ISSN E: 2709-8273
ISSN P:2709-8265
JOURNAL OF APPLIED LINGUISTICS AND TESOL
JALT

JOURNAL OF APPLIED LINGUISTICS AND TESOL

Vol.8. No.1.2025

EVALUATING HUMAN VS AI FEEDBACK ON STUDENTS' PERFORMANCE; A COMPARATIVE ANALYSIS OF STUDENTS AT INTERMEDIATE LEVEL

Khansa Ramzan
Student, English department
khansaramzan222@gmail.com
National University of Modern Languages, Faisalabad,Pakistan.
Asma Batool
Student,English deprtament
asmabatool556@gmail
National University of Modern Languages, Faisalabad,Pakistan.
Muhammad Farukh Arslan
Lecturer, English department, National University of
farukhgill99@gmail.com
National University of Modern Languages, Faisalabad,Pakistan.
Hira Fatima
Student,English deprtament, National University of
hiraf276@gmail.com
National University of Modern Languages, Faisalabad,Pakistan.

Abstract

This research scrutinizes the comparative effectiveness of the evaluation of the feedbacks of AI vs human regarding students' performance at the intermediate level in Pakistan. The implication of AI technologies has become the crucial part of all education institutions all over the world. The studies revolve around the concept that how AI generated feedbacks which are quick, limited data based and tailored according to the provided data are compared with the human generated feedbacks which are emotionally and contextually driven. This research is quantitative based on the collection and evaluation of the data from the students of intermediate level. The research will highlight the objectivity of AI with lack of emotional and motivational by AI and provided by humans. Students are often inclined towards the use of AI due to its fast response. Through this research, a potential for the hybrid approach including the feedbacks from both resources is more appreciated. Ultimately, this research will highlight that how the incorporation of the AI in the modern education can be effectively utilized alongside the traditional educational means.

Introduction

One of the major issues in integrating artificial intelligence (AI) into education is that of its applicability in developing countries, such as Pakistan. Here, traditional methods often struggle due to a scarcity of resources and a shortage of qualified teachers. Thus, this research aims to examine whether AI-driven feedback outperforms human feedback for student performance at the intermediate level in Pakistan.

The incorporation of AI in education has been taking the place all over the world and Pakistan is no exception. The educational system of Pakistan is facing significant challenges including limited infrastructure with limited access to quality education with large number of dropouts. In this scenario, AI promises the reforms for educational system. AI can provide the unwavering support to the Pakistan's education system and Pakistani students by providing the tailored and revolutionized feedback. This ability of AI is particularly crucial in Pakistan's context where many students did not get quality education and equal access to all resources. On the other hand,

ISSN E: 2709-8273
ISSN P:2709-8265
JOURNAL OF APPLIED LINGUISTICS AND TESOL
JALT

the human evaluators provide valuable insights according to the student's context and learning journey. They not only criticize but give constructive feedback regarding strengths and weaknesses of students. Previous studies showed that human feedback played major role in the development of students learning journey as compared to AI feedback.
AI technologies have been proven to personalize the learning experience by giving a tailored feedback based on data obtained from individual students. AI is the source of somehow constructive and timely feedback for many students. The online systems have been developed that can easily assess assignments, quizzes and exams for grading them and providing students with immediate response. This quick feedback allows students to identify their strengths, weaknesses, areas of improvements and able them to make their progress more polish. In this way, students can easily able to face their weaknesses and make necessary and suitable changes for their future. This feedback proves to be very valuable for the real time progress of students al across the world. (Robert et al., 2024).

The capacity of AI systems to analyze different data points, including learning patterns and performance metrics, allows for the generation of customized learning plans for every student based on his or her unique needs (Luckin et al., 2016). This adaptability is especially helpful in Pakistan's private universities, where resources are usually more readily available to implement innovative educational technologies.

One of the research questions in the research conducted by Shi and Aryadoust in 2024 dealt with the **AI-Based Automated Written Feedback** systems, focusing on feedbacks and the way of operating AWF. In recent times, huge numbers of AWF systems are functional and they are not limited to AWE systems, but they are still the major contributor to AWF systems. There are many other technological providers of AWF systems such as word processor and online writing assistance. All this suggests a broader view and definition of AWF systems.

