AI Tools In Education: Perspectives From Learners And Educator

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*Abstract:*This study evaluates the use of artificial intelligence and its impact on student learning and performance. The aim is to determine the impact on learning and examine the impact of intellectual property on teaching and practice. This study provides both quantitative and qualitative results. A survey on learning factors was developed for the study population and used by expert decision makers. Surveys and the Google Forms platform were used to collect data. The Kaiser-Meyer-Olkin goodness-of-fit test and Bartlett's standard deviation test was used to evaluate the separation of data in this study. Rank score was calculated to evaluate differences between variables. The Kaiser formula and Scree test should be reviewed to determine which points are acceptable. Varimax orthogonal factor rotation method was used to reduce the number of variables carrying high loadings on each factor. The results show that the analysis not only controls irrelevant items but also provides important implications for the research data. Applying analytical methods to evaluation problems can offer important insights to decision makers and help them focus on a few important things rather than many. This article discusses students' and teachers' perspectives on the use of these skills.

Index Terms - artificial intelligence, academic performance, education, factor analysis, transparency, qualitative study

I. INTRODUCTION

The rise of Artificial Intelligence (AI) represents a profound transformation across various sectors, with a significant impact on education. AI tools integrated into educational settings have the potential to revolutionize learning experiences for both educators and learners. This study examines the differing perspectives of educators and learners concerning the implementation and utilization of AI tools in the educational sector.

AI tools in the educational sector refer to the application of artificial intelligence technologies within learning environments to enhance teaching methods, personalize learning experiences and optimize educational outcomes. These tools encircle a wide range of AI applications and systems that assist educators and students in various aspects of the learning process.

➢ Personalized Learning: AI tools can comply to individual learning styles and paces, offering personalized educational content and pathways for students. These tools can analyze student performance and behavior to provide tailored materials and learning experiences, catering to the specific needs of each learner.

➢ Adaptive Learning Systems: AI algorithms are used in these systems to assess student's strengths and weaknesses. They adjust the curriculum or learning materials in real-time based on students' progress, ensuring a more tailored learning experience.

➢ Virtual Tutors and Chatbots: AI-powered virtual tutors or chatbots are available to students, offering support, answering questions, and providing explanations in real-time. These tools can assist in reinforcing learning materials, offering immediate help to students when educators might not be available.

➢ Automated Grading Systems: AI-driven grading systems are capable enough to efficiently evaluate assignments, quizzes, and exams, providing quicker feedback to students. This technology can save educator's time on grading, allowing them to focus more on teaching and mentoring students.

➢ Language Learning and Translation Tools: Language learning applications powered by AI and translation tools facilitate language acquisition by offering interactive lessons and real-time translation services, breaking down language barriers in educational settings.

These tools conform to individual learning styles and paces, offering personalized educational content and pathways for students. They analyse student performance and behaviour to provide tailored materials and learning experiences, meeting the specific needs of each learner.

Adaptive Learning Systems utilize AI algorithms to assess students' strengths and weaknesses, adjusting the curriculum or learning materials in real-time based on their progress, thereby ensuring a tailored learning experience. Virtual Tutors and Chatbots powered by AI offer real-time support, answering questions, and providing explanations to students, reinforcing learning materials and offering immediate assistance when needed.

AI-driven grading systems efficiently evaluate assignments, quizzes, and exams, providing prompt feedback to students, thereby saving educators time on grading, and allowing them to focus more on teaching and mentoring. Data Analysis and Predictive Analytics enable educators to identify trends, predict student performance, and assess teaching methods' effectiveness, adapting strategies and providing targeted support to students accordingly.

AI also contributes to the creation and curation of educational content, generating lesson plans, designing instructional materials, and recommending resources, thereby fostering the development of high-quality educational resources. Additionally, AI-powered language learning applications and translation tools facilitate language acquisition, breaking down language barriers in educational settings.

The rapid integration of AI tools in education has generated considerable interest and discussion among educators and learners worldwide. While these tools offer personalized learning experiences and tailored instructions, their widespread integration prompts critical examination of ethical considerations and challenges.

Educators' perspectives revolve around how AI tools can enhance teaching, streamline administrative tasks, personalize learning, and support students, while learners focus on the immediate impact on their learning experiences, including personalization, accessibility, and ease of use. However, concerns exist regarding the displacement of traditional teaching methods, ethical implications, overreliance on AI, and the loss of human interaction.

Understanding both educators' and learners' perspectives is crucial for navigating the integration of AI tools in education and realizing their potential to enhance student learning outcomes. This dynamic interplay between technology and education highlights the evolving relationship between technology and the educational landscape and its potential impact on the broader education system.

Need and Scope of the study

The need for this study arises from several critical gaps and limitations in the existing body of literature related to the subject matter. The existing studies predominantly rely on case-based and conceptual approaches, which do not provide the depth of insights that empirical research based on primary data collection can offer. The main purpose of this study is to determine the main factors which are affecting both the leaners and educators experience towards artificial intelligence tools.

