically significant impact on the purpose for which students use AI tools ($p = 0.169$).
- Correlation analysis reveals a weak relationship between educational level and the purpose of using AI tools, but the relationship is not statistically significant ($p > 0.05$).
- Overall, students across different educational levels use AI tools for similar purposes, regardless of their academic background.

SUGGESTIONS

AI educational tools should focus on delivering detailed, step-by-step explanations, especially for technical and mathematical topics.

The use of visual elements such as charts, diagrams, and illustrations can enhance concept clarity. AI platforms should be designed to encourage interactive learning by enabling students to ask questions and explore topics in depth. Educational institutions should organize training and awareness programs to promote the effective academic use of AI tools. Students should also be guided on responsible and ethical use of AI, including data security and content validation. Excessive reliance on AI tools should be discouraged to maintain academic honesty.

CONCLUSION

This study examined students' use of AI educational tools based on their demographic background, learning patterns, and perceptions. The findings indicate that younger learners and undergraduate students frequently use AI tools, particularly for understanding complex technical and mathematical concepts. While students value the personalized learning support offered by AI tools, challenges such as limited visual content, shallow explanations, and reduced interaction remain. The study emphasizes the need for improved customization, enhanced explanations, and more interactive features. It also underlines the importance of awareness initiatives and ethical usage. Overall, AI educational tools can effectively enhance learning when used thoughtfully and in combination with traditional teaching methods.

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