AI augmented classrooms have a very revolutionary role of teacher in it. This is the important aspect of discussion in literature. As AI is playing a very crucial and main role in the modern classrooms but the role of the humans as teachers cannot be replaced. Teacher has always proved to be a mentor, facilitator, and emotional support for all the students. According to the literature, the most effective classroom will be the one where the teacher and AI work together. AI is assigned the tasks of routine data handling and analysis and teacher is associated with the more sensitive tasks of education that need human judgment, empathy and context. AI has very positive and strong impact on students learning outcomes, particularly in terms of personal growth and engagement as per the calculation of literature. However, literature also highlights the role of teacher which is irreplaceable due to some ethical concerns. (Sasikala, Ravichandran., 2024)

However, the trend towards AI-based learning is no easy feat. Educators have expressed concerns that AI threatens to replace the traditional human teaching role, and more professional development programs are expected to show how AI should supplement rather than replace a human instructor (Balqees et al., 2024). Ethical considerations in data privacy and quality of AI contents must also be addressed to put these technologies into responsible use.
Conclusion While AI does hold some promises of increasing educational outcomes with mechanisms for personalized feedback, a comparative analysis against human feedback must be done in order to truly understand the difference in performance among students. The results of this study will therefore be able to shed more light on the interaction of both forms of feedback within and against the education sector of Pakistan.

ISSN E: 2709-8273
ISSN P:2709-8265
JOURNAL OF APPLIED LINGUISTICS AND TESOL
JALT

Research Questions

1. How does the feedback provided by the AI tools be compared with the motivational and emotional support provided by humans?
2. Why the students are inclined towards the AI feedbacks more than the human feedbacks and what are the students perception for the effectiveness and usefulness of the AI?
3. To what extent do the students learning trajectory can be improved by incorporating both feedbacks by humans and AI?

Literature review

The integration of Artificial Intelligence (AI) in educational settings has sparked a debate about the effectiveness of human versus AI feedback on student performance. This literature review aims to provide an overview of the existing research on this topic, with a specific focus on intermediate level students in Pakistan.

Feedback is a crucial element in the learning process, and its impact on student achievement has been extensively researched (Hattie & Timperley, 2007). Hattie and Timperley conducted a comprehensive review of research on feedback and found that feedback from teachers can have a significant impact on student learning outcomes. The authors argue that effective feedback should be specific, timely, and focused on the task rather than the person (Hattie & Timperley, 2007). In fact, a study by Black and Wiliam (1998) found that feedback can improve student achievement by as much as 20-30%. Furthermore, a meta-analysis by Kluger and DeNisi (1996) found that feedback can have a positive impact on student motivation and self-efficacy.

Hattie and Timperley (2007, p. 81) define feedback as "information provided by an agent (e.g., lecturer, peer, book, parent, self, experience) regarding aspects of one's performance or understanding". According to this definition, effective feedback provides information on how to realize the desired result. In order to achieve that, Hattie and Timperley suggested that effective feedback should provide answers to three kind of questions that steer the learning process of students: (a) What am I going to learn? What are the learning goals? (feed-up), (b) How have I handled this so far? (feedback), and (c) What is the next step? What am I going to do to achieve the set goals? (feed forward).

A second aspect of the feedback model of Hattie and Timperley (2007) is the level of feedback. Hattie and Timperley make a distinction in four levels. The first level is feedback on the task, where the feedback indicates whether a learning task has been properly understood and/or performed, whether or not it is relevant, and so on. In the context of a research paper, task-related feedback involves feedback on the research product, such as the results or outcomes of the research. An-example might be "Your research question has not yet been properly formulated". The second level is feedback on the process, and focuses on the approach or strategy. What steps should the student take to carry out the task? The lecturer gives, for example, feedback on the approach by asking questions and suggesting alternative solutions, making the student aware that other strategies may be possible. Feedback at this level, according to Hattie and Timperley, leads to deep learning. In the context of a thesis, process-level feedback is about how the student has approached the research. An example of feedback at the process level is "Use an academic database to find literature". The third level is feedback on self-regulation. This feedback is focused on the meta-cognitive skills and is meant for the student to evaluate himself or herself. It therefore relates to the way in which the student has shaped his or her own learning and made choices. An example is "Take another look at your planning and

ISSN E: 2709-8273
ISSN P:2709-8265
JOURNAL OF APPLIED LINGUISTICS AND TESOL
JALT

indicate why it was not possible to submit the problem statement on time". And finally, feedback on the person focuses on someone personal quality and personal characteristics. An example is "Well done!".