II. Review of Literature

Sajja et al (2023) Their focus is on developing and implementing the AIIA system, that uses advanced AI and Natural Language Processing (NLP) techniques to create an interactive and engaging learning platform in higher education. The study acknowledges the challenges and limitations encountered during development. These challenges can be valuable learning experiences and should be addressed in future iterations to improve the system's effectiveness and reliability. **Guan & Mou (2020)** Their main aim of the critical research is to identify historical events, key research topics, and changes related to research on AI-induced instructional change from 2000 to 2019 and to present the emergence of student analysis patterns and learning analytics in educational research. This study contributes to the AI literature by identifying important research shifts in the use of AI and deep learning in education. It helps position ongoing AIEd research and initiates dialogue about emerging research themes for the next decade. David Sander s, **Gegov (2013**) In his paper, he reviewed seven AI tools useful in collaborative automation: cognitive processes, fuzzy logic, automatic recognition, neural networks, genetic algorithms, case-based reasoning, and ambient intelligence. The tools and techniques described in this article are less complex and can be used on small assembly lines, single robots, or machines with low-end microcontrollers. **Kavitha & Lohani (2019)** their paper focused on discussing the diverse uses of e-Learning, including employee training, skill development, self-directed learning, and the need for a suitable learning management system (LMS). The article also highlights the integration of AI to improve the eLearning experience. The key implication is that e-Learning research needs to continue gathering robust evidence to validate its effectiveness and that AI can enhance eLearning but is not a complete substitute for instructor-based learning, highlighting the importance of maintaining a balance between technology and human guidance in education. **Hosseini et al (2023)** Their study focused to inscribe the ethical issues related to the use and disclosure of AI tools like ChatGPT and LLMs in scholarly manuscript creation. It explores the appropriate recognition, citation, and disclosure practices for LLMs and argues against considering them as authors due to their lack of free will. Scholarly manuscript creation using Large Language Models (LLMs) raises complex ethical challenges that cannot be effectively addressed by banning them. Instead, policies promoting transparency and accountability, through disclosure in the introduction or methods section, in-text citations, and supplementary materials, are recommended to ensure proper recognition while not attributing authorship or responsibility to LLMs. **BaidooAnu & Ansah(2023)** Their research focused on the aftermath of ChatGPT, a generative Artificial Intelligence tool, on education and how it can potentially revolutionize teaching and learning. The study explores the benefits, drawbacks, and recommendations for leveraging

ChatGPT in the educational context.The key implications are that ChatGPT and similar generative AI models have the potential to revolutionize the educational landscape by offering personalized and interactive learning experiences, improving the efficiency of tasks such as essay grading and language translation, and enhancing. **Holmes et al (2023)** in their paper focused from automating traditional teaching methods to exploring AI's potential in fostering collaborative, learning, enhancing assessment methods and assisting teachers. The application of AI in education may unintentionally amplify biases and reinforce existing assumptions, while intelligent tutoring systems face challenges in balancing personalized learning and collective effectiveness, potentially overlooking individual nuances. **Roll & Wylie (2016)** in their study talked about the evolutionary process focuses on collaborating with teachers, diversifying technologies and domains, and improving current classroom practices in AIED research. The revolutionary process aims to embed AI technologies in students' everyday lives, supporting their cultures, practices, goals, and communities, bringing a transformative impact on education. AIED researchers should continue their work, taking bolder steps, and integrating ILEs with various learning environments, cultural norms, and learners' daily lives. The metaphor of a human tutor may no longer suffice, and the aim should be to create mentorlike systems that go beyond domain knowledge to support lifelong skills and peer interaction. **Kizilcec (2023)** in his study the focus is on the adoption and impact of Predictive Learning Analytics (PLA) in education, where machine learning and AI are used to provide insights and risk predictions to educators, ultimately aiming to enhance student success and retention in both K12 and higher education institutions. Technology designers must focus on understanding educators' needs, workflow, and resources to create AI tools that align with their daily practice. Attention to usability, reliability, and integration into common systems can enhance AI adoption in education. Future research should continue exploring these factors to optimize educators' experiences with AI systems. **Akgun (2021)** in his research the major focus is on (1) defining AI through concepts like machine learning and algorithms, (2) introducing AI applications in education, emphasizing benefits for students' learning, (3) addressing ethical challenges and dilemmas of AI in education, and (4) providing recommended instructional resources to help teachers and K-12 students understand AI and its ethical implications. The paper provides valuable insights into the possibilities and ethical concerns surrounding AI integration in education. The highlighted instructional strategies and resources offer the potential to assist both students and teachers in harnessing AI's benefits while addressing privacy concerns and bias. **Božić (2023)** in his research the major focus is on the integration of digital tools into teaching methods, leveraging modern technology to create an improved learning environment for primary school students. Further research is needed to effectively integrate Ai based tools into primary school instruction, evaluate long term effectiveness, and address ethical and equity concerns. AI can empower teachers with valuable insights if designed and implemented thoughtfully**. Khoroshavin b et al (2018)** their study revolves around exploring the transformative influence of Artificial Intelligence (AI) in education, particularly through personalized educational content, pioneering teaching techniques, technology-driven assessment methods, and the evolving dynamics of student-lecturer communication, aiming to predict and understand the future landscape of education shaped by AI integration. The study underscores the evolving role of AI in education, emphasizing its integration into diverse educational facets like assessment,

