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Exploring University Students' Experiences of Using Generative AI for Academic Learning in Pakistan

Komal Memon[1] Sahar Momal Memon[2] Dr. Muhammad Ashraf Bhutto[3]

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Abstract

The fast development of generative artificial intelligence (GenAI) has brought significant changes into the way university students search for information, think up ideas, communicate, and learn academically. While many studies have been devoted to the opportunities and obstacles associated with the use of GenAI in education, there is a scarcity of qualitative research on the use of GenAI by university students in Pakistan. The current study investigates the experiences of using generative AI for academic learning among university students in Pakistan, particularly focusing on students' motives, use, perceived benefits, challenges, ethical concerns, and evaluation of the information generated with the help of AI. The interpretive qualitative phenomenological methodology was applied in order to obtain in-depth insight into the experiences of the participants. Data collection was performed via semi-structured interviews with university students who had previously used GenAI tools for academic purposes. The analysis of the interview data was thematic, which entailed finding the recurring themes and patterns in the participants' responses. The results revealed that the students see GenAI as an accessible and convenient learning assistant that is able to facilitate conceptual comprehension, writing, idea formation, language improvement, and academic productivity. However, the participants pointed out the problems associated with the accuracy of AI-generated information, overreliance on the technology, academic dishonesty, and confusion as to how to use the technology. The results also show that the issues of AI literacy, critical thinking, and guidance from institutions are important in order to ensure proper use of GenAI in higher education.

Keywords: Generative Artificial Intelligence, University Student, Academic Learning, ChatGPT, AI Literacy, Higher Education, Pakistan.

[1] MS Research Scholar, SZABIST University, Larkana, Sindh, Pakistan.

[2] MS Research Scholar, SZABIST University, Larkana, Sindh, Pakistan.

Email: memonsahar21@gmail.com

[3] Assistant Professor, SZABIST University, Larkana, Sindh, Pakistan.

Email: muhammad.ashraf@lrk.szabist.edu.pk

Corresponding Author: Komal Memon, **Correspondence through:** komal.memon189@gmail.com

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Introduction

The speedy progress of Generative Artificial Intelligence (GenAI) is revolutionizing the world of higher education, redefining how students obtain knowledge, create their own ideas, communicate, and accomplish their academic assignments. The use of such programs as ChatGPT, Gemini, Microsoft Copilot, and any other types of generative AI may involve the creation of human-like texts, the summarization of complicated information, explanation of concepts, help in writing, and feedback generation. Contrary to traditional digital tools, GenAI has an ability to communicate with students in a conversation style and generate texts as a reaction to personal requests. Hence, the development of this kind of technology has provided the world of education with various opportunities and challenges at the same time.

It is especially important to note that the introduction of GenAI in education becomes very crucial for university students who face these kinds of technologies in the process of their academic studies. The student can utilize GenAI to comprehend complex topics, to conduct brain-storming, to summarize information from educational materials, to enhance language and writing skills, to create a presentation, to make up questions, or to receive help with academic assignments. All of the above-mentioned examples imply that GenAI is not just another digital tool but it can also affect the way the students perceive knowledge, learning, and solving academic problems. At the same time, the students are not always experiencing these technologies in the same way.

Therefore, the learning opportunities that GenAI holds must be viewed together with its shortcomings. Even though the answers provided by AI could be fast and easily accessible, there are possibilities that the answers might be inaccurate, incomplete, biased, or simply fictional. Students accepting such answers without questioning will either end up having the wrong idea or even becoming more reliant on automated help than ever before. In addition, the issue of plagiarism, authorship, academic cheating, privacy, and appropriate line between academic help and assistance has been raised in relation to GenAI. These issues have become especially important in terms of higher education since universities do not only provide students with the opportunity to learn, but also to critically think and reason on their own, conduct research, and be academically responsible.