The following procedures were used in order to improve the caliber of marking, feedback, and record keeping: (i) The homework and in-class assignments completed by the students were usually, comments are used for evaluation rather than points or ratings. (ii) Based on the teacher's comments, students were given the chance to enhance their assignments or activities. (iii) To ascertain the students' learning deficiencies and to offer feedback, a quiz was administered at the conclusion of each subject and unit. (iv) The students received their quizzes and feedback regarding their areas of weakness. (v) Using the input from the students regarding quizzes, assignments, and activities, instructional arrangements were created. To help the failing students catch up to the others, strategies such as "group work," "teaching by showing and doing," "re-explanation," "worksheet," "clarification of the used assessment criterion," "internet research," and "making a concept map" were employed. (vi) Both diagnostic and formative assessment data were documented during the student evaluation process. The names of the students were coded. (vii) The transmission of student assessment data to the class instructor for the subsequent year was made practicable. (viii) In order to express gratitude and promote more student growth, rewards were utilized.(Ozan et al.,2018).

Calatayud et al has shown in their research in 2021 that in many cases, students use Ai for their formative assessments. These assessments are carried out by automatic marking of students' works. These results show that hoe AI is indulged in giving feedbacks to students automatically and grading them. But, it is only providing the grades to the students. It is seen that the use of AI is increasingly seen incorporating in humans life since 2019 and 2020. This virtual teaching process proved to be the breakthrough in the development of this type of technology. In the final conclusions, it is actually worth noting that the students using AI obtain better results as compared to those who did not make use of it. Further it is reviewed that AI should be humanized at any cost for giving the touch of humanity in it.

Hooda, M., Dahiya, C., & Hossain, M. S. (2022) wrote article named **Artificial Intelligence for Assessment and Feedback to Enhance Student Success in Higher Education**. This research was about that how AI impacted the assessment and feedback practices reflecting that AI tools are modern technologies for tailoring learning outcomes and qualitative feedback.

Educational psychology plays a very important role in shaping the learning styles. While finding out the different processes of learning style, teaching methodology can be improved also. It will help the learner to find out their interpersonal knowledge. Interpersonal knowledge means someone's own knowledge about memory, thinking pattern and learning tendency (Brown, 1984). This consciousness helps the learner to identify their learning style which would help learner to improve their learning process.(Farukh, 2022)

After pandemic , in Pakistan it was observed n online classes that those teachers who use zoom platforms for teaching frequently asked students to use the annotation tools on a shared screen or whiteboards and breakout rooms were used for group discussions. Teachers who were fully aware of the online classes facilitated their students timely. The teachers were using the Zoom app in the beginning for conducting online classes. They were shift to the use of Microsoft

ISSN E: 2709-8273
ISSN P:2709-8265
JOURNAL OF APPLIED LINGUISTICS AND TESOL
JALT

teams and then online training sessions were also conducted for the teachers training that how to use the digital technology in pedagogical field. (Farooq et al., 2023).

New technologies can be beneficial to individual learning as they focus on making students active participants in their learning. AI technology in particular offers a range of opportunities for differentiation of instruction, which is essential for adaptive learning. Some AI systems are mechanically intelligent; some AI systems are intellectually intelligent, designed to be coherent, to learn and adapt autonomously. Each of these different types of AI tends to adapt to certain types of situations that can make them more capable of performing some types of educational tasks better than others.(ÇAYIR,2023).

