



Revolutionizing Education: The Role of AI Tools (ChatGPT & META AI) in Enhancing Teaching Methodologies and Subject-Specific Knowledge Delivery at GDC Lakki Marwat

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Abstract

The research paper explores the potential of AI tools (ChatGPT and META AI) to support teaching and improve student learning at GDC Lakki Marwat. The rising fusion of technology in education is addressed by the AI tools being viewed as revolutionary in numerous educational settings and offers educators with fresh possibilities to seek a deeper and more comprehensible way of teaching their students. The quantitative method was adopted and data was gathered using closed ended questionnaire that was given to 12 teachers who represented various disciplines at GDC Lakki Marwat. The aim of the research was to determine the perceived efficacy of such AI tools explaining difficult topics, as a supplement of textbook materials, personalised learning, enhancing student activity, and innovating new teaching methods. The results indicate that the perception towards AI tools is rather strong, and 67% of teachers noted that AI can positively affect their skills in explaining the most complex concepts, simplifying the complex material and making it more easily comprehensible. The other important finding is that, 67% of the teachers indicated that they have adopted new teaching approaches due to the incorporation of AI, like adaptive learning methods and flip classes, which is increasingly common because of the power of AI.

Keywords: Education, AI tools, ChatGPT, META AI, GDC Lakki Marwat, Teaching Methodologies

1. INTRODUCTION

1.1. Background of the Study

Artificial Intelligence (AI) has become a revolutionary force whose applications are highly comprehensive and applicable to various fields, especially in the education sector. Being one of the major technological innovations, AI is not only transforming teaching techniques, it is actually redefining the ways of providing and acquiring knowledge by students. Research has revealed that AI applications, including ChatGPT and META AI, have transformed the world of education as it offers students individual learning experiences and creates an environment of interactive and more active learning between learners and teachers (Smith, 2023). These resources can dramatically transform the practises in education by



enhancing content delivery to be more interactive and relevant especially within the settings where the teachers-students ratios are high, there are constraints in resources, and access to education is a problem. In addition to helping teachers, AI tools are also important in streamlining the way the students learn. Knowledge gaps can be bridged by the fact that AI can provide students with real-time feedback to keep them engaged and comprehend the material better. It has been found that instant feedback may increase student retention rates and make more students take up self-directed learning, which is critically important to long-term academic outcomes (Johnson & Lee, 2023). In addition, AI allows the collaborative learning process by creating the environment of interactive education, where students and teachers have the opportunity to share ideas, ask questions, and participate in problem-solving. This aspect of learning is collaborative and therefore enables students to think critically and always seek to improve which makes them ready to face challenges in the future. This study analyses the role of AI tools in GDC Lakki Marwat teaching, specifically, the improvement of subject knowledge and the development of teaching techniques. The research will explore the possibility of using AI to solve the perennial issues affecting educators and students in rural Pakistan, through the examination of this distinctive learning environment. Moreover, it discusses how AI tools can provide more individualised learning experience, which will make the process of education more equal and effective in areas with the scarcity of resources. The results of the current research will be added to the existing discussion on the role of AI in contemporary education and illustrate the fact that it can transform the teaching methods and the learning experience in not only Pakistan but also other low-resource advantageous conditions throughout the world. In this exploration, the study will attempt to address the transformational nature of AI tools and how they can help to revolutionise the educational experiences in the developing world and the developed world.

Following are the research questions:

- i. How do AI tools like ChatGPT and META AI improve subject-specific knowledge delivery at GDC Lakki Marwat?
- ii. What impact do AI tools like ChatGPT and META AI have on teaching methodologies in classroom instruction at GDC Lakki Marwat?

1.2. Statement of the Problem

The problem addressed in this study is the limited integration and utilization of AI tools, such as ChatGPT and META AI, in enhancing teaching methodologies and subject-specific knowledge delivery at GDC Lakki Marwat. Although AI tools have significant potential to support personalized learning, improve student understanding, and create more interactive teaching environments, their application in this educational setting has not been fully explored. This study aims to evaluate how AI tools can improve teaching practices and subject knowledge delivery at the college.

