

EXPLORING CHALLENGES AND LEARNING EXPERIENCES OF STUDENTS WHEN THEY USE ARTIFICIAL INTELLIGENCE (AI): A STUDY OF HIGHER EDUCATION INSTITUTIONS OF LARKANA

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Abstract

Artificial intelligence (AI), in recent years, has gained mind blowing advancement in terms of its accessibility and features providing answer of every hard question within seconds. Keeping in view its benefits for improving quality of education high education institutions of Pakistan specifically Larkana District have started adopting it in teaching-learning process. But this process has not been problem free. Thus, study explore learning experiences and challenges faced by students at HEIs by utilizing qualitative method of educational research. Data in this study was collected employing semi-structured and analyzed with the help of thematic analysis. However, study found privacy and security of data, ethical considerations, over reliance of AI, and lack of awareness and understanding were major challenges encountered by youngsters. While their learning experiences included AI lessens reasoning skills, declines quality of education, sometimes give misleading content and discourages pupils, and declines physical engagement. Study recommended that these challenges should be taken into consideration and timely measures should be taken in order to tackle them.

Keywords: Artificial intelligence (AI), Higher education institutions (AI), Learning experiences.

Introduction

Artificial intelligence has proved itself as a profound factor for the systematic change in every walk of life specifically in the field of education. Just because of its progressive interactive nature it surges the learning experiences of pupils, customized instructions, and boosted managerial productivity (Shoukat, Rizwan, & Khan, 2025). There has been a quick adoption of AI based teaching tool like intelligent tutoring system (ITS), grading platforms that are automated, and data handling across the globe for modifying learning experiences based on individual needs (Alkhatlan & Kalita, 2018).

Nonetheless, there are two major factors i.e. availability and efficiency that ensure execution of AI. As per the study of Lata (2024) AI adoption could not be assured without having technological equipment and physical infrastructure. As an example of Namibian schools is mentioned by Waiganjo and Mwalenwanasho (2024) that public schools of Namibia are equipped with PCs, Wifi, interactive boards, and cloud paging etc. This study disclosed that Namibian schools are fully prepared to bring technology in their educational institutions.

In another study it has been highlighted by Baker (2018) that context of technology is inclusive of two things i.e. latest and accessible technological tools that could trigger teaching and learning. Many things in education system such as customizing learning tracks, increasing students learning productivity, and also the pedagogy of teachers are geared up by introducing AI. The COVID-19 positively influenced education systems by exposing the demand of amendments in educational policies prioritizing technology as need of the day (Nambambi, 2022; Waiganjo, 2022). However, the use of AI in education is a hard process and integrating it in daily learning classroom is not a problem free. Because there are many challenges that restricts the educators to adopt AI and these barriers are divided into two categories; intrinsic and extrinsic challenges (Ratheeswari, 2018).

Extrinsic barriers are related to the organizations that give financial support to schools as they can buy technical tools but if they do not do that then it would be a huge hindrance to execute AI in classrooms because most of the schools can't afford expensive materials related to technology (Prasojo et al., 2019). On the other hand, intrinsic challenges related to the school administrators, teachers and individuals. Sometimes what happens that there are available technical tools but there is no permission for teachers to use that (Vrasidas, 2015). A part from these barriers teachers themselves are also a hindrance in using technology in classroom because most of the teachers are not able to utilize technical devices, they have less confidence and they have no experience in computer skills (Bingimlas, 2009).

It has also been disclosed in a study that AI in education helps to meet many approaches in learning and pedagogical philosophies may be implemented. However, it is a hard process, it demands specific skills, practice and information from the teachers (Qaddumi et al., 2021). Moreover, teachers face some challenges that prevent them to integrate artificial intelligence in education (Puncreobutr, 2016). Challenges like; insufficient technical supports at schools and little access to Internet. Shortage of class time and time needed to learn were reported as two other key barriers for teachers to bring AI into curriculum (Morehead & LaBeau, 2005).