According to research, the use of **Automated Written Feedback (AWF)** systems for formative evaluations in educational settings is growing. These systems provide timely and individualized feedback in an effort to improve student learning. Research has indicated that although AWF can have a good effect on writing performance and scores; it frequently falls short of the qualitative depth of feedback offered by human educators. A comprehensive review, for example, discovered that while AWF can help students write better, it is typically less useful than traditional human input since it cannot address subtleties in student work.(Shi, Aryadoust.,2024). Another study about the difference AI generated feedback and human generated feedback involving 457 students across different academic programs. It reflects that students often struggle to make a difference between these feedbacks. However, it is seen that human feedback is generally preferred. They mention that constructive criticism and perceived clarity are the main critical factors in human feedbacks. The research says that as AI is providing quick, objective and clear responses but students value the personalized touch that humans offer.(Nazaretsky *et al*.,2024)

Pang, et al, 2024 conducted a research in which they discovered that literature has been playing its effective role in suggesting recommendations for incorporating AI into educational practices. These suggestions include training for educators, which is necessary to maximize the advantages of AI by providing them enough skills to use AI with maintaining the pedagogical integrity. The other suggestion is the customization of AI tool. It should be customize according to the specific teaching style and subject matter for improving the relevance and effectiveness in providing feedback. Future researches are also on their way to explore the long term impacts on students learning and outcomes.

AI in education is not meant to take the role of human teachers, but rather to optimize and improve instruction. Nonetheless, there might be ways for educators to provide input on how well the platform is working. AI needs to be seen as an additional instrument that enhances the work of teachers. Constant feedback loops ought to guarantee that the platform develops and gets even more efficient with time. As with all AI, datasets and results must be explicable in order to make the origins of the data and conclusions clear. (Atherton et al.,2024).

A research took 91 students of age ranges from 25 to 45, the students of master degree and doctorate programs. All the participants were clearly inclined towards the peer response. Even though, they all clearly welcomed the use of AI in terms of feedbacks, but AI was failed in providing the specific feedback which participants needed. It did not tied to the human cognition, real life language use, experiences of the society, in depth meanings and interpretations. There are many language models provided by AI and they are considered as most authentic and huge help. But they lack basic human features like emotional support , understanding of language, and the connection to the originality. (Zapata, et al., 2024).

ISSN E: 2709-8273
ISSN P:2709-8265
JOURNAL OF APPLIED LINGUISTICS AND TESOL
JALT

Ullah, Hayder and Arslan conducted a research in 2024 bridging the AI and educational system; Safeguarding student data and mitigating biases in AI algorithms are crucial steps toward fostering an inclusive learning environment that benefits every learner. Furthermore, as Pakistani educational institutions increasingly adopt AI technologies, there is a pressing need to strike a balance between innovation and ethical responsibility. While AI offers opportunities to enhance teaching effectiveness and student engagement, careful consideration must be given to minimize potential risks such as over-reliance on technology or unequal access to AI-powered resources. It is essential to approach AI implementation with a critical lens that prioritizes educational equity and student welfare. Ongoing research and collaborative discussions play a pivotal role in shaping the future trajectory of AI-enhanced education in Pakistan. By addressing ethical concerns, fostering dialogue among stakeholders and promoting responsible AI use, Pakistan can harness the full potential of AI to create inclusive and effective learning environments tailored to the needs of diverse student populations.

Research Methodology

Rubric driven evaluation framework is used to access the effectiveness of both the human vs AI feedbacks is used in this research. The researcher has used a mixed method approach utilizing both qualitative and quantitative approach to evaluate the data. Data is collected from 20 different students studying in different educational institutions in Pakistan at intermediate level. A rubric was developed encompassing key aspects to evaluate students including punctuation, grammar, sentence structure, main idea and spelling etc.

20 participants provided data from 20 different educational institutions representing the different backgrounds and contexts. The students were assigned tasks to write an essay and then those essays were evaluated by AI according to the ruberic and human evaluators**.** While human evaluators offered comments based on their professional judgment and contextual understanding of each student's work, the AI evaluation was produced using sophisticated algorithms that could analyze text for particular criteria listed in the rubric.

Data analysis

A rubric was prepared to measure the performance of the students appropriately in six major areas, such as grammar, vocabulary, spelling, punctuation, sentence structure, and content and ideas.

Grammar examines the correctness of language in use through proper agreement of subject and verb, besides ensuring consistency in the use of tenses. Vocabulary examines variety and appropriateness in the choice of words through the use of the right and expressive language. Spelling shows attention to detail as every word is spelled correctly. Punctuation is the correct use of commas, periods among other elements in order to bring in clarity and readability into your text. Sentence construction deals with how effective a constructed sentence is; be it variety, coherence or even complexity. Content and ideas involve the wealth, relevance as well as the novel nature of information that determines how one ought to develop and represent the ideas. This will ensure criteria for evaluating the technical as well as the creative part of the students' writings, thereby giving an overview of their skills.