The matter becomes even more pressing in the case of developing higher-education systems like that of Pakistan, where digital transformation is taking place alongside ongoing technological inequalities in terms of access to technology, digital competences, infrastructure, and educational resources. The way in which Pakistani university students are likely to experience GenAI will depend on factors like their socioeconomic background, geographical location, institutional setting, access to digital technologies, internet connection, and technological competence. Moreover, the language and educational background of Pakistan may influence the way in which students engage with the predominantly English-speaking GenAI system. Although GenAI can help students struggling with academic writing and limited access to educational resources, there can be inequalities in access and digital competences.

In spite of an ongoing international debate about the role of artificial intelligence in higher education, there is a need to consider the viewpoint of students themselves with regard to GenAI in Pakistan. In most cases, the studies emerging in the literature deal with the possible advantages and threats of AI, attitudes of students toward AI, or the quantitative estimation of both the rate of implementation and acceptance of AI. These methods are capable of delivering important information about trends and correlations but not sufficient to comprehend the experience of students thoroughly. Thus, a survey may reveal the fact that students apply ChatGPT in their study

processes, but at the same time, it will not provide the explanation of why and how they do it, what problems emerge in their work, how they estimate the credibility of AI-driven information, and how they distinguish help from cheating. The application of a qualitative method will make it possible to get answers to these questions from students themselves.

Under these circumstances, the current research aims to analyze university students' experiences with the use of Generative AI in their academic learning processes in Pakistan. Instead of measuring the penetration rate of AI by means of predetermined factors, the current research focuses on studying how university students experience and understand Generative AI in the context of their academic lives. Specifically, the focus will be put on the reasons for students' use of Generative AI, the ways in which they use it in their academic learning process, the advantages and disadvantages associated with it, the issues of academic integrity and proper use of GenAI, and the strategies used by students to assess AI-produced information.

This study is set to provide context-specific qualitative data on the use of AI in higher education and thus contribute to the growing literature in the field. The results obtained from the study will aid educators, universities administrators, and policy makers in realizing how students use GenAI as opposed to assumptions of what effects it will have on education. Most importantly, the study will contribute to the development of AI literacy, use policies, and pedagogies considering both the benefits and challenges of generative AI. This means that the study goes further than addressing whether students use GenAI, but asks an important question as to how university students experience, negotiate and incorporate generative AI in their academic learning.

Literature Review

1. Generative Artificial Intelligence in Higher Education

The advent of generative artificial intelligence (GenAI) has led to a major shift within higher education. Whereas the traditional digital technologies are mainly concerned with offering access to existing data, GenAI tools have the ability to produce text, explanations, summaries, examples, questions, among other content based on user inputs. In particular, the advent of ChatGPT has sparked discussions concerning the role of this technology in teaching, learning, assessment, academic writing, and research. Recent literature reviews have shown that the research concerning the use of ChatGPT in higher education is growing exponentially, and includes issues such as adoption, learning applications, academic performance, students' experiences, assessment, and ethical considerations (Baig & Yadegaridehkordi, 2024; Bhullar et al., 2024). Evidence from systematic review also suggests that the research of GenAI in education is still emerging and there is need to address how students adopt such technologies (Albadarin et al., 2024).

The reason for the popularity of GenAI lies in its ability to offer interactive and customized support. Learners could ask questions, ask for another explanation, get examples, sum up information, get ideas, and even get language assistance through conversation. Tlili et al. (2023) in their qualitative case study of ChatGPT use in education, reveal the interest in the technology and the problems that arise when using it in an educational context. These findings prove that GenAI is not only a technological innovation but a technology that can change the dynamics of the relationship between the learner, knowledge, and learning.

Similarly, UNESCO (2023) highlights that GenAI has enormous potential for curricular development, teaching, learning, and research, along with posing some problems in terms of privacy, equity, inclusion, ethics, and readiness of institutions. It means that a human-centric

perspective on GenAI is needed to leverage its potentials in education without replacing human interactions and independent work of students.

