

TO STUDY THE BLENDING OF TECHNOLOGY AND ARTIFICIAL INTELLIGENCE WITH EDUCATION FOR ENHANCING THE LEARNING EXPERIENCE

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ABSTRACT:

This in-depth study investigates the profound impact of Artificial Intelligence (AI) on traditional teaching methods. The study seeks to provide a holistic perspective on the evolving dynamics influenced by AI in education through a meticulously conducted questionnaire-based investigation involving a diverse sample of huge participants, primarily students from the region of Delhi NCR. The survey, which uses scale-based questions, allows participants to express nuanced opinions, allowing for a thorough understanding of the shifting perspectives among key stakeholders. The study delves into the unique insights provided by students, with a focus on the relationship between artificial intelligence and traditional teaching techniques. This method not only captures the essence of the participants' points of view, but it also sheds light on the miscellaneous implications of artificial intelligence in the educational landscape. In essence, this study is a valuable exploration of the complex interplay between AI and traditional teaching methods, providing a nuanced understanding of students' diverse perspectives. The research contributes to a better understanding of the evolving relationship between artificial intelligence and education by using a holistic approach.

Keywords: *Artificial Intelligence, Traditional learning, perspective, Relationship between AI and traditional teaching*

INTRODUCTION

For centuries, the traditional classroom setup has been the cornerstone of education. It typically involves a teacher imparting knowledge to a group of students in a physical setting. While this approach has served as the bedrock of learning, it's not without its limitations. Students have diverse learning needs, and traditional teaching often struggles to cater to these individual differences effectively. Learning is viewed as the mental processing of information (i.e., the construction, acquisition, organization, coding, rehearsal, storage in memory, and retrieval or non-retrieval from memory) from the perspective of cognitive theories (Schunk, 2012). The education technology industry, frequently alluded to as 'EdTech', is developing, with massive interests in nations like China, the United States and India. e-Learning or Web based learning is combined with conventional classroom learning in this day and age. The first years saw how technological

innovation acted when traditional classroom teaching was impacted by Coronavirus. The writing recognizes the utilization of virtual study halls, increased reality classrooms, web 2.0 advances, MOOCs, and numerous other internet learning conditions for granting training. According to Gestalt theory, humans can generate their own learning experiences and interpret information in the same or different ways as others, as each person has a unique perspective on the world (Boeree, 2000). The theory of transfer of learning advocates that features of the task, learner, organization and social context will have a unique impact on students' ability to use the transfer of learning (Cormier & Hagman, 2014; McKeough, Lupart & Marini, 2013). The expansion in online learning (and wording, including on the web, e-learning and distributed learning) has prompted a developing interest in assessment, the vast majority of which has focused on assessing web based

learning designs as far as: the affordances of the communication conditions (Bozick and Tracey, 2002, Lord, 2001); clients' perceptions (Veerman et al., 2000); and the sorts of abilities that clients might require (Murphy, 2004, Trigwell et al., 1999). Many examinations like those (Bos and Van de Plassche, 1995; Madhavaiah et al., 2013) express that innovation improved learning is beneficial in language procurement. Sadeghi et al. (2012) express that recognizable proof of students' individual learning contrasts and their impact on the growing experience is vital to successfully determining variety in execution. The utilization of innovation in education is far cutting edge with the development of artificial intelligence (computer based intelligence); a framework where machines are intended to imitate people. Artificial Intelligence is "the science and designing of making intelligent machines or a machine that acts in a

manner that could be thought of as savvy if it was a person." (Mccarthy, 2007). The utilization of artificial intelligence has ended up being a suitable strategy for making a significant growth opportunity for students (Conklin and Hartman, 2014). As Artificial Intelligence, creating and spreading over all aspects of the world at a disturbing rate (Tegmark, 2015). It plays a progressively significant job in our day to day routine. As the presentation of artificial intelligence and AI is catching on with many individuals, its utilization in various gadgets, applications, and administrations are becoming widespread (Zawacki-Richter et al., 2019). Therefore, it's important to give the emphasis of artificial intelligence on the education sector. Artificial intelligence may particularly help accomplish a portion of the worldwide instructive targets recognized by the global community in SDG 4: "Ensure inclusive and equitable quality education and promote life-long learning opportunities for all". Popenici and Kerr (2017) contended that the point of innovation in education is to build information and help instructing and advancing yet not to pack the process of content conveyance, control, and appraisal in schooling. Earlier studies on technology based learning concluded that these technologies were not significantly different from regular classroom learning in terms of effectiveness. The studies have to compare web-based instruction (i.e. excluding video-based courses and standalone computer applications) to face-to-face or "offline" instruction and they have to focus specifically on objective measures of student learning that are measured for both the web-based and non-web-based formats. The authors find that