Criteria	**Excellent (4)**	**Good (3)**	**Satisfactory (2)**	**Needs Improvement (1)**

ISSN E: 2709-8273
ISSN P:2709-8265
JOURNAL OF APPLIED LINGUISTICS AND TESOL
JALT

Criteria	Excellent (4)	Good (3)	Satisfactory (2)	Needs Improvement (1)
Content and Ideas	Ideas are clear, insightful, and well-developed; fully addresses the prompt.	Ideas are relevant but may lack depth or development; mostly addresses prompt.	Ideas are underdeveloped or vague; partially addresses the prompt.	Limited or unclear ideas; does not address the prompt.
Sentence Structure	Sentences are varied, complex, and effectively structured.	Sentences are clear but lack variety or complexity.	Sentences are often repetitive or awkward; occasional lack of clarity.	Sentences are poorly constructed; frequent run-ons or fragments.
Grammar	Few or no grammar errors; does not affect readability.	Minor grammar errors that do not distract the reader.	Frequent grammar errors that hinder understanding in places.	Numerous grammar errors that significantly affect readability.
Spelling	No spelling errors.	Few spelling errors.	Several spelling errors that slightly distract the reader.	Many spelling errors that distract the reader and affect readability.
Vocabulary	Uses precise, varied, and advanced vocabulary appropriately.	Vocabulary is appropriate but somewhat basic or repetitive.	Limited vocabulary; noticeable repetition or misuse of words.	Vocabulary is overly simple, repetitive, or inappropriate.
Punctuation	Punctuation is consistently correct and enhances readability.	Few minor punctuation errors that do not distract the reader.	Frequent punctuation errors that occasionally affect understanding.	Numerous punctuation errors that significantly hinder readability.

The researcher has conducted the research with 20 students of intermediate. The students were given the topic of "The education" to write an essay. Those essays were evaluated by chatgpt and the teachers. The feedbacks of both teacher and chatgpt were compared. A ruberics was developed to evaluate the ability and forecast the mistakes of the students. Six areas were taken into consideration to give the feedback. Every area carried four marks, in this way there were total 24 marks. Students getting 22 out of 24 were considered excellent. Those who got 20 marks were labeled as good. Below 20 and above 15 were satisfactory and those below 15 were the students who needed improvement in different fields of essay writing including grammar, vocabulary, sentence structure, punctuation and spelling. When chatgpt gave feedback on students' performance, out of 20 students, 6 were excellent with few mistakes in grammar and ideas, 4 students were performing well with mistakes in the area of grammar, content and ideas, sentence structure, spelling and punctuation also. Chatgpt announced 5 students as satisfactory

ISSN E: 2709-8273
ISSN P:2709-8265
JOURNAL OF APPLIED LINGUISTICS AND TESOL
JALT

on the basis of their performance. These students have many mistakes in all the parts of scale on ruberics. There were five students who needed improvements in their grammar, spelling, punctuation, explaining the main ideas clearly and weaving the coherence and cohesion among the ideas in the essay.

This was all the feedback given by chatgpt. Now the teacher's feedback is very diiferent from AI. The feedback of ai was based on the provided data and the limited information about the student. Teacher's feedback was more critical and student centered. Teacher highlighted that students are using the simplest sentence structure. Rather than many grammatical mistakes, the main flaw was the use of simple tense by students. Students were using the limited vocabulary and the words were repeating. Teacher's feedback reflected the strengths and weaknesses of the student and draw them the learning trajectory to improve according to the students' abilities. Ai does not encourage the students on improving their skills but teacher provides the empathy and encouragement to students fostering teacher student's connection. One of the major aspects to which the teacher calls attention is the types of essays, such as argumentative, logical, or assertive, and the appropriate sentence structures for each type. Cultural sensitivity is also very necessary and it is rightly driven by the teacher who is personally connected to students.