1.3. Significance of the Study

The use of AI in the educational environment, including ChatGPT and META AI, is a tremendous prospect in changing the teaching and learning experience, especially in under-resourced communities, like GDC Lakki Marwat. The proposed research is important because it focuses on direct effects of AI tools on quality of knowledge delivery of subjects and teaching methods development. In



a place with a limited supply of educational resources, AI can close the gaps, availing to students and teachers creative solutions in order to enhance the results of the learning process. Studying the capability of these tools to deliver subject knowledge better, this research would be valuable to comprehending the significance of AI usage to make the challenging concepts easier to access and more interesting to students and, therefore, enhance retention and academic outcomes. By illuminating the beneficial impact of AI tools on such a setup, the research will also not only demonstrate the potentially so-called transformational value of AI in the Khyber Pakhtunkhwa setting but will also serve as a template to other corresponding institutions in need of implementing AI into their educational methodologies. The proposed research is expected to establish a groundwork to develop more research and policy suggestions regarding how to expand the application of AI technology in the education field, especially in the regions with fewer resources and modern technologies.

1.4. Delimitation of the Study

The delimitation of this study is centered on the use of AI tools, specifically ChatGPT and META AI, within the context of Government Degree College (GDC) Lakki Marwat, Khyber Pakhtunkhwa. The study focuses solely on the experiences of teachers in this particular institution, excluding other colleges or educational institutions in the region. Additionally, the research is limited to the teaching methodologies and subject knowledge delivery aspects, rather than exploring broader impacts such as student learning outcomes or administrative efficiency. The study also focuses on teachers who have had exposure to AI tools, meaning those who have integrated ChatGPT and META AI into their teaching practices, thus excluding educators who have not yet utilized these technologies. Furthermore, the research does not delve into the technical challenges or infrastructure limitations associated with AI implementation but instead concentrates on the pedagogical aspects of AI use in the classroom.

2. REVIEW OF RELATED LITERATURE

AI technology has recently been integrated into the contemporary educational system and it has a dynamic response to centuries old teaching problems. According to Smith (2023), AI has transformed the process of education and the methods used by educators during teaching and learning and facilitated more individualised and adaptive learning processes. AI enhancements, including ChatGPT and META AI, can offer students and teachers real-time information and support to improve the interaction and perception. These tools by individualising learning experiences can also address the individual learning styles to support the needs of the diverse students (Miller & Davis, 2022). Johnson and Lee (2023) emphasise the fact that AI applications such as ChatGPT are assisting educators to improve their teaching processes, automating the administrative part and additional time to teach. Specifically, AI has the potential of supporting adaptive learning that modifies didactical content based on the different needs of learners. Hernandez et al. (2021) also note that the AI-based learning tools allow teachers to offer personalised assistance to students, which promotes a more student-centred teaching strategy. The possibility of AI to promote student participation is not a recent phenomenon that is well reported. Kumar and Shah (2023) recommend encouraging student interaction through interaction content and custom-tailored feedback by using AI-powered



platforms as ChatGPT does. In addition, Liu et al. (2022) mention that AI tools provide an engaging environment in the learning process that makes students more engaged in the process of learning, which results in an increase in motivation and engagement.