2. Students' use for Generative AI for Academic Learning

Another group of people who are frequent users of GenAI technologies is university students. Students may use ChatGPT and similar services for brainstorming, summaries of academic information, explanations of difficult material, grammar improvements, translation, outline creation, preparation of presentation, generation of practice questions, and getting help in completing tasks. According to Baig and Yadegaridehkordi (2024), applications of ChatGPT in higher education have grown more diverse and now involve students, teachers, researchers, and other participants of academic processes.

Student-oriented research provides evidence of how fast GenAI became a part of students' lives. Johnston et al. (2024), conducting a large survey of university students, found out that students are aware of generative AI and make use of it for academic purposes. However, they differentiate between permissible kinds of assistance provided by such software and broader usage like asking the AI to generate the whole essay. The fact that students differentiate between different uses of technology indicates that not all AI assistance is considered academically equal.

The research of students' perspective reveals that they are aware of both advantages and disadvantages of GenAI. Chan and Hu (2023) found out that university students are interested in GenAI and see potential benefits of using it regarding learning, productivity, and accessibility, but also express concern about its accuracy, ethical issues, and academic integrity. It can be concluded that experiences of students are too complicated to be measured using the indicator of technology acceptance.

3. Perceived Educational Benefits for Generative AI

The potential for personalized learning through interaction with GenAI systems emerges as one of the main topics in the literature. Each student may communicate with an AI system at his/her own pace and in accordance with his/her own learning needs and ask for repetitions and alternative examples. Mohebi (2024) states that ChatGPT can potentially assist learners in terms of providing accessible help and supporting various aspects of academic performance. The tool may be particularly helpful for those learners who need to get additional explanations beyond traditional classroom interaction.

Moreover, GenAI may assist in academic writing. Learners can use various AI tools in order to find grammatical mistakes in their texts, organize their sentences, rearrange the ideas, create outlines, etc. Such an approach to using GenAI is especially appropriate in multilingual higher education context when the students might have problems with academic English. Moreover, there is evidence that the use of GenAI among the non-native English speakers tends to be higher in order to address writing tasks, which means that such tools might function as language-supporting technologies (Vasconcelos et al., 2024).

The third perceived benefit of GenAI is its efficiency. The students can use this technology in order to summarize information, brainstorm ideas and do other routine tasks related to their academic performance. However, efficiency does not necessarily mean good learning experience. If the learner uses GenAI only in order to make his/her academic tasks less effortful, he/she may miss the opportunity for independent thinking and reasoning. Thus, the educational value of GenAI heavily depends on the way and reasons for which the student uses it and not just on the fact of usage.

This conclusion is supported by the research findings about students' views on GenAI. Almassaad et al. (2024) found that students identified both advantages and challenges in relation to GenAI.

4. Challenges and limitations of Generative AI

Although there are numerous opportunities, there are many challenges associated with GenAI in relation to university students. Firstly, GenAI tools have a great potential of producing inaccurate and unreliable content since the system is able to give convincing yet inaccurate answers, baseless statements or citations. In order to overcome this challenge, students have to possess enough critical thinking and digital literacy skills in order to be able to evaluate the generated content and not to take it at face value.

According to Albadarin et al. (2024), in their systematic review of empirical studies concerning ChatGPT in education, there are a number of concerns concerning using this tool in educational practice. Moreover, as authors claim, more empirical research on this topic is needed to examine in detail how ChatGPT is integrated into educational practice. Baig and Yadegaridehkordi (2024), in turn, concluded that despite the wide usage of ChatGPT in higher education there are still important limitations and research challenges connected with it.

Another challenge is the dependence of students on AI. It is possible that students who use automatic tools for generating answers, ideas, or written assignments will become less engaged in searching and reasoning. According to Stojanov (2023), who studied learning with ChatGPT, there is an opportunity for conversational AI to serve as a knowledgeable learning partner although there is also a question about over-reliance of students on the technology.