personalized learning, and content development, but highlights the necessity of preserving human interaction and mentorship within the learning process. **Pinzolits (2023)** In his research he talked about the exploring the efficacy of AIbased NLP tools for optimizing academic research processes and enhancing educational outcomes.AI-based tools offer immense potential to enhance research efficiency and academic writing but raise critical ethical and authenticity concerns, requiring continuous evaluation and ethical integration into academic practices for sustainable advancement. **Karki & Karki (2023)** in their research they talked about the AI's impact on education, this study delves into the evolving role of AI in transforming educational structures while emphasizing the need for a symbiotic relationship between AI and educators to enrich rather than replace traditional teaching methodologies. The study highlights the need for a balanced integration of AI in education, emphasizing ethical considerations, educator roles, and the ever evolving landscape while acknowledging the necessity for further exploration into emotional learning aspects and cross-cultural disparities in AI adoption within academia. **Liang (2023)** in his paper he is addressing the impact of AI tools in education by emphasizing creativity-centered assessment methods and implementing AI literacy programs to preserve humanities' value amidst technological advancements.It includes the necessity for redefining testing methods in humanities education and integrating AI literacy courses to address AI tool usage, ensuring the humanities adapt and leverage AI advancements while mitigating potential drawbacks. **Nguyen (2023)** his study focus is to analyze and categorize past AI applications in education to create a framework for the development of new AI approaches, considering their benefits, potential drawbacks, and ethical considerations. The key implications involve addressing ethical concerns, technical limitations, and cost issues while categorizing AI applications, ensuring the development of safe and effective AI solutions for education. **Chan (2023)** in his research the major focus is on exploring the prospects of AI in higher education, assessing whether it will replace or assist human teachers, with findings emphasizing the irreplaceable qualities of human teachers while proposing strategies for incorporating AI to enhance learning and teaching. Emphasize the symbiotic relationship between human teachers and AI in education, integrating AI to support educators while preserving human qualities essential for student growth and advocating for ethical AI development. **Saylam et al (2023)** in their research the focus is on addressing ethical challenges arising from students' misuse of AI in education, proposing guidelines to optimize AI's beneficial use, and fostering an environment that supports students and faculty in their academic endeavours. The ethical use of AI in education is crucial therefore, educating students for leveraging its benefits, necessitating a balance between progressive teaching methods and ethical considerations for maximized educational advantages. **Rayhan & Rayhan (2023)** their primary research focus of the paper centers on exploring AI's transformative potential in personalized learning experiences, ethical considerations, and safeguarding student data privacy within the educational landscape. Responsible implementation and continued collaboration will be vital in fully harnessing the prospects of AI to shape the posterity of education while ensuring ethical considerations and overcoming challenges. **Hwang (2020)** their major research focus revolves around defining AIED's roles, evaluating its impact on students, and exploring innovative AI supported learning strategies, while addressing ethical considerations and the use of big data in educational contexts. Artificial intelligence in education has the potential to transform teaching

and learning by providing opportunities for teachers and students. The publication of the journal highlights the importance of artificial intelligence in education and the need for rigorous research in this emerging field. **Chen et al (2020)** their major research focus is on the trends in AIEd research, the advocacy of AI technologies in education, and the need to incorporate advanced techniques, deep learning, and educational theories to enhance educational outcomes. They are practical guidance for newcomers, potential for international collaborations, and enhanced understanding of AIEd trends. **Ouyang & Jiao (2021)** their major research focus revolves around how AI techniques are applied to enhance educational practices and empower learners, moving towards learner agency, personalization, and data-driven, personalized learning. The research underscores the need for developing learner-centered, data-driven, and personalized learning in the knowledge age. It suggests that AIEd should go beyond technology implementation and align with educational theories. **Aker & Mbiti (2019)** in their study they highlights of the research include analyzing the potential of artificial intelligence to improve equity and performance in education, learning how governments and schools can adapt programs inherent in education to ensure the integration of intelligence, and solving problems and policies related to intelligence in education. Intelligence in Education The future development of education is aimed at sustainable development. This is to help countries and their schools begin to understand more information to provide more personalized education. **Chen et al (2020)** Their study focus is on how AI has been adopted in educational institutions, its evolution from computer-based technologies to web-based systems and humanoid robots, and the effects on administration, instruction, and learning, including personalized curriculum and improved teaching quality. Key implications are enhanced teacher effectiveness, improved learning experiences, and the transformation of education. **Renz et al (2020)** their major research focus includes an overview of their current status, exploring the relationship between the two, and investigating the lack of real applications for AI in education in the European market, examining datadriven business models and their connection to market growth. The article highlights a gap between theoretical understanding and practical relevance of AI in education. Key implications are the need to focus on practical implementation, explore regional differences in AI adoption, and address data security and ethical concerns**. Chen et al (2021)** His main research interests are on various artificial intelligence technologies, including artificial intelligence, language processing, robotics, data mining, speech analysis, neural networks, inference and consensus, and their applications in educational settings.The article also addresses the challenges and future directions in AIEd. Key implications are the need for transparent learner data usage, involving instructors in AI system design, and transitioning to "DLEd" for educational system design**. Liu (2021)** his major research focus includes exploring AI's impact on teaching and learning, discussing its potential benefits for teachers and students, and addressing future challenges in AI's integration into education for promoting reform. Key implications include the need for better AI integration, personalized learning, and teacher-student adaptation. **Devedžić (2021)** his major research focus is on exploring the potential of key WI components, including intelligent Web services, semantic markup, and Web mining, to address new and challenging research problems in AIED. The paper briefly mentions ontologies, adaptivity, personalization, and agents as well. Key implications include the promise of improved course sequencing and content presentation, automation of