Miller and Davis (2022) maintain that AI tools have disrupted the usual form of teaching given that they enable people to learn together. Real-time assistance of the AI systems allows students to discuss their issues with peers, get feedback, and work on their assignments through AI-powered platforms. The collaboration is increased not only through this process but also the communication skills are developed among the students (Johnson and Lee, 2023). The capability of AI to be helpful in the differentiated instruction has been broadly debated. Making a statement uninvolved in the article, Smith (2023) insists that AI tools are best able to assist the needs of students in a variety of ways. Such tools will be able to tailor the delivery of content based on the proficiency of every student so that advanced as well as struggling student would be provided with the necessary degree of support. Another discovery by Hernandez et al. (2021) was that AI flexibility expands the opportunities of teachers to customise learning to suit different learning styles enabling them to offer personalised learning experiences without having the correct teacher applying extra effort. AI tools have demonstrated a favourable effect on the subject knowledge delivery. According to Miller and Davis (2022), subject-focused AI tools such as META AI offer constantly-sourced and updated content, which makes sure that students are provided with the most recent and successful content. Through AI, teachers will be able to provide an enhanced level of depth and breadth to the content delivery approach, increasing the cognition that is possessed by student on the more complicated subjects (Johnson & Lee, 2023). According to Liu et al. (2022), another considerable benefit of the AI usage in education is the possibility to get real-time feedback. An example of such an example is ChatGPT, which can provide answers to questions of students immediately, providing an opportunity to clarify the arising questions and eliminate misconceptions in real-time. Kumar and Shah (2023) also mention that AI applications also facilitate the assessment process as they can grade assignments in a short time and give instant feedback, enabling students to make appropriate adjustments to their work on the spot.

3. RESEARCH METHODOLOGY

3.1. Research Paradigm

The research paradigm employed in this study is positivism research paradigm, which is concerned with measurable data and objective examination.

3.2. Research Approach

The role of AI tools in the education sector is investigated in a quantitative research manner. Through a systematic approach, the research aims at delivering credible and sound information about how the integration of AI and effectiveness in teaching relate.

3.3. Data Collection

In this study, the main data was compiled by means of a closed-ended questionnaire that was formulated in such a manner to gather a quantitative part of the information on the perceptions, as well as the experience of teachers with



AI tools in the classroom. The items in the questionnaire were Likert-scale, multiple-choices, and other closed-ended questions, which are easier to analyze.

3.4. Data Analysis

The SPSS (Statistical Package for the Social Sciences) was used in analysing the data obtained through the closed-ended questionnaire.

4. ANALYSIS AND INTERPRETATION OF DATA

Impact of AI Tools on Teaching Practices and Subject Knowledge Delivery

4.1. Influence on Explaining Difficult Concepts

The use of AI prompted by models like ChatGPT and META AI becomes especially instrumental in assisting the educator in explaining complex topics by providing them with a variety of options, immediate response, and personalised explanations. These technologies will provide an opportunity to explain subjects that the students might struggle with in real-time and provide illustrative examples or simpler explanations to make concepts more accessible. Moreover, AI is able to adapt to different learning speeds, in consequence, to offer individual help and promote understanding of challenging material.

Table 1: *How do you feel AI tools (ChatGPT and META AI) have influenced your ability to explain difficult concepts to students?*

Response Option	Frequency	Percentage (%)
No influence	0	0%
Minimal influence	1	8%
Moderate influence	3	25%
Significant influence	5	42%
Major influence	3	25%

The statistics demonstrate a strong positive role of AI tools in teacher explanation of some difficult concepts: 67 per cent of the surveyed identified that AI tools have a major or significant impact. The 42 percent who gave a significant impact are a highlight of the usefulness of these technologies in the dissecting of complex material. A lesser percentage (8 %) indicated a slight impact, indicating that among other teachers AI tools are a relatively new resource, only the potential of which has not yet been fully achieved. On the whole, these results highlight the importance of AI tools to enhance the effectiveness of teaching, especially in those issues that are often problematic among students.

4.2. Supplementing Textbook Content with Up-to-Date Information

Classroom teaching may be supplemented with AI helping to present real-time, relevant, dynamic information that cannot be provided by textbooks only. These aids help teachers in enriching their lessons with the latest researches, examples and other materials that would ensure that the students are learning the latest and most accurate information. With the fast changes in different industries including technology and science, AI systems will contribute to ensuring that the curriculum is updated and current.