5. Academic Integrity and Ethical Concerns

The issue of academic integrity is now becoming one of the most critical problems linked with GenAI in academia. As ChatGPT and other systems can produce essays, answers, summaries, and other kinds of academic papers, traditional definitions of authorship and plagiarism come under question. According to Cotton et al. (2023), the availability of ChatGPT poses significant problems for academic integrity because students might employ it to generate their academic work to present it as theirs.

The perceptions of academic integrity held by students, however, might be more complex than their institutions imply. According to Johnston et al. (2024), students showed significantly lower levels of support for the use of ChatGPT to write essays than for the use of AI-based systems for more modest purposes. Additionally, a study of Australian university students demonstrated that more than one-third of respondents had employed a chatbot to facilitate their assessments; some participants did not see the use of such technology as a violation of academic integrity (Sullivan et al., 2024).

This finding is critical in terms of the fact that it suggests that the students themselves can have different perceptions of acceptable use of AI systems. The boundaries of proofreading, brainstorming, explaining, content creation, and completion of the assessment tasks might be blurred in some cases. Thus, the perceptions of students about how to use AI technologies in a responsible manner is another field for qualitative research.

Apart from academic integrity, there are also privacy, bias, transparency, and responsibility problems associated with GenAI. UNESCO (2023) points out that educational organizations need policies and protections regarding data privacy, ethical validation, equity, and responsibility. This

means that universities should not either prohibit or promote GenAI; instead, they need to ensure that students acquire the necessary skills.

6. AI Literacy and Critical Evaluation

Effective application of GenAI technologies demands knowledge of how AI systems operate, prompt formulation, recognition of system limitations, information assessment, source verification, as well as distinguishing between accurate and inaccurate results of such use. Such skills are increasingly referred to as AI literacy.

Importance of AI literacy is especially apparent as GenAI systems provide fluent and authoritative answers despite the absence of correct information. Therefore, students with developed skills of critical evaluation will be able to use GenAI as a learning tool and remain responsible for the accuracy of their work.

According to Foltynek et al. (2023), proper and ethical use of AI in educational context requires the awareness of issues of academic integrity and institution-related guidance. In addition, systematic analysis of GenAI and academic integrity suggests that digital literacy and appropriate actions taken by institutions are important means of addressing risks related to AI-assisted academic work (Ali et al., 2025).

Thus, studying students' experience may help to discover not only the prevalence of GenAI use among students but also how students assess trustworthiness of the results produced by AI systems, verify information and identify situations of improper use of AI.

7. Generative AI and Higher Education in Pakistan

Contextualization of higher education in Pakistan is another relevant area where research on GenAI could be undertaken. Universities in Pakistan are becoming more engaged with digital learning tools, but the level of access of their students to digital materials and technological literacy might differ significantly. Such discrepancies may affect students' interaction with emerging AI technologies.

There is a lack of research on the application of GenAI to Pakistani higher education relative to the emerging international body of literature on the issue. For instance, Balqees et al. (2024) analyzed the implementation of ChatGPT into the processes of teaching and learning at Pakistani universities, stressing its capacity to increase the efficiency and personalization of education. However, more extensive research is required to examine the experiences, motivations, barriers, and ethical implications of GenAI use by students in Pakistan.

Moreover, the multilingual and diverse in terms of technology educational environment of Pakistani students may affect their interactions with GenAI. Disparities in internet accessibility, availability of devices, technological literacy, field of study, policies of institutions, and the level of English language proficiency may affect such interactions. Therefore, the results obtained in the West and other educational contexts cannot be generalized to Pakistani universities.

8. Research Gap

While the extant literature shows significant interest in the topic of GenAI and higher education, several gaps in knowledge can still be noted. The first one is that most of the current studies rely on quantitative surveys, systematic reviews, adoption models, as well as measurements of students' attitudes or intentions. While the above-mentioned approaches are helpful in understanding

patterns of usage, they reveal little about the meanings and experiences that students attach to their use of GenAI.