However, the mentioned studies considered the quantitative research design and data was gathered by questionnaire, but qualitative research design could also be adopted, as by taking students and teachers' perceptions in structured and semi-structured interviews. Such studies are mostly related to teachers and learners so their perceptions are very important.

Literature Review

The previous researches on challenges while using AI in teaching and learning process shows four aspects i.e. teaching and teaching planning, knowledge and attitude, training sessions of technology, support from school authorities. Further Ekberg and Gao (2018) elaborated these challenges as;

Teaching and teaching planning

Time is one of the most prominent challenges that teachers face to integrate AI in their classroom while teaching. Teachers need time to prepare backup plan (Ghavifekr et al., 2016). While, the other challenge for teachers is that they do not have all access to use technology based resources in the classroom. They do not have the pedagogical support to use AI in the classrooms. So because of the limited time teacher face challenge to get access to the resources (KOzma& Johnston, 1991). In addition, teachers also need the technical support if they get any fault in their ICT tools of teaching. The technical errors could be of two type technical problem by hardware side and technical problem by software side, so these problems hinder teachers to integrate ICT in the classrooms (Ekberg & Gao, 2018). Again these problems cannot be solved with in the limited time. The teacher also face the challenge to set the curriculum for the class taking in consideration the time (Mutisya et al., 2017).

Additionally, teachers' beliefs and attitudes influence how they employ AI in their classrooms. As a result, while implementing ICT in the classroom, teachers' attitude toward AI is critical (Hero et al., 2021). The findings of study of Shyamlee and Phil (2012) discovered that teachers' attitudes towards the technology is lack of confidence while employing it in their classroom. Many teachers are hesitant to apply technology in their classrooms and are anxious to put their ICT skills to use. Many teachers are likewise unaware of the educational benefits of developing technologies. They may lack desire to include them into educational activities if they do not have a clear knowledge of the possible benefits of doing so (Winer & Cooperstock, 2002).

Training and support

Another challenge is that teachers are not provided such trainings in which they may learn about adoption of upcoming or ongoing technological trends in classroom. Educators are not provided with effective trainings of technology, thus it creates gap between theory and practical implications of AI in classroom (Bracewell et al., 2007). Many schools do facilitate such training programs for teachers. In contrast, some training programs might not have positive influence on its adoption in teaching since knowledge that teachers gain from these training might be inadequate. Teachers in secondary schools often feel much pressure from school leaders to apply AI in their teaching (Rodríguez-Gómez et al., 2012).

On the other hand, for having a successful integration of ICT in teaching, there is a need for the schools leadership to give appropriate support to teachers (Gentry, 1995). The school leadership can play its role in two ways. First, they should integrate the use of AI in the curriculum. Then, teachers could have a clear plan to bring it in teaching. Secondly, the school leadership needs to work towards a clear vision and mission to integrate technology, and have a plan for it and invest in technology equipped classroom teaching (Hennessy et al., 2010).

However, the different studies have used the teacher's perceptions to find out the challenges that are hindering Educators while having use of AI in teaching and learning process, whereas, the educator means for both teacher as well as student so students' perceptions also play significant role in these challenges because they

also face different challenges i.e. some students have disabilities i.e. mental disability, and so, so the students can have other challenges from teachers.

Use of AI in classroom

Muslem and Juliana (2017) identified in her study on “The use of AI amongst EFL teachers: Perceptions and challenges” that executing AI in classroom may raise number barriers for teacher (Amuko et al., 2015). The challenges like lack of teacher confidence, lack of teacher qualification, resistance to change and negative attitudes, lack of time, lack effective training, lack of accessibility and lack technical support. These challenges do not allow them to use AI in classroom (Lu & Overbaugh, 2009).

Another paper disclosed that much of teachers do not have difficulty in utilizing artificial intelligence in teaching process, but few have, especially old age teachers have zero experience or were not ready to learn it, i.e. taking computer training (Bracewell et al., 2007). These teachers were not willing to switch traditional teaching mode to technology mode of teaching. The reason behind this is they facing a lot of difficulty while learning its usage in class as they have been using the traditional methods of teaching since long time (Ratheeswari, 2018). At the end, they understood that technology based teaching tools are extremely helpful to further develop teaching-learning performance (Lu & Overbaugh, 2009). Restriction of time was still quite difficult for teachers for learning and utilizing AI. Limited amount of instrument in the schools and low speed connections with web were also there (Delgado et al., 2015).

