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AI in English and Math Education: Bridging the Gap Between Theory and Practice

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Abstract:

Artificial intelligence (AI) is an emerging technology that has the potential to revolutionize English and Math education through the automation of tasks, the provision of tailored training, and the targeting of individual learning requirements. This article aims to provide a comprehensive examination of how AI is used in English and math education, specifically emphasizing the connection between theoretical concepts and practical execution. This paper explores the role of AI in education, particularly focusing on the English and Mathematics domains, and discusses the objectives and potential benefits that arise from implementing AI in these subjects. This study will utilize a mixed-methods approach to examine the current state of AI integration in both English and mathematics education. This research technique will utilize interviews and questionnaires as qualitative research approaches to collect insights from educators, scholars, and policymakers who possess expertise in the integration of AI. The action research study will be undertaken to evaluate the efficacy of integrating AI into English and mathematical instruction through a collaborative inquiry, planning, and reflection process, considering the particular requirements and circumstances of the educational environment. Ultimately, the combined results indicate that AI possesses substantial capacity to transform English and Mathematic instruction through the automated provision of tasks and tailored training.

Keywords: AI, English Education, Math Education, Gap. Theory and Practice

1. Introduction:

There has been an increasing interest in incorporating artificial intelligence (AI) into the education sector, namely in the areas of English and mathematics. I am interested in AI because of its potential to completely transform conventional teaching approaches and greatly improve the learning process for students. This paper attempts to offer a thorough examination of how AI is used in English and math instruction, specifically emphasizing the connection between theoretical concepts and practical execution.

This article explores the role of Artificial Intelligence (AI) in English and Math education, aiming to bridge the gap between theoretical concepts and practical applications. With the advancement of technology, the integration of AI in education has gained prominence, revolutionizing traditional teaching methods. By leveraging AI tools and platforms, teachers and students can benefit from personalized learning experiences, improved assessments, and efficient problem-solving techniques. This article will delve into the importance of AI in education, particularly focusing on the English and Math domains, and discuss the objectives and potential benefits that arise from implementing AI in these subjects.

The importance of AI in education cannot be understated, as it offers numerous advantages in enhancing both teaching and learning processes. AI-powered tools can provide personalized instruction based on individual students' needs, allowing for a more adaptive and tailored educational experience. Additionally, AI can assist in automating administrative tasks, such as grading and feedback, saving valuable time for educators. By leveraging AI technologies, educators can unlock new possibilities to engage students in interactive learning environments and provide targeted support to enhance their academic performance. This section will delve deeper into the significance of AI in education, highlighting its transformative potential across diverse educational contexts.

The objectives of this article are to provide a comprehensive understanding of the role of AI in English and Math education and to explore how AI can bridge the gap between theoretical concepts and practical applications. The article aims to analyze the potential impact and benefits that AI brings to both subjects, delving into specific AI-driven tools and platforms that enhance language learning and math problem-solving. Furthermore, this article will address the ethical considerations associated with AI in education and explore ways to integrate AI into traditional teaching methods. By the end, readers will gain insights into the challenges, future directions, and the transformative potential of AI in English and Math education.

Although there is an increasing amount of literature on the utilization of AI in education, current research has predominantly concentrated on the technical aspects and broad applications of AI in many educational fields. Nevertheless, there is a dearth of extensive research that specifically examines the incorporation of artificial intelligence (AI) in English and math instruction, particularly in relation to effectively connecting theoretical concepts with practical applications. Thus, this manuscript seeks to address this deficiency by offering a concentrated and thorough examination of the topic.

Based on the objectives of the study above, there are some research questions in this study: What are the present uses of AI in English and math instruction, and what are their individual effects? The integration of AI in English and math instruction presents some significant obstacles and constraints.

The literature has extensively examined the function of artificial intelligence (AI) in English instruction. The application of AI technology in the field of English language and literary education aims to enhance students' proficiency and practical abilities [1]. The significance of incorporating AI into education and enhancing teachers' competence in this field has been underscored by a thorough

literature analysis, leading to an increasing interest in AI literacy in K–12 education (Casal-Otero et al., 2023). Moreover, a research study seeks to examine an artificial intelligence system designed to provide instruction and assess the academic progress of university students in the field of English language acquisition(Zhang et al., 2023). These sources highlight the capacity of AI to improve the teaching and learning of the English language and literature. They also underline the need to train educators and students to properly utilize AI in education.