students who took their classes in a blended format performed significantly better, on average, than did those taking courses through traditional, face-to-face instruction, and that there is no significant difference between the purely online and purely face-to-face formats. Also, Golonka et al. (2014b) completed an exhaustive study of 350 papers that contrasts the utilization of current innovations and conventional language getting the hang of/instructing instruments. Slavuj et al. (2017) assessed 42 examinations from 2005 to 2015 which zeroed in on versatile learning frameworks. They concluded that students are preferring more on technological based education rather than traditional face-to-face teaching. The utilization of Teacherbots (processing arrangements for the regulatory piece of instructing, managing content conveyance and managerial input and supervision) and IBM Watson (Q & A PC framework that utilizes normal language to answer questions presented by a client) are some computer based intelligence applications that are accessible to upgrade teaching and learning (Gonçalves et al., 2016). In the field of education, a learning model that depends on the consideration of contrasts in students is frequently alluded to as personalized learning. Personalized learning allows understudies to get guidance and heading when they need it. Customized learning can likewise consider a better breakdown in topic inclusion and a more flexible pathway for understudy achievement. Customized learning on a computerized platform can be acknowledged utilizing Artificial Intelligence (AI). In the ASHE report, it was mentioned that the K-12 education system in America shows an increase in reflective learning,

integrative thinking, and order thinking skills in online learning compared to conventional learning (classroom-based). In addition, in today's time, when Artificial intelligence (AI) has surprised the world, it is unavoidably expected that AI based procedures be integrated into e-learning frameworks for tackling issues like programmed ID of learning styles/mental abilities of the students really. As we all know that today's technological sophisticated world has shown a positive role of Artificial Intelligence (AI) and Machine Learning (ML) it is needed to adopt cost-effective and smart education globally. Artificial intelligence in training is acquiring popularity. As clear from the discoveries of the papers, there are fewer frameworks based on the standards of artificial intelligence. The present research will study the papers in the signifying field to get better understanding on technology based learning. In order to increase students' activity and knowledge in education, this paper will analyze the impact of developing AI-based education. This analysis generates the effectiveness of AI-based learning and if this can replace traditional based learning or not. The objective of this research paper is to investigate the preference of students towards AI driven education and their understanding of how effective it would be. We seek if today's world is in favor of the implementation of AI in education and will it actually help grow individuals' performance or not. The entire research is based on the quantitative analysis that is being conducted to emphasize on the opinion and thoughts of individuals in the education sector and from the opinion of either being a student itself, an educator or a parent. This study aims to provide valuable insights into the

effectiveness and implications of AI-driven learning in the educational landscape. The discoveries of this research can add to the developing assortment of information on the role of artificial intelligence in training and its potential to reshape academic practices. Besides, understanding the effect of artificial intelligence driven on students' performance can illuminate instructive policymakers, foundations, and teachers on the best way to harness this innovation to enhance students' achievement and encourage a more student focused way to deal with learning. In the subsequent segments of this research paper, we dig into the literature on AI driven education, present the research methodology, analyze the outcomes, and examine the ramifications of our discoveries.

Objectives

Explore the potential connection between views on AI's role in preparing students for the digital era and its impact on future employability beliefs.

To check if AI education can provide a better learning style and can be recommended to peers.

Examine the link between the importance of AI providing mentorship to students and personalized learning.