There linguistic errors observed in humans' writing are often diverse and challenging in multiple aspects of language use. Human evaluators came across the various issues regarding punctuation, grammar and sentence structure. Among the students of intermediate level in Pakistan, one of the common mistakes is the overuse of the simple sentence structures accompanied by the use of repetitive phrases. Another issue is the issue of applying the proper rule of capitalization. The capitalization of first word and proper noun is the persistent issue among the students of intermediate level observed by humans assessors. Similarly, subject verb agreement is another prevalent issue. Students fail to align the correct form of verb with either singular or plural subjects. This ultimately results in grammatically incorrect sentences.

Another big area of weakness is that of misuse of articles such as a, an and the. The students widely misuse or omit articles such that their sentences are awkward or seem uncompleted. This suggests that the understanding is still foggy of how articles work in the context of English grammar. Students also may try to compose complex sentences here to express thought. Their failure to master even at a basic level however often leads them to produce rather confusing and overly worded expressions. This of course mutes the intended idea but also is distracting in rendering their writing altogether less coherent.

Overall, these linguistic challenges underscore the need for targeted instruction in grammar, punctuation, and sentence variety. By addressing these recurring issues, students can significantly enhance their clarity, coherence, and overall effectiveness in writing, paving the way for greater academic and professional success.

Findings

The findings of this study illustrate the complementary nature of AI in education: while AI tools like ChatGPT may allow for the provision of quicker and more standardized feedback, they are supplementary tools at best, not replacements for teachers. Teachers provide something that cannot be substituted easily-the kind of thinking needed to tackle the particular need of students. In addition, the study indicates the need for the development of AI systems with cultural and emotional intelligence. These elements will enable AI to provide more holistic feedback in

ISSN E: 2709-8273
ISSN P:2709-8265
JOURNAL OF APPLIED LINGUISTICS AND TESOL
JALT

bridging the gap between automated evaluation and human judgment. As the study suggests, the effectiveness of AI in the identification and classification of errors mattered little to learning; teaching skills lie in something far greater and cannot be replaced-connecting with a student, offering one-to-one attention. It would, therefore, be expected that a balanced integration of AI and human instructions can develop more effective and inclusive learning environments that ensure students meet academy standards along with developing the critical thinking and communication skills that would help them further on.

Conclusion

This comparative analysis between human vs AI feedback comes with different strengths and weaknesses associated with both approaches in analyzing the students' performances at intermediate level in Pakistan. AI is capable of offering immediate and limited data driven feedback based on the provided data for the personal improvement of the students. It is capable of identifying the gaps quickly and tailoring the data according to the current landscape of knowledge. One of the flaw of the AI is its inability to tailor the data according to the contextual bases and emotional intelligence, however the objectivity and the efficiency of AI is on point. Human evaluators provide personal insights and encourage students according to their strengths and weaknesses to produce a fostering learning environment. The human evaluation is important for the feedback process for addressing and promoting the students' needs and positive educational experience. The synergic fusion of both AI and human feedback are the grounds for the enhancement of peer performance. For achieving more efficiency in students' performance, a hybrid model of AI with empathetic and contextual insights of human educators is mandatory. This approach will help teacher to build meaningful relationship with their students and manage workload by sharing their loads with AI. As Pakistan need to excel in the modern world, it is significant to face the challenges, embracing innovative technologies like AI while valuing the irreplaceable contributors to human growth. Future research should explore the practical implications of this hybrid model, examining how best to implement AI tools in conjunction with traditional teaching methods. By doing so, educational stakeholders can work towards creating a more equitable and effective learning environment that meets the diverse needs of all students.

References:

1. Arslan, F. (2022, May 31). *Analysis of Learning Preferences and Material at Intermediate Level of Punjab Text Book*. ResearchGate. https://www.researchgate.net/publication/360961965
2. Balqees, A., Syed, A., & Ullah, dr. shamim. (2024). Utilizing ChatGPT to elevate teaching and learning in Pakistani universities. *Pakistan Social Sciences Review*, *8*(3). https://ojs.pssr.org.pk/journal/article/download/796/618/1331
3. Black, P., & Wiliam, D. (1998). Assessment and Classroom Learning. *Assessment in Education Principles Policy and Practice*, *5*(1), 7–74. https://doi.org/10.1080/0969595980050102
4. ÇAYIR, A. (2023). A Literature Review on the Effect of Artificial Intelligence on Education. *JOURNAL OF HUMAN AND SOCIAL SCIENCES (JOHASS)*, *6*. https://dergipark.org.tr/tr/download/article-file/3473472
5. Faiz, F. U. (2024). Bridging Theory and Practice: AI Applications in Learning and Teaching in Pakistan's Education System. Bridging Theory and Practice: AI Applications in Learning and Teaching in Pakistan's Education System, 7(3), 180–204. https://doi.org/10.5281/zenodo.13337553