various educational activities, and more structured educational material organization. **Baker** his major research focus includes the evolution of theories and models for collaborative learning, integrating educational technology into schools, and using models as the basis for designing educational technologies. The article emphasizes the importance of AIED research addressing all three roles of models in education. The key implication is the need to "open up" the curriculum, educational technologies, and educators themselves to adapt to educational technology, which involves complex challenges on structural and institutional levels.

Study Objectives:

➢ To identify the important factors that are affecting the learning experience.

➢ To investigate the implications of AI tools on pedagogy and educational practices.

Methodology:

Research Design:

The scientific paradigm is a lens that changes and influences the way we view the world. Information is perceived or interpreted. Scientific philosophy is a belief and way of thinking about the development of knowledge. Ontology, epistemology, and axiology follow these ideas from two perspectives: objectivism and subjectivism. Additionally, the selection of appropriate studies depends on the context and nature of the study. The research was designed as descriptive, and a survey distributed to students studying at various universities was used. To understand the specificity and depth of teaching practice, qualitative research is considered the most appropriate method because it provides a deeper understanding rather than a general, specific understanding, especially when the nature of the research is exploratory.

Sampling Size and Techniques:

Learner: For the quantitative approach, a fully structured questionnaire can be a great use for investigating. In case of factor analysis, a comprehensive interpretation can be done from 100 sample size. In this research data is collected a total of one hundred and eighty-seven participants. The participants were selected using convenience sampling, with accessibility and availability being the key drivers of sample selection.

Educator: The minimum acceptable standard for conversation quality is 1, which is beneficial for cognitive development. Qualitative researchers should reference saturation and population homogeneity when justifying the sample used. When participants belong to a group, a small sample size is sufficient and data saturation can be achieved after 6 in-depth interviews. In case of Phenomenological Analysis (IPA), a general description of the phenomenon can be made on a small sample, so it is recommended to use 6 samples for this type of study. In this study, an in-depth interview was conducted with all twenty participants in the teaching practice. This sample size is sufficient to obtain positive findings in this study and follow similar studies in the past. Participants were selected through convenience sampling; accessibility and usability were the main driver of sample selection.

Data Collection

Learners: For this research, the researcher made the fully structured questionnaire which is a quantitative method to investigate the factors which are affecting the learning experience. The researchers used google forms for collecting the data from the participants.

Educators: This study requires an in-depth interview, which is a good way to investigate the impact of intellectual property on education. The researchers visited teachers in various areas and conducted interviews with those who consented to participate in the study to obtain a deeper grasp of the work. Researchers interviewed 20 participants ranging in age from 30 to 50. All interviews were audio recorded and transcribed. It's easy to edit or repeat questions. These participants are not opposed to the publication of research data.
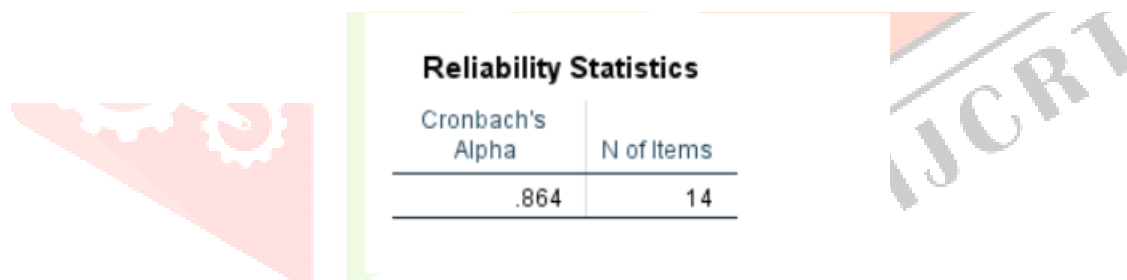
Tools used:

For this study we used techniques and tools for methodologies: SPSS to create the factor analysis, Google forms for data collection.