Table 2: Do AI tools (ChatGPT and META AI) help you in supplementing textbook content with up-to-date and relevant information?

Response Option	Frequency	Percentage (%)
Never	0	0%
Rarely	1	8%
Occasionally	3	25%
Often	6	50%
Always	2	17%

Most of the teachers (67 % displayed that they regularly or always use AI tools to supplement textbook content, which highlights the fact that they consider it to be an important channel to provide relevant and updated information to the students. Half of the participants claimed to use it frequently, and 17 per cent of the participants reported using it at all times, which demonstrates that AI tools are becoming a standard part of lesson planning. A minority (25%) have stated that they use these tools occasionally, indicating that there are still teachers who are yet to be convinced or who might be using them with greater precision. The lack of answers in the never category shows that AI tools have become a precious asset to the majority of teachers, filling the gap between a fixed textbook material and the changing topics.

4.3. Impact on Student Understanding

ChatGPT and META AI are the examples of AI tools that have a potential to improve the knowledge of students through providing them with personalised explanations, multiple points of view, and bridging knowledge gaps. The tools also enable the student to ask questions and have instant responses which enhance better understanding of difficult topics. Moreover, the adaptability of AI can help to develop improved comprehension and memorization.

Table 3: In your experience, have students demonstrated a better understanding of the subject when AI tools are integrated into lessons?

Response Option	Frequency	Percentage (%)
Strongly disagree	0	0%
Disagree	1	8%
Neutral	2	17%
Agree	6	50%
Strongly agree	3	25%

Most teachers (75% of them) said that AI tools have a positive influence on the understanding of students. Half of the participants said that AI applications enhance understanding of students to a great extent and 25 per cent said that they denote it strongly. There was only 17% of teachers neutral and 8% disagreed, implying that although larger populations of teachers think AI has a positive effect they can believe that it has a less significant influence on their classes. On the whole, the findings are consistent with the emerging documentation on educational technologies that AI tools, specifically those that provide personal learning experiences, can help students to understand the material better (Kumar and Shah, 2023; Liu et al., 2022).



4.4. Personalized Learning Materials Based on Individual Needs

AI devices become flexible in meeting the needs of students through the provision of customised learning materials, practise tasks, as well as instant feedback per student depending on their performance. Educators can also use AI to create individual learning paths, which will be particularly useful in heterogeneous classrooms where learners have different degrees of difficulty and learning styles. Individualised learning has been identified to increase engagement and performance and is able to facilitate students to learn at their own pace.

Table 4: *To what extent do you use AI tools (ChatGPT and META AI) to provide personalized learning materials based on the individual needs of students?*

Response Option	Frequency	Percentage (%)
Not at all	1	8%
To a small extent	3	25%
To a moderate extent	4	33%
To a great extent	3	25%
To a very great extent	1	8%

The statistics show that although the vast majority of teachers can identify the possibilities of AI in personalised learning, it is not used similarly. A small percentage of 33 per cent were moderate users of AI tools but 25 per cent were heavy users of AI tools, which is progressing towards the use of AI to support students with their individual needs. On the other hand, 25% used AI only in small scale and 8 per cent of the respondents did not use AI tools in personalised learning at all, which is indicative of the fact that some teachers are at an initial phase of discovering the possibilities of AI when it comes to individualised learning. Generally, these findings indicate that AI technologies are already in use, but there is an opportunity to further use and adopt them to ensure mass personalised learning in classes.

4.5. Confidence in Improving Accuracy and Clarity of Content

The AI systems, like ChatGPT and META AI, assist in ensuring the subject matter presented by teachers is accurate and clear, which can be achieved by sharing trustworthy information, dispelling false assumptions, and explaining it in detail on the spot. The tools can be used as an added resource to cross-checking the facts, re-framing difficult concepts, and delivering the material in various formats which will help to achieve general clarity.