Literature Review

The research is emphasizing on the importance and implementation of AI-based education in spite of the traditional form of education. A series of studies in the past had taken place to analyze the importance of online education and if it impacts student's knowledge or not as compared to face-to-face education. In the 176 on the web learning research studies distributed

somewhere in the range of 1996 and 2008 were recognized that utilized an exploratory or semi test plan and unbiasedly estimated understudy learning results. Of these 176 investigations, 99 had somewhere around one differentiation between an included on the web or mixed learning condition and up close and personal (disconnected) guidance that possibly could be utilized in the quantitative meta-examination. In addition to the effectiveness of students, this study also focuses on the thinking of technology based education over students. Analyzing thoughts of these gives a better idea of the generation of AI-based education and will it be really important to implement or is just a myth in the tech savvy world. In order to choose how to carry out web based learning, it is essential to comprehend the practices that exploration recommends will increment viability. Start by examining the historical development of educational technology. Highlight key milestones such as the introduction of computers in classrooms, interactive whiteboards, and the rise of online learning platforms. Investigate the theoretical foundations that support the incorporation of technology in education. This may encompass learning theories, cognitive psychology, and educational philosophy. The expansion in online learning (and phrasing, including on the web, e-learning, and distributed learning) has prompted a developing interest in assessment, the majority of which has focused on assessing web-based learning designs as far as the affordances of the communication conditions (Bozik and Tracey, 2002, Lord, 2001); clients' perceptions (Veerman et al., 2000); and the kinds of abilities that clients might require (Murphy, 2004, Trigwell et al., 1999). A

notable exception is an investigation of students' fulfillment with either face-to-face or asynchronous conferencing facilities that found ladies were more fulfilled with asynchronous cooperation than men (Ocker and Yaverbaum, 2001). A comparison of Disc Rom-based educational cost of ECG and traditional class-based educational cost found no significant distinction of either evaluation marks results or mentalities between the two groups (Jeffries et al., 2003). Just as potential purposes of evaluation are diverse, the method used for the analysis is questionnaire. The questionnaire is used to analyze the behavior and prospect of the students. If student outcomes are the same whether the education is taken using AI or face-to-face, then online instruction can be used cost effectively in settings where too few students are situated in a particular geographic locale to warrant an on-site instructor. As technological capabilities grow and more customary schools embrace online training before long, schools might pick to supplant a large number of their monstrous, section level courses that are generally shown in huge auditoriums and are described by practically no singular collaboration among understudies and teachers, specialists say. Hwang and Fu (2018) did a precise writing survey of 90 articles somewhere in the range of 2007 and 2016 on cooperative versatile learning in different fields. Paramythia and Loidl-Reisinger (2003) defined that "a learning environment is considered adaptive if it is capable of: monitoring the activities of its users; interpreting these on the basis of domain-specific models; inferring user requirements and preferences out of the interpreted activities, appropriately representing

these in associated models; and, finally, acting upon the available knowledge on its users and the subject matter at hand, to dynamically facilitate the learning process” (p. 239). This significantly emphasizes the importance and implementation of AI-based learning. Technology-supported adaptive/personalized learning is a popular and important stream of research studies in the area of educational technologies. The utilization of innovation in schooling traces all the way back to the rise of first era PCs and their ensuing refreshed versions (Schindler et al., 2017). PCs have been utilized as an instructive asset (closely resembling a library or lab), as well as a method for keeping up with data sets of understudy data. (Jones, 1985). At present, Artificial Intelligence is creating and spreading over all aspects of the world at a disturbing rate (Tegmark, 2015). As the evolution of artificial intelligence and machine learning is getting on with many individuals, its utilization in various gadgets, applications, and administrations is becoming boundless (Zawacki-Richter et al., 2019). There were absolutely 70 articles from six SSCI diaries in the space of instructive advances from 2007 to 2017. In particular, these diaries were top-level instructive innovation diaries including PCs and Training, Instructive Innovation Society, Intuitive Learning Conditions, the English Diary of Instructive Innovation, Instructive Innovation Innovative work, and the Diary of PC Helped Learning. Overall, 6.4 articles connected with versatile/customized learning were distributed in these diaries every year. By the end of this analysis, the study will visualize how the environment is going to be impacted with the usage of AI in the educational sector and what effect this will have on