Analysis & Key findings

Cronbach's Alpha:

Using Cronbach's alpha, the questionnaire's reliability was evaluated. It offers a simple method for determining the score's reliability. Many items are believed to assess the same underlying construct. For instance, separate questions in a student survey may ask different things, but the combined answers are assumed to indicate overall satisfaction. Consistency is gauged by Cronbach's alpha.

Reliability Statistics

Cronbach's Alpha	N of Items
.864	14

Factor Analysis:

This study used analytical methods to analyse the data set to identify relationships between elements and groups of elements that are part of a composite concept. The approach does not distinguish between freedom and progress due to its investigative nature. A factor analysis just looks at the profile correlation matrix to determine the underlying variables, grouping variables into the same factor. This study used factor analysis with outliers to examine whether courses were related to the learning experience.

KMO and Bartlett's Test:

Table 1 The sample size is adequate, and the index is appropriate for the data, as demonstrated by the KMO value index of 0.877>0.6. The sphericity of the correlation matrix was assessed via Bartlett's test. The results of Bartlett's test of sphericity show that the correlation matrix is significantly correlated on at least some variables, with a p-value of less than 0.001. In this instance, the correlation coefficient is less than

0.0001 and the test value is 765.347. As a result, it is not true that the correlation matrix is an identity matrix. Specifically, the transformations are not perpendicular. When the significance value is less than 0.05, it means that the data set can be analysed.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.877
Bartlett's Test of Sphericity	Approx. Chi-Square	765.347
	df	91
	Sig.	.000

Table1: KMO and Bartlett's test

Factors Extraction:

Use the Kaiser test and Scree test to determine whether the threshold number changes from negative. The eigenvalues associated with each factor represent the rate of change defined by a specific linear component. Coefficient values below 0.4 are suppressed, which suppresses the presentation of significant loads with a value less than 0.4.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.091	36.368	36.368	5.091	36.368	36.368	3.226	23.039	23.039
2	1.347	9.623	45.990	1.347	9.623	45.990	3.213	22.951	45.990
3	.981	7.006	52.996						
4	.920	6.573	59.569						
5	.820	5.857	65.426						
6	.737	5.262	70.688						
7	.694	4.955	75.643						
8	.643	4.590	80.234						
9	.573	4.095	84.328						
10	.538	3.843	88.171						
11	.505	3.608	91.779						
12	.443	3.162	94.941						
13	.365	2.607	97.547						
14	.343	2.453	100.000						

Extraction Method: Principal Component Analysis.

Table2: Kaiser's Criteria

Table 2 provides an explanation of the overall transformation and the eigenvalues. Fundamental analysis was the search and extraction strategy employed in this investigation. Prior to extraction, eleven linear sequences were found in the data set. Two distinct rows with eigenvalues greater than one can be found in the data after subtraction and rotation. Together, the two subtractions account 45.991% of the variation in total. A graph for the Scree test is shown in Figure 1, with the 12 components' numbers in order of subtraction on the x-axis and the eigenvalues on the y-axis. Greater eigenvalue factors are recovered first, and then smaller factors. The number of factors that are stored is determined using a scree grid. Here, the plot demonstrates that two components account for most of the total variation in the data and have eigenvalues greater than 1. Other factors were deemed insignificant since they only contributed a small percentage to the variance's explanation.
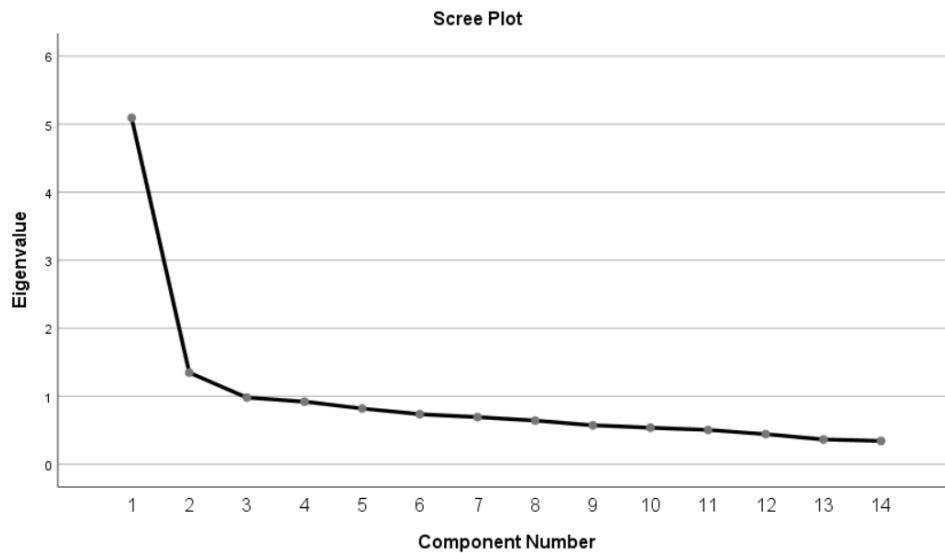
Figure1: Scree Plot