6. Farooq, M., & Nauman, S. (2023b). Teachers' Perceptions and Experiences of using Digital Technology in Undergraduate Classrooms in Pakistan. *Journal of Social Sciences and Media Studies*, *7*(1), 54–62. https://doi.org/10.58921/jossams.07.01.0252
7. González-Calatayud, V., Prendes-Espinosa, P., & Roig-Vila, R. (2021). Artificial Intelligence for Student Assessment: A Systematic Review. *Applied Sciences*, *11*(12), 5467. https://doi.org/10.3390/app11125467
8. Hattie, J., & Timperley, H. (2007b). The Power of Feedback. *Review of Educational Research*, *77*(1), 81–112. https://doi.org/10.3102/003465430298487
9. Hooda, M., Rana, C., Dahiya, O., Rizwan, A., & Hossain, M. S. (2022). Artificial Intelligence for Assessment and Feedback to Enhance Student Success in Higher Education. *Mathematical Problems in Engineering*, *2022*, 1–19. https://doi.org/10.1155/2022/5215722
10. Kaledio, P., Robert, A., & Frank, L. (2024). The Impact of Artificial Intelligence on Students' Learning Experience. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.4716747
11. Kluger, A. N., & DeNisi, A. (1996). The effects of feedback interventions on performance: A historical review, a meta-analysis, and a preliminary feedback intervention theory. *Psychological Bulletin*, *119*(2), 254–284. https://doi.org/10.1037/0033-2909.119.2.254
12. Luckin, R., & Holmes, W. (2016, February). *Intelligence Unleashed: An argument for AI in Education*. ResearchGate. https://www.researchgate.net/publication/299561597_Intelligence_Unleashed_An_argument_for_AI_in_Education
13. Nazaretsky, T., Mejia-Domenzain, P., Swamy, V., Frej, J., & Käser, T. (2024). AI or Human? Evaluating Student Feedback Perceptions in Higher Education. *researchGate*. https://doi.org/10.31219/osf.io/6zm83
14. Ozan, C., & Kıncal, R. Y. (2018b). The Effects of Formative Assessment on Academic Achievement, Attitudes toward the Lesson, and Self-Regulation Skills. *Educational Sciences Theory & Practice*. https://doi.org/10.12738/estp.2018.1.0216
15. Pang, T., Kootsookos, A., & Cheng, C.-T. (2024). Artificial Intelligence Use in Feedback: A Qualitative Analysis. *Journal of University Teaching and Learning Pratice.*
16. Romano, R., Lauria, A., Naldi, E., & Mezzapesa, C. (2024). EDULEARN24 Proceedings. *EDULEARN Proceedings*, *1*. https://doi.org/10.21125/edulearn.2024
17. Sasikala, P., & Ravichandran, R. (2024). Study on the Impact of Artificial Intelligence on Student Learning Outcomes. *Journal of Digital Learning and Education*, *4*(2), 145–155. https://doi.org/10.52562/jdle.v4i2.1234
18. Shi, H., & Aryadoust, V. (2024). A systematic review of AI-based automated written feedback research. *ReCALL*, *36*(2), 187–209. https://doi.org/10.1017/s0958344023000265
19. Ullaha, F., Haydar, B., & Arslan, M. F. (2024). Bridging Theory and Practice: AI Applications in Learning and Teaching in Pakistan's Education System. *Jahan-e-Tahqeeq*, *7*(3), 180-204.
20. Zapata, G. C., Saini, A. K., Cope, B., Kalantzis, M., & Searsmith, D. (2024). Peer-Reviews and AI Feedback Compared: University Students' Preferences. *ResearchGate*. https://doi.org/10.35542/osf.io/uy8qp