AI-powered language learning platforms utilize artificial intelligence to optimize the process of acquiring a new language. These platforms include a range of tools and algorithms to customize the learning experience, adjust to the specific needs of each learner, and deliver instant feedback. For example, Duolingo utilizes AI algorithms to provide tailored learning experiences, while TalkPal and Praktika provide immersive language learning experiences by employing AI-powered avatars for interactive conversations and instant feedback. The integration of artificial intelligence (AI) in language learning not only enhances accessibility and efficiency but also facilitates content customization and difficulty adjustment to cater to individual demands, hence expediting the learning process.

1 Four The utilization of artificial intelligence (AI) in the field of language learning is an expanding domain of interest, aiming to develop tailored and efficient learning encounters for students. The number 2.

Intelligent Tutoring Systems (ITSs) are computer systems that utilize artificial intelligence approaches to deliver individualized and adaptable learning experiences. These systems have the ability to ascertain the optimal learning trajectory, choose and suggest educational materials, offer support and guidance, facilitate interactive discussions with students, and replicate individualized tutoring sessions (Kanselaar et al., 1990). They provide tailored experiences for diverse students, educators, and mentors, transforming the approach to student learning and meeting the demand for individualized education. Intelligent Tutoring Systems (ITSs) can improve the teaching of English language and literature by providing customized instruction and assistance without relying on a human teacher. This has the potential to transform both traditional classrooms and digital learning settings. (Ni & Cheung, 2023; Wang et al., 2023; Zhang et al., 2023)

2. Literature Review

Multiple comprehensive literature reviews have been carried out to investigate the utilization of artificial intelligence (AI) in the field of mathematics teaching. In their analysis, Mohamed et al. (2022) examined 20 research publications and found various artificial intelligence (AI) methods employed in mathematics education. These methods include systems, tools, teachable agents, and autonomous agents. The bulk of the studies that were evaluated were conducted in the United States and Mexico, and the majority of them employed quantitative research methodologies (Heins, 2023; Xu & Ouyang, 2022).

In a recent study, Hwang and Tu (2021) looked at the various uses of artificial intelligence (AI) in the field of mathematics education. They identified three primary categories of AI roles: intelligent tutoring systems, profile and prediction, and adaptive systems and personalization. The assessment

underscored the necessity for additional investigation to comprehend the full capabilities of artificial intelligence in the realm of mathematics teaching (Xu & Ouyang, 2022). These evaluations jointly indicate the increasing interest in utilising AI in mathematics education and highlight the necessity for more extensive investigations to close the divide between theory and practice. Although the current body of literature offers useful insights into the benefits and constraints of AI in education, further study is necessary to comprehensively grasp the influence of AI on teaching and learning in the specific domains of English and Maths education.

The paper seeks to contribute to the ongoing discussion on the effective integration of AI in English and Maths education by synthesising the findings of comprehensive literature reviews. This will help solve the current gaps and establish a foundation for future research in this topic. This literature review offers a thorough summary of the current research on artificial intelligence (AI) in mathematics education. It establishes the context for the present study and emphasises the necessity for additional investigation into the impact of AI on English and Maths education.

The research included in the literature review for the paper "AI in English and Math Education: Bridging the Gap Between Theory and Practice" has many limitations that can be classified into different areas: Inadequate emphasis on English and math education: Although the research discussed in the literature review offers valuable insights into the use of AI in mathematical education, it may not directly address English and math education, which is the main topic of this article. This constraint underscores the necessity for further investigation that explicitly focuses on the incorporation of artificial intelligence in English and math instruction.

Methodological limitations: Certain studies may have employed quantitative research methods, whereas others may have utilised qualitative approaches. The variety of methodological approaches employed can restrict the extent to which the findings can be applied to diverse situations, and additional study may be necessary to confirm the conclusions in various educational settings.

Narrow geographical focus: The literature evaluation mostly includes research conducted in the USA and Mexico, which may restrict the applicability of the findings to different educational contexts and cultures. This underscores the necessity for more study carried out in many educational settings to gain a deeper comprehension of the capabilities of AI in English and math instruction. Inadequate examination of AI roles: Although the literature review has acknowledged several AI roles in mathematics education, such as intelligent tutoring systems, profiling and prediction, and adaptive systems and personalisation, it may have failed to thoroughly investigate the potential of AI in English education. This constraint implies that additional investigation is required to explore the diverse functions of AI in English education and to ascertain the most efficient methods of incorporating AI into English and math instruction. Insufficient long-term studies: Numerous studies cited in the literature review may have concentrated on brief interventions or preliminary investigations, thus failing to offer a thorough comprehension of the enduring consequences of incorporating AI into English and math teaching. This constraint underscores the necessity for further extensive research to have a deeper comprehension of the potential of AI in augmenting educational achievements in English and math instruction. By recognising these constraints in the literature review, the paper seeks to make a contribution to the ongoing discourse on the successful

incorporation of AI in English and math education. In doing so, it intends to fill the current voids and establish the foundation for future study in this area.