The second gap is related to the fact that most studies analyze benefits and risks of the technologies separately. However, the experiences of students might include contradicting perceptions. For instance, a student might see a great benefit of using ChatGPT to understand the challenging concepts while at the same time being aware of the risks of developing dependence on the technology. Furthermore, it is possible that a student would see the correction of grammar mistakes as being acceptable but AI-written assignments – academically inappropriate. Such experiences are hard to capture through predetermined survey questions.

Additionally, despite some research on the experiences of students is appearing on an international level, there is still a need for the context-specific qualitative data from Pakistan. Some recent Pakistani studies started to examine the educational uses of ChatGPT; however, further research on how students use GenAI in their everyday practice is needed.

Finally, despite the growing interest in the field, relatively little attention has been given to the process of integrating GenAI into the learning of students. While knowing that a student uses ChatGPT does not say anything about whether they use the technology to grasp the concepts or write the essays, brainstorm ideas, translate texts, do research, complete assignments, etc., and how students verify the information provided by the technology and distinguish between acceptable usage of the technology and academic misconduct.

Thus, the present study aims to address the identified gap and explore university students' experiences of using the technology for academic learning in Pakistan. Qualitative research design is particularly appropriate as it enables students to describe their experiences, motivations, perceptions, challenges, ethical concerns, and coping mechanisms in their own words.

Research Methodology

Research Approach and Design

This study uses a qualitative research methodology to examine the experiences of GenAI in academic learning among university students of Pakistan. This is because the nature of the research problem suggests that the focus would be to learn about the perception, experience, motivation, challenges, and interpretation of GenAI usage rather than the amount of GenAI usage by university students. Interpretive phenomenology methodology will be used to understand the experience and interpretation of GenAI among the university students.

Phenomenological philosophy is most suitable for this research problem as it aims at examining the personal experiences of those who have used GenAI in their academic life. GenAI usage is not assumed as a set of variables that can be measured through this research but rather what the students say about their experience with AI technology.

Research Setting

This research will be carried out amongst university students attending higher educational institutes in Pakistan. In order to include a wider variety of students' experiences in this research study, participants can be selected from universities belonging to various geographic locations and differing institutional settings. Specifically, the study will include those students who have had experience in using the applications of Generative AI such as ChatGPT, Google Gemini, Microsoft Copilot, Claude, or similar artificial intelligence tools in their academic pursuits.

The higher-education setup in Pakistan offers a significant environment for this research study since there may be a wide variety of digital capabilities, competencies in technology, institutional support, and familiarity with artificial intelligence amongst these students.

Participants and Sampling

Target population will be the university students in Pakistan that have utilized at least one GenAI tool for their academic learning. Purposive sampling will be done to recruit participants in the study. Purposive sampling is the right sampling technique for the study as it requires participants that have firsthand experience of the phenomenon.

To ensure diversity of views, maximum variation purposive sampling technique will be utilized. Students can be recruited based on certain criteria like gender, academic discipline, level of study, university type, geographical location, and GenAI experience among others. The approach will ensure that the study captures both divergent and convergent experiences.

Around 15 to 25 students might be recruited initially. Recruitment of participants for the study will not just depend on pre-defined number of participants but will be continued until there is enough information power or thematic saturation. Information saturation will be attained when the interviews conducted do not provide any new insights relevant to the study.

Data Collection Instruments

The data will be collected through semi-structured individual interviews. Semi-structured interviews are suitable since they ensure consistency in data collection among participants while giving the researcher the opportunity to pose additional questions depending on issues raised during the interviews.

An interview guide will be developed on the basis of the research objectives and relevant literature on GenAI, digital learning, AI literacy, academic integrity, and technology usage in higher education. The questions will be open-ended so as to give room to participants to express their experiences.