However, this study inducted the teachers’ perceptions to draw out the results while the challenges can be faced by administration, students, and other authorities concerned, so others’ perception is also mandatory.

Discouraging factors of AI for educators

The different studies had expressed that trending technology such as AI tools is advantageous for developing teaching process in classroom. Zambo, Buss, and Wetzel (2001) also found ICT are helpful for both teachers as well as for students in their teaching and learning, but are not problem free. Herro, Kiger, and Owens (2013) has differently concluded the in her study on “teacher factors influencing classroom use of ICT in Sub Saharan Africa”. Vrasidas (2015) found the three different challenges which hinder teachers to implement technology in teaching and learning process i.e. Cultural and Physical factors, Geographical factors, and Demographic factors.

In addition, the cultural and physical factors consisting absence of accessibility to electricity, less technology infrastructure (Rudnesky, 2003), medium of instruction and convenient software. Such issues of access are intensified by outrageous poverty, developing generality of HIV/AIDS, and less political willingness to reduce situation through legitimate planning (Hennessy et al., 2015). These includes levels of teachers “own education and literacy rates, and access to professional development play an important role (Ratheeswari, 2018). Indeed many studies indicate that it is teachers’ attitude, expertise, less autonomy or less knowledge to assess use or role of technology in teaching (technophobia in teachers) which are well known components hindering teachers’ readiness in utilizing support (AbuJarour et al., 2018).

Moreover, there is likewise an overall insufficiency of learning resources, course curriculum and other learning materials which fuse AI adoption (Salehi& Salehi, 2012). Review paper showed that it is a common misinterpretation that access to technology on its own spurs teachers to apply it in teaching. A biggest challenge for utilization of PCs distinguished by teachers were the lack of given time in classes, in addition, in their own timetables for planning; and the lack of a national policy on utilization of PCs in schools (Salehi& Salehi,

2012). But few teachers distinguished infrastructure problems, i.e. less working computers, problematic electricity or lack of access to web, although these are varied by country (Raby et al., 2010). The major challenges to ICT classroom use turned into absence of PCs hardware(60%), software(56%), and reliable web connections (52%), particularly in African countries, i.e. Mauritania, Ghana and Zimbabwe (Mutisya et al., 2017).

Undoubtedly, the less access to technology is a major problem in its application, on the contrary, availability does not necessarily translate into use. This shows that teachers face various problems while in real scenario students also have problem while integrating IT in their learning. The problems of students like fear of using technology, fear of using wrong and right etc. are main problems (Newhouse et al., 2002).

Methodology

The current study was conducted in higher education institutions of Larkana District. Research design employed was qualitative. Qualitative research is best when one has to answer why and how question in the research (Creswell, 2017). The reason behind is that epistemological and ontological stance of researcher in present study are associated with research title and its nature. As researcher believed reality is based on individuals' interpretation while knowledge is constructed by them. The population was all HEIs of Larkana District which include university of Larkana, SZABIST University Larkana Campus, Shaheed Muhtarma Benazir Bhutto Medical University Larkana, and Agriculture College Dokri. In addition, convenient sampling technique was utilized for selecting respondents because these students in these are approachable and easily accessible. The data was gathered by semi-structured interviews. Interviews are best to explore in-depth phenomenon of an event (Creswell, 2017). Before conducting SMI interviews a consent form was asked from participants to sign. They were told about rules, regulations, and ethics of research study like the personal data will be secure and will not be harmed. Further, the data was analyzed using thematic analysis. Themes were generated after the data was transcribed in English.

Findings

There are two major findings of present study aligning the objectives. Findings include Barriers hindering students in AI implementation in learning and learning experiences of students with AI.