the new generation students. In the computerized time, complex abilities that are less simple to automate become increasingly important. Imagination and decisive reasoning are turning out to be progressively significant in the labour market, and add to a superior individual and community life. (Vincent-Lancrin et al., 2019[8]). Artificial Intelligence frameworks can likewise give customized criticism and take over managerial assignments that were recently dealt with by human educators (Chen, Chen, and Lin, 2020). As computer based intelligence innovations advance, they hold the commitment of customized and versatile learning, ongoing input, and shrewd authoritative and emotionally supportive networks (Renz, Krish naraja, and Gronau, 2020). Examine existing studies on the impact of technology on teaching and learning outcomes. Discuss research that shows advances in student involvement, academic achievement, and critical thinking skills development. Identify successful case studies and paradigms in which technology and teaching have effectively synergized. Highlight specific tactics or approaches that have been shown to improve the learning experience. These technologies have the potential to increase student engagement by providing interactive, personalized, and immersive learning environments (Malik, Tayal, & Vij, 2019; Chen, Chen, & Lin, 2020). Consider the literature on students' classroom experiences with technology. Studies on student choices, attitudes towards technology, and the impact on their overall learning experience could fall under this category. Examine the role of educational policy and institutional support in supporting technology integration in the

classroom. Discuss how government policies and institutional activities can either support or hinder technology use in education. A narrative that spans historical evolution, theoretical underpinnings, and the diverse impact on educational landscapes in the dynamic domain where technology meets with teaching. As advances in natural language processing enable applications such as plagiarism detection, assessment scoring, and automated feedback provision (Chen, Chen, & Lin, 2020; Goksel and Bozkurt, 2019), AI has the potential to assist teachers in student assessment. The historical timeline follows the incorporation of technologies such as computers and interactive whiteboards into classrooms, highlighting watershed points in the growth of educational technology. Theoretical frameworks based on learning theories, cognitive psychology, and educational philosophy provide a conceptual platform for clarifying technology's revolutionary potential in pedagogy. Extensive research has been conducted to assess the influence on teaching and learning outcomes, revealing advances in student engagement, academic achievement, and critical thinking skills development. However, the literature digs into the difficulties as well, addressing the digital divide, worries about overreliance on technology, and potential harmful impacts on social contact. Best practices and models emerge as beacons of successful integration, demonstrating techniques that improve the learning experience. Teacher professional development emerges as a major aspect, with research emphasizing the need of training programmes in ensuring appropriate technology utilization. Exploration of new technology, such as artificial intelligence and virtual reality,

adds a futuristic perspective to the discussion. The narrative weaves in student viewpoints, institutional support, and policy ramifications, exploring the multiple forces that define the marriage of technology and education. The literature review concludes by pointing to future directions, suggesting more investigation of unexplored places in this changing terrain.

Research Methodology & Scope:

The research will be certain to students' thoughts and behavior above 18 years to provide their insight and thought towards the education sector. This study is all about understanding what students aged 18 and older think and do when it comes to education. We want to know their opinions and experiences to get a clear picture of what they like and what could be better in the education system. By looking closely at their views, we hope to find useful information that can help make education better for everyone in this age group.

Sample

The research will encompass a varied group of participants, specifically targeting students aged 18 and older for the analysis. Purposive techniques are being implemented to ensure a diverse pool of people being part of the study.

Data Collection: Quantitative data:

Surveys and Questionnaires: To evaluate the shifted viewpoints because of Artificial Intelligence (AI) on customary showing strategies, we led a questionnaire-based investigation focusing on a sample size of 200 members. Our review enveloped students intending to accumulate bits of knowledge into their viewpoints. The

questionnaire principally highlighted scale-based questions, permitting members to communicate nuanced views on the effect of simulated intelligence in the domain of training. By utilizing this methodology, we tried to exhaustively comprehend and dissect the different viewpoints of the students aged 18 and above in regard to the advancing connection between artificial intelligence and traditional educating techniques.