Factors		Communalities after extraction
Item	Component1: Effective time management	
1	The artificial intelligence enabled me to achieve more accurate and reliable outcomes compared to traditional methods.	0.433
2	Artificial intelligence aids in the progress and efficiency of individuals.	0.414
3	Artificial intelligence reduces engagement time from 50-90%.	0.408
4	Artificial intelligence influences my academic performance.	0.472
5	The automation through AI has positively impacted academic workload.	0.469
6	AI tools have influenced my ability to develop critical thinking skills.	0.493
7	AI based tasks should be introduced as a part of curriculum.	0.55
Item	Component2: Transparency	
8	The outcomes generated by artificial intelligence systems are easily understandable.	0.396
9	The Decisions generated by artificial intelligence systems are easily explainable.	0.395
10	Artificial intelligence is a useful tool in supporting decision-making in complex situations.	0.348
11	Artificial intelligence is a useful tool in supporting decision making with large data sets.	0.537
12	Artificial intelligence should be used ethically without being a threat to others.	0.5
13	Artificial intelligence generates response better than expected results if asked with clarity.	0.498
14	Artificial Intelligence is quickly becoming a powerful tool for acquiring and processing information.	0.525

Table3: Communalities of extraction

The first component, titled "Effective Time Management," is made up of seven things that aim to reduce time, produce precise and dependable results, advance personal development, and have a good workload impact. With an eigenvalue of 5.091, the component that effectively managed time explained 23.03% of the overall variation. This component included seven things total, but based on its communalities, the performance, critical thinking abilities, and burden reduction seem to be highly agreeable. Based on their average score on the scale, the other three items—accuracy, efficiency, and time reduction—tend to move towards agreement.

With an eigenvalue of 1.347, the second component, "Transparency," explained 22.951% of the variance. This component included seven elements, including decision-making, ethical use, explainable, and understandable. Large data sets tend to significantly agree with the item "decision making," but other things with mean scale scores that are "understandable," "explainable," "decision making in complex situations," "clarity," and "powerful tool for acquiring" tend to agree.

Interpretative Phenomenological Analysis (IPA)

Within the realm of education, AI tools provide edge to both learner and educator. As AI tools continues to integrate into educational settings, understanding its impact is crucial for optimizing teaching and learning outcomes. By examining the perspectives of various stakeholders, this research aims to uncover the multifaceted advantages of AI tools, shedding light on their potential to enhance learning experiences, improve pedagogical practices, and foster innovation within educational environments. Through thematic analysis, this study seeks to identify key themes that encapsulate the diverse benefits of AI tools, paving the way for informed decision-making and effective utilization in educational sector. Following are the themes Identified:

Productivity

AI Tools enhances productivity due to their ability to automate tasks, optimize processes, and provide valuable insights, allowing individuals to accomplish more with greater efficiency and effectiveness.
Dr. Jatinder, a professor is finding AI tools helpful in spreadsheet modelling and mentioned that:
AI help in spreadsheet modelling and enhances our productivity and there are many tools in AI which are helping us in our field
Dr. Ajay Singh, a Asst.Professor is using AI enabled tools mentioned that:
We do use AI enabled tools like Co-Pilot Pro and that is something I developed a taste for other than ChatGPT and yes they are helpful in increasing productivity.

Creativity

AI improves creativity by offering novel insights, generating diverse ideas, and facilitating exploration, empowering individuals to experiment and create innovative solutions and push the boundaries of traditional thinking.
Navneet, an asst. professor who is using AI tools on his mobile is finding helpful in innovation and exploring data on the go and mentioned that:
I am using AI tools on my mobile and is helping me to innovate and explore more.
Miss Ruchi, an asst. professor had a contra view and mentioned that:
AI tools like ChatGPT are facilitating in personalized learning and enabling the exploration of new ideas and concepts.

Content Creation

AI tools are creating a bigger space in content creation which involves generating high-quality text, images, and multimedia content with speed and accuracy, leveraging natural language processing, image recognition, and other advanced algorithms to meet diverse communication needs efficiently.
Dr. Ayushi who is an asst professor mentioned that:
I am using couple of things, recently I am using like Aaspaas for creating stickers, videos and all that stuff.

Language

AI helping in improving grammar, vocabulary by providing instant feedback, personalized learning experiences, and interactive language exercises. It indicates AI tools provide potential to enhance communication skills and written expression for learners.
Dr. Monika Kalani, an asst. professor often uses Cloud AI for text refinement and mentioned that:
If I must refine text to a greater extend, then I often use Cloud AI.
Dr. Pratap mentioned that:
I am exploring AI tools like Grammarly for improving grammar.
Dr. Pooja, an asst. professor mentioned that:
I am often using Grammarly and chatGPT in honing linguistic skills.

Integration

AI is an advanced technology, and the integration of AI-enabled tools presents challenges in the beginning due to the unfamiliarity with the technology, lack of training opportunities, requiring comprehensive support systems and user-friendly interfaces to facilitate smooth adoption and proficiency development. Jatinder, an asst professor mentioned his experience and challenges while implementing AI enabled tools for spreadsheet modelling for smoother integration pathways.

Initial challenges were how to integrate AI in spreadsheet modelling and how to use that tools to do our projection in a better way.