An interview guide will include six main themes such as:

- experiences of students in using GenAI;
- reasons for using GenAI in academic learning;
- education benefits derived from the usage of GenAI;
- issues faced in using GenAI;
- academic integrity in AI usage; and
- recommendations on the future usage of GenAI in higher education.

Interview Questions Include

1. Could you tell me about your experience of working with generative AI in the course of academic education?
2. What are the reasons that drive you to utilize AI for academic needs?
3. How do you work with tools like ChatGPT and/or Gemini?
4. Could you provide an example when generative AI helped you with something?
5. Could you tell me if you faced any issues with the use of generative AI?
6. How do you check if the information provided by the AI is true?

7. What are your thoughts on using AI to complete assignments and academic tasks?
8. Do you think there is a line that should not be crossed when it comes to AI use?
9. Does your interaction with AI change anything in your studying? How?
10. What help could/should universities provide to students to use AI responsibly?

Data Collection Procedure

Once the required ethics approval and institutional approvals have been secured, the participants will be contacted using the relevant university networks and student associations. The eligible participants will be informed about the purpose of the research, voluntary participation, confidentiality arrangements, and withdrawal options.

The interviews can either be done in person or through a virtual medium depending upon the availability and location of the participants. Each interview is expected to take 30 to 45 minutes. With the permission of participants, the interviews will be recorded in audio form for accurate transcriptions. Notes will also be taken during the field observation.

The interviews will be held in a language where the participants feel comfortable enough to convey their experiences. In case of necessity, interviews may be held in English, Urdu, or some other widely spoken local language. The transcriptions of the interviews will be carefully done in English language without changing the meaning of participants' responses.

Data Analysis

Thematic analysis will be utilized for interviewing data analysis in accordance with its characteristics that allow the researcher to define, interpret, organize, and report patterns of meaning in the data. Thematic analysis will involve the following steps. First of all, the researcher will become acquainted with the data through multiple readings of the interview transcriptions and listening to the relevant audio records.

Next, initial codes will be developed systematically across the data set. The codes can refer to the participants' experience, motives, advantages, difficulties, ethical issues, learning techniques, and recommendations. Then, the researcher will examine the codes that are related and group them into potential themes. Subsequently, candidate themes will be reviewed against the coded excerpts and data set to see whether they accurately represent the participants' experience. After that, themes will be developed, defined, and labeled. In addition, the results will be presented through an analytical narrative based on selected quotations from the participants.

Possible themes that may be included in the study can include AI as a learning assistant, convenience and productivity in studying, enhanced understanding, assistance with writing and language, fear of inaccurate information, dependence on AI, academic integrity issues, AI literacy and verification techniques, and institutional expectations. Nevertheless, those are just possible themes that will arise from the participants' experience.

Qualitative data analysis software like NVivo or ATLAS.ti can be used in order to manage data (transcripts, codes, and thematic connections). The software will help organize data, but it will not replace the researcher's interpreting role.

Trustworthiness of Study

The validity of the findings in terms of the qualitative research criteria will be assured through the principles of credibility, transferability, dependability, and confirmability.

Credibility will be increased through prolonged engagement with the data collected during interviews, careful questions and coding, and the use of participants' quotes to show how interpretations are based on the data collected. Where necessary, participants can be asked to confirm their interpretation of the statements.

Transferability will be achieved through the provision of detailed information about the research context, participants, sampling process, and GenAI experience. This will make it possible for readers to judge the generalizability of the findings to other higher education contexts.

Dependability will be assured through the maintenance of an audit trail that documents all procedures of the research, the interview process, coding process, theme generation, and changes in methodology made during the research process.

Confirmability will be increased through reflexivity. The researcher will keep reflective notes throughout the data collection and analysis to identify researcher assumptions and thus reduce the impact of the researcher's biases on the interpretation. Quotes from the interview will be used to show the link between participants' accounts and themes generated.

Ethical Consideration

Approval for the study will be sought from the institution's Research Ethics Committee prior to conducting the research. The process of participation is completely voluntary and informed consent will be sought prior to the commencement of interviews.