Data Analysis:

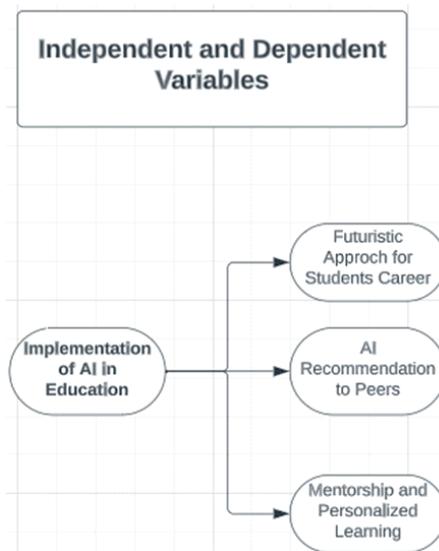
Qualitative Analysis:

Content Analysis: A deep through analysis will be conducted on the various researches being conducted in the similar field and the interpretation from the same.

Quantitative Analysis:

Correlational Analysis: This analysis will summarize the data set to understand the impact of AI in the traditional education system and how individuals will owe it.

Variables



Source: proposed model Hypothesis Futuristic approach for Student's career

H0: There is no significant association between the perception of AI preparing students for the digital era and the belief in AI preparing students for future employment

H1: There is a significant association between the perception of AI preparing students for the digital era and the belief in AI preparing students for future employment

H1: There is a significant association between the perception of AI preparing students for the digital era and the belief in AI preparing students for future employment

AI Recommendation to Peers

H0: There is no negative significant impact of AI providing different learning style and of suggesting AI based education to peers

H1: There is a negative significant impact of AI providing different learning style and of suggesting AI based education to peers

Result

H0: There is no relation of AI providing mentorship and its importance for students as compared to traditional education

H1: There is a positive relation of AI providing mentorship and its importance for students as compared to traditional education

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	281.301 ^a	9	.000
Likelihood Ratio	316.045	9	.000
N of Valid Cases	208		

a. 5 cells (31.2%) have expected count less than 5. The minimum expected count is .88.

TABLE 1. Comparison of AI preparing for digital era and the future career of students

The association between students' future enhancement and preparing students for the digital era stands positive as the significant value is less than 0.05 and therefore the alternative hypothesis is being accepted. Hence, there is a significant positive association between the perception of AI preparing students for a digital era and belief in AI preparing students for future employment.

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	300.007 ^a	9	.000
Likelihood Ratio	322.572	9	.000
N of Valid Cases	208		

a. 6 cells (37.5%) have expected count less than 5. The minimum expected count is .56.

TABLE 2. Comparison of AI providing different learning style and students suggesting AI education to peers

The impact between AI providing a different learning style and suggesting it to peers stands positive as the significant value is less than 0.05 and therefore the alternative hypothesis is being accepted. Hence, there is a significant negative association between AI providing a different learning style and suggesting it to peers.

		Can AI effectively replicate the mentorship and guidance provided by human teachers?	How important do you think AI based education is for students?
Can AI effectively replicate the mentorship and guidance provided by human teachers?	Pearson Correlation	1	.518**
	Sig. (2-tailed)		.000
	N	108	108
How important do you think AI based education is for students?	Pearson Correlation	.518**	1
	Sig. (2-tailed)	.000	
	N	108	108

** . Correlation is significant at the 0.01 level (2-tailed).

TABLE 3. Comparison of AI providing mentorship and its importance for students

The relationship between AI providing mentorship and its importance for students as compared to traditional education stands positive as the significant value is less than 0.05 and therefore the alternative hypothesis is being accepted. Hence, there is a significant positive relationship between AI providing mentorship and its importance for students as compared to traditional education.

Discussion

The study involved a total of 111 student's responses. The reason behind the decrease in no. is because of the time constraints. The above tables clearly show the