Ajay Singh, an asst. professor who have not find much challenge in integration but emphasizes on the importance of understanding the tools to get best out of them. He mentioned that:

It's a new trajectory so it takes time to understand, how to get the best out of these tools, we don't know, we must learn, it's a long process.

Passivity and dependence

AI tools may foster passivity and dependence by providing instant solutions, reducing critical thinking, and encouraging reliance on automated processes. Monika Kalani, Asst. Professor was concerned and showed the need to necessitate efforts to promote active engagement, autonomy, and critical thinking skills to mitigate these challenges and foster independent learning and problem-solving abilities. She mentioned that:

Student performance has gone down and dependency on AI is increasing. It should be used as starting point or for further exploring rather than for copy pasting.

Dr. Pratap raise concerns about the potential for AI-facilitated plagiarism and misuse, undermining authentic learning and mentioned that:

AI is providing instant solutions to students which they are misusing. AI facilitating plagiarism and cheating.

Jatinder, an asst. professor mentioned that:

AI is disrupting the natural flow of learning and critical thinking skills development and acting as a hindrance.

Suchi, asst professor highlights concerns about stifled creativity in students by the use of AI. She mentioned that:

AI inhibiting exploration, experimentation and killing creativity by providing instant solutions.

Monitored AI Use

Educators advocate for monitored AI use in students to ensure responsible and ethical utilization, mitigate risks of over-reliance or misuse, and promote a balanced approach to learning that fosters critical thinking and skill development alongside technological integration.

Anand, asst. professor mentioned that:

There is a urgent need to balance student's autonomy and exploration with guided supervision when utilizing AI tools, promoting a supportive environment for meaningful learning outcomes.

Kanchan mentioned that:

Monitored use of AI is crucial in cultivating digital citizenship skills among students, emphasizing responsible online behaviour, critical evaluation of AI-generated content, and ethical decision-making in a rapidly evolving technological landscape.

Awareness Campaigns

Neha, an asst. professor mentioned that:

Students should be encouraged to use AI for innovation, problem solving and collaborative learning in a responsible manner.

Dr. Nitin Goyal, an asst professor mentioned that:

Definitely yes, to promote AI and run awareness campaigns. Promoting AI campaigns can help students by raising awareness in exploring AI technologies to drive innovation and solve real-world problems.

Discussion and conclusion

This study aims to determine the primary factors influencing the research by analyzing the survey's design. The Kaiser-Meyer-Olkin decision score measurement and Bartlett's sphericity test were employed to investigate the possibilities of analyzing the data set. It is possible to draw the conclusion that analysis is a useful tool for identifying the key ideas that underpin student differences based on the findings of this investigation. To assess the study's impact, principal components analysis and the varimax orthogonal factor rotation approach were used to extract the two key themes of effective time management and transparency. The consolidation of IPA results shows that it is more important for teachers for students to be creative and imaginative. We also saw that they used intellectual skills to create content, which helped them prepare for classes.

Limitations and Future research

Since this study's findings cannot be applied to the entire population, a larger sample can be obtained via the sampling technique to support further investigation. However, more research is needed for detailed analysis before strong decisions can be made to influence student knowledge to promote transparency and control. From the teacher's perspective, this type of qualitative research has some limitations. First, this research is exploratory in nature and aims to investigate the impact of intelligence in education. Therefore, the findings cannot be generalized, and it is recommended to adopt quantitative or mixed methods in future studies. Second, when participants provide new insights into the use of AI, the effectiveness of AI tools from the learner's perspective will be an important contribution to this new research.

References

Abramo, G., & D'Angelo, C. A. (2010). National-scale research performance assessment at the individual level. *Scientometrics*, *86*(2), 347-364. https://doi.org/10.1007/s11192-010-0297-2

Afra, S., & Alhajj, R. (2020). Early warning system: From face recognition by surveillance cameras to social media analysis to detecting suspicious people. *Physica A: Statistical Mechanics and its Applications*, *540*, 123151. https://doi.org/10.1016/j.physa.2019.123151

Aker, J. C., & Mbiti, I. M. (2010). Mobile phones and economic development in Africa. *Journal of Economic Perspectives*, *24*(3), 207-232. https://doi.org/10.1257/jep.24.3.207

Akgun, S., & Greenhow, C. (2021). Artificial intelligence in education: Addressing ethical challenges in K-12 settings. *AI and Ethics*, *2*(3), 431-440. https://doi.org/10.1007/s43681-021-00096-7

BAİDOO-ANU, D., & OWUSU ANSAH, L. (2023). Education in the era of generative artificial intelligence (AI): Understanding the potential benefits of ChatGPT in promoting teaching and learning. *Journal of AI*, *7*(1), 52-62. https://doi.org/10.61969/jai.1337500

Chassignol, M., Khoroshavin, A., Klimova, A., & Bilyatdinova, A. (2018). Artificial intelligence trends in education: A narrative overview. *Procedia Computer Science*, *136*, 16-24. https://doi.org/10.1016/j.procs.2018.08.233