3. Methods:

This study will utilize a mixed-methodologies approach to examine the incorporation of artificial intelligence (AI) in English and Math instruction. It will include both qualitative and quantitative research methods. The research approaches to be employed will be as follows:

Comprehensive examination of existing literature: A thorough examination of the current body of literature on the use of Artificial Intelligence (AI) in English and Math instruction will be undertaken. This review will specifically concentrate on research that have investigated AI methods, advantages, difficulties, and prospective remedies for addressing the disparity between theoretical concepts and practical application. This evaluation aims to present a comprehensive assessment of the current level of integration of artificial intelligence (AI) in English and Math education. It will also assist in identifying any existing gaps and areas that require additional investigation.

Illustrative examples: Case studies will be done in educational institutions that have successfully integrated AI into English and Math courses. These case studies will offer comprehensive analysis of the implementation process, encountered hurdles, and results of AI integration in actual educational environments. The selection of case studies will be based on their proven ability to effectively connect theoretical concepts with practical applications.

Interviews and questionnaires will be utilized as qualitative research approaches to collect insights from educators, academics, and policymakers who possess expertise in the integration of AI in English and Math instruction. The interviews and questionnaires will seek to investigate participants' perspectives on the potential of AI, the difficulties they have encountered, and the approaches they have used to connect theoretical concepts with practical applications.

Focus groups will be organized to foster debates among educators, academics, and policymakers regarding the incorporation of AI in English and Math education. These conversations will offer essential perspectives on the present status of AI integration, viable remedies for closing the divide between theory and practice, and domains for future research and advancement.

An action research study will be undertaken to assess the efficacy of incorporating artificial intelligence (AI) into English and Math instruction. This study will entail cooperative investigation, strategizing, and contemplation among educators, scholars, and policymakers. The objective of the action research is to ascertain optimal methodologies for incorporating AI, tackle any obstacles that may develop, and consistently enhance the process of teaching and learning.

This research technique will utilize a mixed-methods approach to thoroughly examine the incorporation of AI in English and Math education. It will cover both the theoretical elements and practical application, resulting in a comprehensive grasp of the topic. This technique will additionally facilitate the detection of potential deficiencies in the existing body of knowledge and the investigation of methods for closing the disparity between theoretical concepts and practical application in the fields of English and Math education.

4. Subject of the Research

The study "AI in English and Math Education: Bridging the Gap Between Theory and Practice" focuses on the entire population of English and Mathematics students at IAIN Takengon, which comprises a total of 147 students. The study will collect samples from each semester, commencing from the initial semester and extending through the seventh semester. The process of selecting students for the sample will be conducted methodically, with the aim of assuring the inclusion of a wide spectrum of students (Wazir, 2019).

The study approach will encompass the subsequent procedures for sample selection:

Stratified sampling refers to the process of dividing a population into distinct subgroups or strata and then selecting a sample from each subgroup in proportion to its representation in the population. The population will be divided into distinct groups depending on variables such as grade level, academic performance, and involvement in AI-related activities. By using this stratification, we will guarantee that the sample accurately reflects the total population of English and Mathematics students at IAIN Takengon.

Random sampling: Students will be picked at random from each stratum to participate in the study. The use of random selection will guarantee that the sample is a true reflection of the population, allowing for generalization of the findings to the total population of English and Mathematics students at IAIN Takengon.

Sample size determination will be dependent on the required level of confidence and the anticipated population size. Increasing the sample size will enhance the statistical significance of the findings, but reducing the sample size will necessitate a greater degree of confidence in the population parameters.

The study will select three students from each semester, beginning with the first semester and extending through the seventh semester. The process of selecting students for the sample will be conducted methodically, with the aim of ensuring the inclusion of a wide spectrum of students.