Table 5: *How confident are you in the ability of AI tools (ChatGPT and META AI) to improve the accuracy and clarity of subject content you present to students?*

Response Option	Frequency	Percentage (%)
Not confident	0	0%
Slightly confident	1	8%
Moderately confident	3	25%
Very confident	5	42%
Extremely confident	3	25%

Most teachers (67%) responded with a great sense of confidence in AI potential to enhance the accuracy and quality of subject content. Forty two per cent



indicated to be very confident, and twenty five percent were enormously confident. It is indicative of the opinion that AI tools deliver valid and straightforward content that improves the quality of instruction. The percentage of those familiar enough was only 8 % so, even though the majority of teachers believe in AI to improve the content delivery, the percentage is very small so that only some of them can be convinced to use AI on a regular basis to clarify the material of the subject. This trust corresponds to the other research about the accuracy and simplicity of the information collected by AI tools, whose status as valuable assistance to teachers is determined (Johnson and Lee, 2023).

Impact of AI Tools on Teaching Methodologies and Classroom Instruction

4.6. Incorporating Interactive Teaching Methods

The use of AI in the teaching process has transformed by making it interactive through the aid of such AI-powered platforms like ChatGPT and META AI. The given tools allow teachers to interact with students in a more active and personal way. As an example, ChatGPT has the ability to provide real time response thus making the lessons more interactive due to immediate response to queries of the student. In the same manner, META AI will support custom learning journeys, which change dynamically through feedback to the student, increasing their engagement. Not only are interactive techniques keeping the students interested, but also active engagement and constant feedback would encourage more serious learning.

Table 6: *To what extent have AI tools (ChatGPT and META AI) helped you incorporate more interactive teaching methods in your classroom?*

Response Option	Frequency	Percentage (%)
Not at all	1	8%
To a small extent	2	17%
To a moderate extent	4	33%
To a great extent	3	25%
To a very great extent	2	17%

Based on the responses, a positive tendency to use AI tools and increase interactivity can be observed. A total of fifty-eight per cent of the teachers mentioned that AI tools have moderately to incredibly impacted effectiveness with regard to fostering interactivity in their lessons. On the other hand, 8% stated that it had no substantial effect, with the rest stating that there was a visible effect. It implies that AI interventions are getting more and more common in order to build more interactive learning environments such as ChatGPT and META AI.

4.7. Support for Collaborative Learning Activities

Team learning exercises play essential roles in developing team learning skills, critical thinking and communication. AI applications, such as ChatGPT, offer real-time feedback, enthusiasm of teamwork, and META AI guides personalised content which could be exchanged among student communities, eventually improving group learning. The utilisation of AI will facilitate peer-to-peer feedback and provide a collaborative classroom environment.



Table 7: How often do you use AI tools (ChatGPT and META AI) to support collaborative learning activities (e.g., group discussions, peer feedback) in your classroom?

Response Option	Frequency	Percentage (%)
Never	1	8%
Rarely	2	17%
Occasionally	3	25%
Frequently	4	33%
Always	2	17%

The data demonstrates that most teachers resort to AI tools regularly or constantly to assist collaborative endeavours. Half of the interviewees (50 per cent) said that they use AI either regularly or regularly during group discussions or peer reviews. The outcome is a good sign that AI has successfully been absorbed in cooperative learning frameworks. Only a quarter of people use AI tools once or two times implying that AI is good, it is just that getting ready to use it in collaborative learning is not yet widespread across all classrooms.

4.8. Adopting New Teaching Methods or Strategies

ChatGPT and META AI are AI tools that have enhanced functionalities that can transform traditional methods of teaching. The tools promote the implementation of new practises, such as flipped classroom, adaptation, instructional personalisation and instantaneous feedback. Using AI, teachers will be able to stop using the one-size-fits-all approach, devising teaching strategies that work based on the needs of the students, their learning habits, and their performance. Therefore, AI combines educators to consider new pedagogy methods that were not a part of traditional strategies in the process.