Barriers hindering students in AI implementation in learning

The findings of present study showed that AI is a powerful tool helping in every walk of life specifically in the field of education. But the process of its incorporation is not a problem-free. There are obstacles that disturb its implementation. The problems are related to privacy and security of data, ethics, over-reliance of AI, and lack of awareness.

Issues related to privacy and security of data

Present study discovered that students fear that their data might be stolen because they upload their assignment and research work on different platforms like ChatGPT for getting feedback. Majority of the respondents agreed to this point claiming that their hard work might be wasted just because of AI. In this regard participants mentioned that G6: *"I am afraid of theft because whenever I think using any AI platform issues related to data privacy come in my mind. The reason behind is that I experienced this situation during my 2nd semester when I uploaded my assignment on ChatGPT to get feedback but it was plagiarized."* G2 *"I used my email for logging*

in in the free AI platforms but now I receive various spam emails which not trustable because in those emails there are various bugs which could harm my personal data.”

According to analyzed data in current study it was disclosed that free tools of AI always requires pupils’ to register themselves using their emails and other personal information and most students do it. But when they receive unwanted emails or messages on their emails and cell numbers so they fear that their personal data might be used for negative purpose and data might get leak. One of the participants mentioned that G9: *“I have always tried my best not to upload any of my assignments on ChatGPT or any other AI tool because I fear that my data could be leaked. Such apps ask for permission to do so but if we deny then we are unable to use these apps.”*

Problems of ethical considerations

Although AI is being utilized widely across the globe but there are not any clear rule and regulations for its usage. So, students are confused whether AI could be used for cheating when writing an essay or not, it is good to use in exams or so on. Moreover, it was also found in this study that AI is creating biasness in answering the subjective questions and sometimes also give old data. A participant in this regard told that G5: *“our teacher prohibited to use AI even for checking grammar but he did not told what happen if use it. This rule is only our department but we have not heard anything like that for other universities. Though AI is powerful tool for effective learning but I don’t know why it is not being allowed to us.”*

In this study it was found that some of the higher education institutes do not allow students to use AI fully rather it is acceptable to utilize at some extent. For example if students are permitted to adopt AI so they will do every assignment with its help and will not even change anything in it. According to a respondent G3: *“in our university it is prohibited to use AI in academic assignments like thesis and as per policy only 20 percent of AI is acceptable in rare cases. One of my friend used AI while making an assignment so he even not changed the heading and sub headings so his assignment showed 100 percent AI report which ethically not acceptable.”*

AI creates over reliance amongst students

As per the analyzed data in this study it is found that AI is an effective tool for doing tough tasks within short period of time but using it too much make students dependent of it. They do not do assignment by themselves rather give command to AI and take advantage of it. Not only this but they become lazy and their writing skills decline. Participants during their interview claimed that G2: *“after using ChatGPT for more than a year I am now unable to write even a paragraph because I am now habitual of using it.”* G4: *“my concepts are not that much good because I always ask Gemini to answer the question and do assignments instead of reading books and doing tasks myself.”*

Present study uncovered that AI is beneficial because it gives you quick answers and you just have to paste the questions in it. Students need not to think or write anything or put stress on their mind to develop a solid and reasonable solution of a problem but it could be problematic for them when they do not AI during their exams. A respondent in this regard mentioned that G8: *“I was unable to write anything during my exam paper. My mind was frozen and ideas were stuck. In my opinion this all happened because I use AI in my daily routine too much. My overreliance on AI made my mind corrupt.”*

Less awareness and understanding of AI

Findings of present study discovered that AI is not that much easy to use rather requires a proper training and skills but most of students are aware of this thing. Students use it without having proper knowhow of prompts.