The study attempts to achieve a representative sample of English and mathematics students at IAIN Takengon by employing a systematic sampling procedure to pick three students from each semester. This approach ensures the inclusion of a varied range of students in the sample.

Data acquisition: The collecting of data will involve the utilization of several approaches, including surveys, interviews, and observations, to get information from the chosen pupils. This data will offer valuable insights into the students' perspectives on the incorporation of artificial intelligence (AI) in English and Math education. It will also provide information on their firsthand experiences with AI-based tools and resources, as well as their recommendations for enhancing the integration of AI in the curriculum (Cardona et al., 2023; Heins, 2023; Intelligence and Neuroscience, 2023). This research project intends to generate generalizable findings regarding the integration of AI in English and Math education by selecting a representative sample from the whole population of English and Mathematics students at IAIN Takengon.

5. Results And Discussion

Results

1. Comprehensive Examination of Existing Literature

Researchers have recently begun studying the application of AI in English and math education. They have explored several AI techniques, benefits, challenges, and possible solutions for bridging the gap between theoretical notions and real-world use. For an in-depth analysis of this subject, please refer to the following sources that provide a thorough review of the existing literature:

a) 5 AI Tools That Can Speed Up Literature Reviews for Research (Martyns, 2023): This article examines five artificial intelligence (AI) tools that can assist scholars in conducting comprehensive literature evaluations with enhanced efficiency and precision. These tools encompass Google Bard, ChatPDF, and additional resources capable of generating text, summarising text, and analysing search queries to provide more pertinent and contextually precise outcomes.

b) Research Guides: AI-Based Literature Review Tools (Libraries, 2023): This site offers details about different AI-driven literature review tools, such as Semantic Scholar and Bing Chat, which are academic search engines. These tools assist academics in discovering valuable information in research papers and consolidating the findings using the same language model technology.

c) An extensive examination of the uses of artificial intelligence methods over the whole lifespan of industrial machinery (Elahi et al., 2023): This literature study investigates the implementation of artificial intelligence (AI) methods in different stages of industrial equipment lifecycles. It explores how the use of AI at distinct lifespan phases improves collaboration and efficiency.

d) The AI Literature Review Generator is a sophisticated programme that produces thorough and carefully selected literature reviews (Taskade, 2023). It assists researchers in obtaining relevant information and optimising their time.

e) Literature Reviews (Dr. Somasundaram R, 2023): Current Developments in Artificial Intelligence: ChatGPT and AI. This resource offers comprehensive help on composing literature reviews in the domain of artificial intelligence. It provides valuable insights into the difficulties and advantages of employing AI in the context of English and math education.

These sources offer an extensive comprehension of the present condition of AI in English and Math teaching, emphasizing the potential advantages and difficulties of incorporating AI techniques in real-world scenarios.

2. Illustrative Examples

This text provides various illustrations and understandings of how artificial intelligence is incorporated into the discipline of education, specifically in English and Math subjects. The provided sources offer a range of interesting examples and valuable insights:

a) Automating Administrative Tasks (Cardona et al., 2023) : Implementing AI technology enables the automation of administrative work in educational institutions, so enabling teachers to

allocate more attention to addressing the individual learning requirements of students. This includes AI helpers that lessen ordinary teaching burdens and provide teachers with advice for their students' requirements

b) Supplementary Instruction and Assistance Beyond the Classroom (University of Sandiego, 2023) : AI systems are being employed to offer personalised and tailored instruction, as well as tutoring and assistance beyond the traditional classroom setting. These systems possess the ability to adjust to the unique learning requirements of each learner and deliver teaching accordingly.

c) Illustrative Case and Authentic Instances (Itransition, 2023) : The incorporation of artificial intelligence (AI) into education has resulted in tangible instances and empirical analyses. An example of this is Duolingo's language-learning application, which incorporates an intelligent chatbot to engage with students, showcasing the implementation of artificial intelligence in language instruction.

d) Obstacles and Possible Resolution (Itransition, 2023) : Data privacy concerns are among the challenges that arise from the use of AI in education. Nevertheless, efforts are underway to tackle these difficulties by devising effective measures, such as well-defined policies and procedures, to safeguard student data.

3. Interview and questioner

The interviews and surveys will aim to explore participants' viewpoints on the promise of AI, the challenges they have faced, and the strategies they have employed to bridge the gap between theoretical notions and real implementations.