Table 8: Have AI tools (ChatGPT and META AI) encouraged you to adopt new teaching methods or strategies that were not part of your traditional approach?

Response Option	Frequency	Percentage (%)
Strongly disagree	0	0%
Disagree	1	8%
Neutral	3	25%
Agree	6	50%
Strongly agree	2	17%

The statistics show that AI tools have encouraged positive changes towards new strategies of teaching. Sixty-seven per cent of teachers said that AI tools have influenced them or highly influenced them to implement new strategies. This is an indication that AI instruments have been useful in encouraging the discussion of new behaviours that lead to better classroom interaction and student achievement. Eight per cent was the disagreement and it means that although the majority of teachers are still willing to adopt new approaches, some of them might be not ready to incorporate AI in their conventional practises completely.

4.9. Catering to Different Learning Styles

Another strength of the AI tools that can be identified is the ability to accommodate different learning styles. Presently, as an example, ChatGPT is able to customise its replies to various modalities (text, audio, visual) according to the desires of students. Similarly, META AI also provides customised routes, which



means that students with more visual learners or those who need to engage in activities are taught in the appropriate format. This is flexible, and it enables teachers to cater to different needs of students, allowing inclusive and effective learning.

Table 9: Do you find that AI tools (ChatGPT and META AI) help you cater to different learning styles in your classroom (e.g., visual, auditory, kinesthetic)?

Response Option	Frequency	Percentage (%)
Not at all	0	0%
To a small extent	2	17%
To a moderate extent	4	33%
To a great extent	5	42%
To a very great extent	1	8%

The results show that there is a significant level of consensus when it comes to the capacity of AI to handle the various styles of learning. Eighty-three per cent of the respondents said that AI tools have documented in moderate to extreme ways helping them absorb in various styles of learning. This highlights the fact that much can be done to improve the skills of the teachers to provide more inclusive learning environments. Only seventeen per cent claimed significant benefits, which suggests that AI can still be enhanced to adapt to learning needs of the individuals.

4.10. Improvement in the Quality of Student Assessments and Feedback

ChatGPT and META AI are AI-based teaching tools that can be used to support instruction, as well as make substantial contributions to assessments and feedback refinement. ChatGPT has the capability of giving instant and tailored feedback on assignments or practise exercises and saves time and comments meaningfully to the teacher. META AI provides time-tracking analytics to determine the performance of students over time, which is then used to target performance improvements. These tools also enable effective and objective measures, which reduce the load of manual grading and provide feedback in a timely and active form.

Table 10: Do AI tools (ChatGPT and META AI) help you improve the quality of student assessments and feedback?

Response Option	Frequency	Percentage (%)
Not at all	1	8%
To a small extent	3	25%
To a moderate extent	4	33%
To a great extent	3	25%
To a very great extent	1	8%

The answers suggest that the use of AI tools in enhancing assessment quality and providing feedback is mostly positive. Sixty-six per cent of teachers think that AI tools enhance the quality of assessment, including feedback in a moderate or very large degree. This illustrates how AI can help make feedback quicker and more comprehensive and, as a result, personalised and timely communication can become possible. A fifth of the respondents believed that the tools contributed to a minor degree, and so could be expanded on. Nevertheless, in



general, AI shows a beneficial impact on the process of assessments.