The aim of the study, the length of the interview session, the recording of the interview, the confidentiality of the participants, the right of withdrawal, and the lack of any personal identifiers in the final report will be clearly explained to the participants. The participants will not be identified by name but will be referred to by code names.

Methodological Summary

In general, this research would be done by adopting a qualitative interpretive phenomenological design that would be used to examine the experiences of university students regarding the use of generative AI for academic learning in Pakistan. In terms of participant selection, purposive sampling would be employed whereby participants who have experience with GenAI would be included in the sample. The interviews conducted will be semi-structured interviews that would describe the experiences of these students in detail. The analysis of data would be thematic, where the criteria of credibility, transferability, dependability, and confirmability would enhance trustworthiness.

Findings

Themes emerging from the analysis of the semi-structured interviews on the topic of university students' experience of using Generative Artificial Intelligence (GenAI) in academic studies included several interrelated issues. First of all, the results showed that the use of GenAI by students was perceived as easy and convenient access to knowledge resources, especially in relation to comprehension of complicated concepts, idea generation, academic writing, and academic tasks completion. At the same time, the use of GenAI raised some concerns about its reliability and academic integrity.

The analysis generated Six Major Themes

1. **Generative AI as an On-Demand Learning Assistant**
2. **Academic Writing, Language Support, and Idea Generation**
3. **Convenience, Efficiency, and Changing Study Practices**
4. **Trust, Accuracy, and the Need for Human Verification**
5. **Academic Integrity and the Boundary of Acceptable AI Use**
6. **Developing AI Literacy and the Need for Institutional Guidance**

Theme 1: Generative AI as an On-Demand Learning Assistant

The participants found GenAI to be easily available assistance in the form of an academic assistant which would be able to explain anything anytime they found problems with understanding the course content. As opposed to seeking help from their teachers or other students, the participants felt that they would be able to communicate with AI and ask for explanations based on their comprehension of the topic.

Some of the participants also claimed that they used GenAI to simplify concepts, provide examples, summaries of academic content and explanations of the topics that they could not understand in their lectures.

It is evident from the participants' responses that the conversational nature of GenAI set it apart from conventional online searches. They could ask for further clarifications and explanations when the initial answers did not suffice.

In general, it can be said that the participants viewed GenAI as academic assistance on-demand.

Theme 2: Academic Writing, Language Support, and Idea Generation

Another notable theme referred to the use of GenAI in writing academic papers and development of ideas. The participants shared that they used the technology to brainstorm topics for research, outline ideas, improve sentence construction, find grammatical mistakes and structure arguments.

For some students, the use of GenAI seemed to be especially helpful when it came to language. Participants reported that the technology assisted them to make academic writings more coherent and organized and offered new ways of expression.

Moreover, some students reported the use of AI in the preliminary stages of assignments and research works. Instead of demanding the immediate response, the participants claimed that they used the technology to generate different directions, find subtopics and structure their ideas.

However, the reports of participants may demonstrate an important difference between writing with the help of AI and using AI for writing. Some students considered the use of GenAI for proofreading and brainstorming as acceptable but not the submission of AI-generated work.

Theme 3: Convenience, Efficiency, and Changing Study Practices

Convenience and time-saving aspects of GenAI were mentioned by participants several times. Students reported using AI to summarize big amounts of information, get quick answers, organize information and perform other routine academic tasks faster.

It seems that GenAI is changing the study practices of students. While in the past students were consulting textbooks, search engines, lectures or teachers, currently students started using AI as an initial means of consultation.

While some participants thought that this was a positive thing because it allowed them to spend more time on other academic activities, others were worried that the convenience of AI would make students take the easy way out and do not study properly.

It can be seen that the convenience of GenAI does not necessarily mean the better learning practice. For some students, AI became additional to their study practices but for others – substitution of some part of the learning process.