F. J. Pinzolits, R. (2023). AI in academia: An overview of selected tools and their areas of application. *MAP Education and Humanities*, 37-50. https://doi.org/10.53880/2744-2373.2023.4.37

Guan, C., Mou, J., & Jiang, Z. (2020). Artificial intelligence innovation in education: A twenty-year data-driven historical analysis. *International Journal of Innovation Studies*, *4*(4), 134-147. https://doi.org/10.1016/j.ijis.2020.09.001

Hosseini, M., Resnik, D. B., & Holmes, K. (2023). The ethics of disclosing the use of artificial intelligence tools in writing scholarly manuscripts. *Research Ethics*, *19*(4), 449-465. https://doi.org/10.1177/17470161231180449

Hwang, G., Xie, H., Wah, B. W., & Gašević, D. (2020). Vision, challenges, roles and research issues of artificial intelligence in education. *Computers and Education: Artificial Intelligence*, *1*, 100001. https://doi.org/10.1016/j.caeai.2020.100001

Ifenthaler, D., & Yau, J. Y. (2019). Higher education stakeholders' views on learning analytics policy recommendations for supporting study success. *International Journal of Learning Analytics and Artificial Intelligence for Education (iJAI)*, *1*(1), 28. https://doi.org/10.3991/ijai.v1i1.10978

Kavitha, V., & Lohani, R. (2018). A critical study on the use of artificial intelligence, E-LEarning technology and tools to enhance the learners experience. *Cluster Computing*, *22*(S3), 6985-6989. https://doi.org/10.1007/s10586-018-2017-2

Kizilcec, R. F. (2023). To advance AI use in education, focus on understanding educators. *International Journal of Artificial Intelligence in Education*. https://doi.org/10.1007/s40593-023-00351-4

Nguyen, N. D. (2023). Exploring the role of AI in education. *London Journal of Social Sciences*, (6), 84-95. https://doi.org/10.31039/ljss.2023.6.108

Roll, I., & Wylie, R. (2016). Evolution and revolution in artificial intelligence in education. *International Journal of Artificial Intelligence in Education*, *26*(2), 582-599. https://doi.org/10.1007/s40593-016-0110-3

Sanders, D., & Gegov, A. (2013). AI tools for use in assembly automation and some examples of recent applications. *Assembly Automation*, *33*(2), 184-194. https://doi.org/10.1108/01445151311306717

Saylam, S., Duman, N., Yildirim, Y., & Satsevich, K. (2023). Empowering education with AI: Addressing ethical concerns. *London Journal of Social Sciences*, (6), 39-48. https://doi.org/10.31039/ljss.2023.6.103

Sajja, R., Sermet, Y., Cikmaz, M., Cwiertny, D., & Demir, I. (2023). Artificial Intelligence-Enabled Intelligent Assistant for Personalized and Adaptive Learning in Higher Education. *arXiv preprint arXiv:2309.10892*.

Holmes, W., Bialik, M., & Fadel, C. (2023). Artificial intelligence in education. Globethics Publications.

Anderson, J. R., Boyle, C. F., Corbett, A. T., & Lewis, M. W. (1990). Cognitive modeling and intelligent tutoring. Artificial Intelligence, 42(1), 7–49.

K. Flamm, Creating the Computer: Government, Industry, and High Technology. Washington, DC, USA: Brookings Institution Press, 1988.

Ai, F., Chen, Y., Guo, Y., Zhao, Y., Wang, Z., & Fu, G. (2019). Concept-aware deep knowledge tracing and exercise recommendation in an online learning system. International Conference on Educational Data Mining (EDM) (pp. 240–245). Montreal, Canada: International Educational Data Mining Society. Retrieved from https://files.eric.ed.gov/fulltext/ED599194.pdf

Alpert, S. R., Singley, M. K., & Fairweather, P. G. (1999). Deploying Intelligent Tutors on the Web: An Architecture and an Example. International Journal of Artificial Intelligence in Education, 10, 183-197.

Allwood, J., Nivre, J. & Ahlsén, E. (1991). On the Semantics and Pragmatics of Linguistic Feedback. Gothenburg Papers in Theoretical Linguistics No. 64. University of Gothenburg, Department of Linguistics, Sweden.

Božić, V. THE USE OF DIGITAL TOOLS AND AI IN EDUCATION.

Karki, D., & Karki, N. Artificial Intelligence vs. Educators: Can AI Replace Academics?

Abbas, T. (2023). Ethical Implications of AI in Modern Education: Balancing Innovation and Responsibility. *Social Sciences Spectrum*, *2*(1), 51-57.

Chan, C. K. Y., & Tsi, L. H. (2023). The AI Revolution in Education: Will AI Replace or Assist Teachers in Higher Education? *arXiv preprint arXiv:2305.01185*.

Pratama, M. P., Sampelolo, R., & Lura, H. (2023). Revolutionizing education: harnessing the power of artificial intelligence for personalized learning. *Klasikal: Journal of Education, Language Teaching and Science*, *5*(2), 350-357.