They use it just for answering the question they have or getting the solution of a problem but they don't know that if they a strong prompt they would get a more accurate and genuine answer. Respondents in this regard mentioned that G4: *"I did not have idea that I can make references using AI I used to put references in my assignment manually."* G1: *"its been more than two years that AI is introduced but till now most of the students do not know how to use AI properly. They just consider AI as an answering machine."* G8: *"students are unaware about the AI tools because there so many and less students aware about which one is best to use."*

Majority of students agreed they are less aware about the AI platforms. They also mentioned that there are so many tools but we have less knowledge that's why we just pick any to use for our study purpose due to our lack of awareness we couldn't identify which one is genuine to use. Because of this students get biased answers. G3: *"I used AI in my last assignment of history subject but got unsatisfactory score and I didn't expect that because I though AI gives accurate data but I was unaware that the facts and figure could be wrong. So, one of my friend told that I have utilized wrong platform of AI that why the dates are incorrect."*

Learning experiences of students with AI

It is found in current study that AI negatively influence the learning experiences of students. The negative factors of AI are it declines critical thinking skills, reduces quality of education, declines motivation and providing miss guiding content, and minimizing engagement of students.

Declines critical thinking skills

Findings of present study showed that AI is advantageous but it declines skills of students for example academic writing skills, research skills, and critical thinking skills etc. The reason behind is that students get their all the work done by AI tools so they need not to think or write themselves. Undoubtedly, this is good gesture that students are using technology of present area but their skills are more important. It was mentioned by a respondent that G9: *"before AI I used to give 5 to 8 hours daily to my study including reading books, reviewing the literature for my research assignments but after AI I just give one hour to AI and all the things are covered within an hour. But I have noted one thing that now I am unable to think in-depth like even in my daily life problems I just take out my mobile and put my problem in Gemni and get answer but this thing declines my critical thinking skills which are very important."*

As per analyzed data it was uncovered that AI declines critical thing skills of students because they do all things like data analysis with the help of AI and they do not put stress on their mind to think for a while. This factor of AI is disadvantageous because it negatively influence students' critical thinking skills. G11: *"for me AI is like a blessing because it does all my assignments and homework but when it comes to write in exams I just feel my mind is frozen and I am unable to even generate a simple from my mind. This shows that AI is lessening critical thinking."*

Reduction in quality of education

It was found in this study that AI is useful but not a problem free because it reduces the quality level. For example students using AI are unable to attempt an exam paper themselves because are addicted to use AI. There is nothing wrong in adopting AI for learning but it would just create graduates not thinkers and scholars because they did their degrees using AI and took fullest advantage of it effecting quality of education and leaving negative impression on society G10: *"I use AI with my full interest but when it comes to present my work I am not confident of my own work because algorithm did all the things. Sometimes I think that if situation remain till graduation than what impression will leave for the others."* G2: *"the real meaning of education is to*

explore the things but after AI I didn't remember that I did so because AI do it for us so I think AI negatively influence the quality of education."

Furthermore, it was agree by most of the respondents that AI reduces the quality of education in a way that it do a hard task just within clicks so students need not to even think but when they serve in the market they will face challenges because the quality of education was affected. G4: *"in my point of view education means to learn skills like reading, writing, analyzing, synthesis and much more but AI just gives you the final product. Then where is the word learning? Job market would not check whether you have used AI or not but skills. So, in simple education quality is negatively affected by AI."*

Reduces motivation and provide misleading content

According to findings AI is considered as a teacher so students mostly rely on AI rather than going towards the teacher for any discussion regarding academic affairs. This is good to reduce burden from the teacher but teacher guidance place pivotal role because he is not just a teacher but he will also assess your performance. Students take guidance from AI but when teacher take mistakes from their work they get discouraged. In simple, the gap between student teacher interactions create demotivation. G9: *"I remember I have interacted with my teacher just for two times otherwise I always take help of AI."* G3: *"Studying alone with AI is boring because there none to argue."* G5: *"AI is good but human feedback has more weightage thus my motivation dropped."*

Moreover, AI is misleading students in their learning. As per students' responses AI is useful but for those who are well trained otherwise there are so many platform which provide fake information, wrong dates of past events, and bogus references. In simple, AI sometimes facilitate students with misleading content which affect their academic performance. In this regard respondents mentioned that G7: *"I did my assignment using AI but after feedback I saw teacher marked half of the references read and commented that these references are fake and unavailable online."* G9: *"I learned physics concepts from AI at eleventh hour but after the result I saw those concepts were wrong because the AI source was unreliable thus it provided me wrong concepts."*