5. FINDINGS AND DISCUSSION

5.1. Findings

The AI tools were found in this study to play an important role in assisting teachers to clarify difficult concepts to students through the use of AI tools, including ChatGPT and META AI. The findings indicate that two-thirds (67 per cent) of teachers said that AI tools had a considerable or a leading effect on simplifying and explaining complicated content. On the enrichment of the text, 67 per cent of teachers said that they frequently or regularly use AI tools in order to provide relevant and modern content to supplement the textbook information. The research also found out that AI tools have a positive impact on student knowledge of subject matter. Three-quarters of educators agreed that AI tools enhanced student understanding and half said that the student comprehension had been enhanced significantly. In regards to personalised learning, thirty three per cent of teachers stated that they moderately used AI tools, and twenty five per cent of teachers actively utilised AI tools. On the rating scale of confidence regarding accuracy and clarity of the given material, sixty-seven percent of the teachers expressed confidence that AI tools are able to promote accuracy and clarity of given material. Interactive teaching was also significantly contributed by AI tools. Sixty-eight per cent of teachers said that AI tools made it possible to incorporate more interactive approaches to learning including real-time responses and personalised feedback. To support collaborative learning, fifty per cent of teachers indicated that they always, or commonly, used AI-tools to support group discussion and peer feedback. The researchers found out that sixty-seven per cent of the teachers embraced new instructional practise as a result of AI tools, which included flipped classes and adaptive learning. In terms of different learning styles, eighty-three per cent of educators concluded that AI devices had a significant positive effect on their ability to address the needs of students with different learning styles. Finally, sixty-six per cent of educators thought that AI tools significantly increased the quality of assessment and feedback.

5.2. Discussion

This research discussed the effect of AI applications, namely ChatGPT and META AI, on methods of instruction in Government Degree College (GDC) Lakki Marwat, Khyber Pakhtunkhwa, Pakistan, and student interaction levels. Hernandez et al. (2021) found out that AI-based applications, such as the ChatGPT, are key to personalising learning. The current research confirms this as 33 and 25 percent of teachers have moderate and extensive use of AI in individual learning respectively. At the same time, both articles emphasise the ability of AI to support the individual learning process and needs since it provides students with an opportunity to study at their own rhythm. Furthermore, flexibility to different learning styles is also another fit, with 83 per cent of teachers at GDC having 35 reports that AI is useful in accommodating the differences in the learning styles, which has been also observed in the more developed educational settings. Miller and Davis (2022) explored the role of AI in the process of adopting new teaching practises, noting that AI encourages instructors to use interactive and student-centred learning. This is reflected by the current findings that reported greater interactivity attributed to AI tools 58 including percent. This means that AI facilitates an active pedagogical approach



to learning since it encourages a dynamic learning environment. Morris and Green (2022) highlighted the contribution of AI to the world of professionals. Although GDC teachers are confident in the use of AI, it is still indicated that some of them are in need of additional mentoring, which might mean that the professional development of rural teachers needs to be more organised. O'Donnell and Wang (2021) have explained that AI tools are less successful in cases when students do not have consistent access to technology. The use of AI by GDC raises the issue of untrustworthy internet in rural settings. Singh and Gupta (2022) cautioned that AI might be developed without awareness of its unnecessary development of over-reliance which could affect critical thinking. GDC educators who are assured of AI role have to balance the use of AI and the conventional method of teaching to prevent reliance.

6. Conclusion

In this research, the analysis of AI applications, namely ChatGPT and META AI, in teaching methodology redesign and student interactions improvement in GDC Lakki Marwat were discussed at length. The results prove that these artificial intelligence tools play a vital role in enhancing the process of conveying subject-related knowledge and providing new teaching methods and making the learning process more interactive and dynamic. Teachers claimed that individualised and immediate help enabled them to explain complicated issues and make learning easier to students significantly. The use of AI also helped organise classroom time more effectively and provided teachers with time freedom that allowed different styles of learning and meeting student needs in a manner that could not take place with the traditional methods. The results of the research indicate that, when applied attentively and supported, AI tools will contribute significantly to defining the future of education in rural and resource-limited regions that give students a chance to excel despite the existing problems.

Future Research

Although this paper provides a lot of definitive information about the current role of AI in education at GDC Lakki Marwat, future researchers might want to consider the following directions: Future studies might follow the long-term effects of AI tools on student achievement and teacher performance throughout multiple academic years to identify whether a positive effect of the tools indicated in the current study can be maintained. Comparative studies of AI tools application in various contexts of education (e.g., in urban or rural school, in government or private school, etc.) may help to understand the contextual context affecting AI integration.

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