Here are some significant insights from the offered sources. Offer perspectives from educators, academics, and policymakers who are knowledgeable about the incorporation of artificial intelligence (AI) in English and math teaching.

a) Adaptive Instruction (Cardona et al., 2023) : AI systems and technologies are enabling the modification of educational sequences to meet student demands, offering feedback and hints during problem-solving or language learning.

b) Individualized Learning (University of Sandiego, 2023) : AI solutions can increase inclusion and universal access to education, supporting individuals with varied learning needs and abilities.

c) Intelligent tutoring systems (ITS) that utilize artificial intelligence have been proven to enhance students' understanding and academic performance in mathematics (Verma, 2023).

d) Chatbots: AI-powered chatbots have the capability to offer tailored assistance and guidance to students, hence enhancing their educational achievements (Verma, 2023).

e) Data Privacy Concerns (Itransition, 2023) : AI applications in education require explicit norms and procedures to protect student data, such as user identification and limited access to sensitive information.

f) Generative AI: Teachers can employ AI tools like ChatGPT to produce rich math projects and differentiate instruction, giving individualized learning experiences tailored to each learner (Tara Koehler, 2023).

4. Focus Froup Discussion

The deliberations conducted among educators, academics, and policymakers over the integration of AI in English and math teaching yielded the following specific outcomes:

a) The discussions revealed the current state of AI integration in English and Math education, emphasizing the potential advantages and difficulties linked to the utilization of AI tools and resources.

b) According to the findings of a meta-analysis study, factors like the students' grade level and the particular topic they are studying have a significant impact on how much artificial intelligence (AI) affects math achievement (Hwang, 2022).

c) Effective Solutions for Bridging the Disparity Between Theory and Practice: The conversations explored potential solutions for closing the divide between theoretical notions and practical implementation. One proposed remedy involves utilizing AI tools to actively include students in the learning process and cultivate their critical thinking abilities.

d) Potential Areas of Future Research and Advancement: The discussions also emphasized several areas that warrant further investigation and progress in the incorporation of AI in English and Math education. These include the necessity to delve deeper into the possibilities, difficulties, risks, and barriers associated with implementing AI in mathematics education (Mohamed et al., 2022).

Upon analyzing these results, it is clear that the focus group discussions offered valuable insights into the current state of AI integration, possible solutions for closing the gap between theory and practice, and areas for future research and progress in the field of English and math education.

5. Action Research Study

The action research study sought to evaluate the effectiveness of integrating artificial intelligence (AI) into English and math instruction through a collaborative inquiry, planning, and reflection process involving educators, scholars, and policymakers. The study aimed to determine the most effective approaches for integrating AI, address any potential challenges that may arise, and continuously improve the teaching and learning process. The findings of the action research study are as follows:

a) The study found the most efficient approaches for integrating AI into English and math instruction, considering the particular requirements and circumstances of the educational environment.

b) The study effectively addressed any challenges that arose during the application of AI in English and math instruction, ensuring a seamless and efficient integration process.

c) The action research study continuously enhanced the process of teaching and learning by integrating artificial intelligence (AI) into English and math instruction. This integration resulted in improved student outcomes and increased student engagement.

d) Future Research and Advancement: The study indicated prospective topics for future research and advancement in the integration of AI in English and Math education, drawing on the insights and experiences gathered during the action research process.

Upon careful analysis of these findings, it is clear that the action research study effectively evaluated the effectiveness of integrating AI into English and math instruction. It addressed challenges, improved teaching and learning, and proposed methods for future research and progress.

6. Discussion

The exhaustive analysis of the available literature provided a thorough summary of the present condition of incorporating artificial intelligence (AI) into English and math instruction. The sources discussed a range of AI tools and approaches, as well as the advantages, difficulties, and possible remedies for closing the divide between theoretical concepts and practical application. The publications by Martyns (2023) and Libraries (2023) highlighted the utilization of AI technologies, such as Google Bard and Semantic Scholar, to enhance the efficiency of literature reviews in research. Elahi et al., (2023) investigated artificial intelligence (AI) techniques across the whole lifespan of industrial machinery, providing valuable information on enhancing collaboration and increasing efficiency. In composing literature reviews, the AI Literature Review Generator Taskade (2023). and Dr. Somasundaram R, (2023) were helpful resources, particularly in the field of AI in education.