effectiveness in AI-based education and students' opinions on the same. Based on Table 1, there has been a significant association ($p < 0.05$) and it is found that students believe in AI based education and it can prepare them for a better future using the technology into consideration. The result relates with the previous discussion on various research papers of AI effectiveness and its better usage for students' careers. A more appropriate result can be identified with an increase in the no. of responses which are restricted because of a limited time period. To assess the results further it is important to consider that the previous papers on relative topics have a different characteristic as compared to ours. Most of the previous studies have focused on qualitative analysis to understand the impact of artificial intelligence on education and how it can affect the traditional education system. Most of them are review based and give an overview on what artificial intelligence is and how it can impact the traditional teaching methods just on the basis of advantages and disadvantages. In few other studies, where quantitative analysis is taken into consideration is based on foreign countries and where artificial intelligence is already implemented in education to some extent. They had studied the after effects of AI in education based on students' opinions. The approach for our analysis is quantitative based as to analyze the implementation of AI based education, based on students' opinion aged above 18. Here, the opinion of students includes if AI can provide better learning style, mentorship, future career growth, preparing for the digital era, recommendation to peers and its overall effectiveness as compared to traditional classroom teaching methods.

It includes a more enhanced version and output of how AI in education can impact the overall personality of students and if it will be viable for them according to their thought process. Under table 2 of the analysis, since ($p < 0.05$) which means a positive significant value and hence it is found that there is a negative impact between the learning style adopted by AI and the recommendation to peers. This analysis can be considered and assumed that it might be a possibility of AI not understanding the learning style of individuals and also to think if it can be suggested to the peers for better education or not. A more focused and enhanced analysis can take place in the future with respect to the analysis and the outcome of the same. Other studies also proved a satisfactory level of AI in understanding the learning style of students individually. The subject for the analysis were 18 and above students who are in their teenage or adulthood, keeping in mind they have a better knowledge and understanding of fast moving technology in the time and if it can also be applied into the education sector as found in all the sectors working in the world. From table 3, the relationship between artificial intelligence providing mentorship and its importance to students has a positive relation because the significant correlation value ($p < 0.05$) holds true for accepting the alternative hypothesis. This clearly states that, students who have hunches of AI can provide a better mentorship to students and done by human teachers and they feel it highly important for the students of gen z as well as for the upcoming one. Not only this, the result also emphasized on the fact that in the coming time students are more likely to depend on technology

and somehow, incorporating artificial intelligence and other advanced technologies can help the education sector to cope with the generation and keep them focused for their studies. The overall study and results suggest that AI is going to play a crucial role in the coming time and to some extent students believe in the incorporation of AI in education and this will be highly beneficial for the students to keep them standing in the high moving society. Since, the entire study is based on opinion and hunches in any case, we need to see that this comparison result was not derived from psychological studies. Consequently, we shouldn't interpret the result as a demonstrated reality according to a psychological point of view.

Conclusion

The new analysis being done in this research emphasizes on the impact of artificial intelligence in education and will the students be able to cope with it or more comfortable with the traditional teaching method. The overall results for the analysis is more or less in favor that AI can help better in the education development of individuals. It studied the opinion of students on AI using questionnaires but not the overall psychological study being conducted and therefore more in depth psychological studies can be conducted to get a better understanding on how students will come to act on the coming involvement of artificial intelligence in the education field. This shift in the field where students have shown their interest can be as effective to provide new learnings and insights in today's world. With the beneficiaries of implementation of AI there come few challenges and ethical consideration on the same that is not taken much into

consideration for the paper but with review of various others paper it can be concluded that there are a few challenges and risk that will definitely arise and if more focused is being put on implementing AI in education then at the very same time need to analyze and work on the challenges that might arise from the same. The more good it can be, the worse it might be. Artificial intelligence is one key that can provide many new technological developments in the education field but at the same time can be risky for students as it might distract students from their growth potential and a possibility of students depending more on AI tools such as ChatGPT nowadays. It is important to keep a note of effective use without being dependent on them and therefore, it's important to see the level of effectiveness it can generate and to what extent it should be taken into consideration. More detailed research can be conducted with certain AI tools to analyze the understanding of students on topics undertaken with the help of technology and also how overall technology is impacting the students with its educational field. Students in their adolescence, the view and opinion of them matters to a great extent as it will help in better understanding of using AI in education and its impact on them. This technological development is taking place at a high pace and therefore its high time to work and understand the impact of technology in the education field and its effectiveness as well. This shift from traditional to online or distance based learning and now moving with the incorporation of artificial intelligence in education is moving in a significant positive direction and students are coming with a positive opinion on the same.

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