Minimizing engagement in learning

AI discourages physical involvement of students in learning activities because student get their work done by it. They do not need to get themselves involved in physical activities rather mental involvement. AI facilitate them everything within their fingertips. G2: *"After the introduction of AI I have read the books very often because I just put the name of book and author and ask ChatGPT to summarize it and it does it in seconds then why should I waste my time reading whole the book."* G1: *"even I feel classes are of no importance because AI is able to summaries and analyze a huge content within no time."*

Additionally, majority of respondents also agreed to this point that AI has reduced the engagement of students in process of learning. G1: *"I attend classes just for the sake of attendance otherwise my all the assignments and research work is done by AI."*

Discussion and conclusion

There were two main objectives of current study. First objective was to explore barriers hindering students when they utilize artificial intelligence applications. In this objective various challenges that disturbed students to adopt AI in their learning were found. These challenges include privacy and security of data, ethical considerations, over reliance of AI, and lack of awareness and understanding. It was uncovered that artificial intelligence is a productive tool but students fear that their personal data like national identity number, cell

number, and other bio data might be leaked. It was also mentioned by the respondent that they faced such problem in reality. The results of the study conducted by Ali et al. (2024a) aligned with it which showed that it has become very common that social media accounts of students being leaked and reasoned behind is that they give access to online tools like ChatGPT etc. using their Gmail IDs which is against ethics.

In addition, study found that there are not proper rules and regulations related to the use of AI in learning process. For example whether one can utilize AI for writing essays or not because in some HEIs it is allowed to use while in some HEIs it is not. Ethically AI should not be allowed to use when there is any subjective work because it creates biasness. Salido (2023) has identified AI is both advantageous and disadvantageous based on its proper use. If a person uses it positively s/he will benefit from it while, the other would be harmed. Moreover, study showed that AI equip individuals with over reliance in terms of its use. Because when students find it easy to answer a question on AI they will be addicted to it. Ali et al. (2024a) also identified that AI is useful but using it for longer period of time creates over reliance amongst students. Lastly, it was found that most students are less aware of proper use of AI in learning process because there are so many AI based ChatBots like Gemini and ChatGPT etc. but individuals don't have any idea about which one is genuine. Salido (2023) pointed out that it is not that much easy to use AI because it requires proper training other it could misguide the pupils.

Second objective was to explore learning experiences of youngsters with AI. In this objective learning experiences whether positive or negative were explored. Learning experiences such as AI lessens reasoning skills, declines quality of education, sometimes give misleading content and discourages pupils, and physical engagement of students in learning activities is also negatively affected.

It was disclosed in present study that AI instead of improving critical thinking declines them because students who utilize AI always make their assignments and other academic tasks through it. However, Aithal and Aithal (2023) discovered that AI is too attractive that students become addicted to it after they use it once. But this addiction negatively affect their critical thinking skills. Over dependency on AI disconnect students from physical learning activities. Moreover, it is true that AI provides a vast learning material from different ChatBots but it is undeniable that not all the AI tools are genuine so students might get bogus facts and figures. Thus, students could not shine in the exams and their concepts are no up to the mark. So, students who complete their degree depending on AI could not be considered under the category of quality education. The study by Lim et al. (2023) mentioned that though technology has coined traditional education to students centered education but it has declined that quality of education because most people do not know the reliable sources of AI where they could access the correct information or otherwise it could produce low quality graduates who will struggle to survive in the job market. Nonetheless, this study found that AI platform reduce engagement of students because they just do everything using AI platforms. Ali et al. (2024a) have showed that students often avoid involving themselves in the learning activities because they get everything from AI and think that there is no need to physically engage themselves.

In conclusion, it has been identified in this study that AI is very useful tool for learning but requires specific training because untrained people could be misguided. It was recommended that there should proper training programs for students so that their valuable time should not be wasted in useless and bogus AI platforms. In addition, the study found that most of students are not aware about the AI so authorities concerned should arrange awareness seminars for them so that they could be on right platforms. However, these recommendations should be timely followed for the proper use of AI in the higher education institutes.

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