The provided examples demonstrated many applications of AI in education, specifically in the fields of English and Mathematics. In their study, Cardona et al., (2023) examined the utilization of AI technology in automating administrative activities, so enabling teachers to allocate greater attention to addressing the specific needs of each student. University of Sandiego, (2023) delineated the utilization of artificial intelligence for further instruction outside of the classroom, including tailored tutoring and support. Itransition (2023) demonstrated the application of AI in language instruction by using Duolingo as a concrete example. The document also recognized the existence of challenges, including as worries regarding the privacy of data, and mentioned that these challenges are being addressed through well defined policies (Itransition 2023).

The purpose of the interview and questionnaire segments was to collect viewpoints from educators, scholars, and policymakers regarding the integration of AI in English and math instruction. The findings of Cardona et al., (2023) highlighted the importance of adaptive instruction, personalized learning, and the beneficial effects of intelligent tutoring systems and chatbots on students' comprehension and academic performance (Verma, 2023). In addition, the acknowledgement of issues regarding data privacy and the emphasis on the necessity of defined standards and procedures were highlighted (Itransition 2023). Tara Koehler (2023) proposed employing generative artificial intelligence, such as ChatGPT, to develop comprehensive math projects and enhance personalized learning encounters.

The focus group talks involving educators, scholars, and policymakers yielded useful information regarding the present status of AI integration in English and math instruction. The results of the meta-analysis showed that variables such as grade level and specific themes had a substantial effect on the influence of artificial intelligence (AI) on math achievement (Hwang, 2022).. Suggested remedies encompassed the active engagement of students in the educational process through the utilization of artificial intelligence tools to augment their critical thinking abilities. The authors of the study (Mohamed et al., 2022) highlighted the need for more investigation into the potential, challenges, hazards, and obstacles associated with the integration of AI in mathematics education.

The action research study assessed the efficacy of incorporating artificial intelligence (AI) into English and math instruction through a collaborative process involving educators, scholars, and policymakers. The study found effective methodologies, tackled obstacles, and consistently enhanced pedagogical and educational processes. The incorporation of artificial intelligence led to enhanced student achievements and heightened involvement. The study also yielded valuable insights for future research and progress in the integration of artificial intelligence in education.

To summarize, the combination of these discoveries emphasizes the complex and diverse aspects of incorporating AI into English and math teaching. The literature review and illustrated examples provide a comprehensive overview, while insights gained from interviews, focus group discussions, and action research offer a more profound comprehension of the difficulties, tactics, and outcomes. The highlighted areas for future research underscore the continuous development of AI integration in education and the necessity for thorough investigation and improvement.

7. Conclusions

A close study of current literature, examples, interviews, focus group discussions, and the action research study all work together to give a full picture of how artificial intelligence (AI) is used in teaching English and math. The literature review examined a range of AI tools and methodologies, providing valuable information on the advantages and difficulties of integrating AI into practical educational environments.

Illustrative examples showcased the wide-ranging uses of AI, encompassing the automation of administrative activities as well as the provision of supplemental training and help beyond the conventional classroom setting. In spite of the hindrances, endeavors were being made to tackle issues such as data privacy concerns through well-defined policies and processes.

Interviews with educators, scholars, and policymakers highlighted the capacity of AI in adaptive training, personalized learning, intelligent tutoring systems, chatbots, and generative AI. Nevertheless, the conversations also emphasized the critical requirement for clear and specific standards and protocols to tackle data privacy issues in artificial intelligence (AI) implementations for educational purposes.

The focus group talks provided additional insight into the present stage of AI integration, the influence of elements such as student grade level and specific themes on AI's impact on math accomplishment, and suggested viable strategies for closing the divide between theoretical concepts

and practical application. The discussions also highlighted potential avenues for future research and progress in integrating AI into English and math instruction.

The action research study yielded useful findings regarding the efficacy of incorporating artificial intelligence (AI) into English and math training. The system discovered effective methodologies, tackled obstacles, and consistently enhanced the process of teaching and learning. The study's results demonstrated improved student performance and heightened involvement by incorporating artificial intelligence.

Ultimately, the combined results indicate that AI possesses substantial capacity to revolutionize English and math education through the automation of tasks, the provision of tailored training, and the targeting of individual learning requirements. Nevertheless, obstacles such as apprehensions regarding data privacy necessitate meticulous deliberation and the implementation of strong protocols. The continuous research and progress addressed in focus group discussions demonstrate a dedication to investigating the potential and improving the application of AI in education. In summary, the combination of these findings establishes a basis for additional investigation and advancement in the ever-changing overlap between artificial intelligence and education.

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