Theme 4: Trust, Accuracy, and the Need for Human Verification

Even though participants recognized the benefits of the use of GenAI, they did not consider AI-generated responses entirely reliable. Inaccurate or incomplete information was another issue.

Participants shared their experiences of getting convinced by the information provided by AI and having to verify it further.

Thus, from the experience of students, using GenAI is associated with the negotiation of trust. Students can accept AI as an easy means of getting help, but then they need to check if the information provided is true, basing on their previous knowledge or other sources.

At the same time, different students can verify AI-generated information differently. The participants who have greater research skills or digital skills may need to check the information more thoroughly than others.

Therefore, the findings revealed the importance of critical AI literacy. The effective use of GenAI is connected not only with the receiving of information but also with its evaluation and responsibility for its credibility and accuracy.

Theme 5: Academic Integrity and the Boundary of Acceptable AI Use

Academic integrity became an area of interest in terms of GenAI usage. There was a variation among the participants as to the appropriateness or inappropriateness of the utilization of the technologies.

Most of the students managed to differentiate between the use of AI as an auxiliary technology and the use of it to create their academic writing assignments. The activities like grammar correction, brainstorming, explanations, and summaries seemed to be more appropriate than submitting AI-generated academic assignments without any participation of students.

Participants also seemed to be confused about institutional regulations. The students are aware of the policy of universities towards academic cheating but unsure whether the specific use of AI like rewriting, paraphrasing, outline generation, or language improvement is allowed.

That seems to indicate the discrepancy between the quick adaptation of GenAI by students and the lack of institutional policies. Consequently, students will form their rules of use of the technology.

It becomes evident that the ethical issue in terms of the technology is not in the use of GenAI by students but rather in the manner of its usage and the amount of participation of students in creating their assignments.

Theme 6: Developing AI Literacy and the Need for Institutional Guidance

The last theme is about students' perceptions about the need for increased awareness and institutional guidance about AI. The experiences of the participants indicated that students needed more than just access to GenAI. They needed an understanding of how to prompt, verify information, use GenAI responsibly, maintain academic integrity, cite, protect privacy, and understand the limitations of the generated information.

Students may also suggest that the institution formulate policies that will clarify which kinds of AI usage are allowed in assignments, examinations, research, and academic writing. Instead of banning the technology, some students may advocate for measures that educate students on using the technology responsibly.

It seems that in this case, students are not perceiving the institutional regulation and AI adoption as two mutually exclusive goals. On the contrary, they see guidance as a means of adopting GenAI effectively. It seems that in this case, students are not perceiving the institutional regulation and AI adoption as two mutually exclusive goals. On the contrary, they see guidance as a means of adopting GenAI effectively.

Cross Theme Interpretation

The six themes reveal that the experience of students regarding the use of GenAI involves opportunities and challenges at the same time. The students see GenAI as accessible, convenient, and valuable in terms of helping them learn academic concepts, improve their writing, create ideas, and perform academic tasks. On the other hand, there are certain limitations that students realize with regard to the use of inaccurate data, dependency, academic integrity, and uncertain ways of using it.

One of the important findings that can be noticed in the presented themes is that the experience of students is neither entirely positive nor negative in nature. Instead, it seems that the role of GenAI in students' lives is negotiated by them depending on the purpose for which it is used. If the GenAI assists in understanding, brainstorming, feedback or in language improvement, then it is considered appropriate. Otherwise, there may be problems with it.

Therefore, one more finding that may be obtained from this research is that the AI literacy of students plays an important role in the appropriate use of GenAI. Those who are aware of the limitations of AI and constantly verify the results will benefit from it without risking their learning. Thus, the findings imply that the universities should take steps beyond mere prohibition.

Discussion

In the current study, the focus was placed on the experiences of university students using generative artificial intelligence (GenAI) as an educational tool in Pakistan. The results of the research indicate that students believe that there is potential in GenAI as a learning tool but also identify the limitations and ethical issues related to its use. With respect to the discussed themes, the experiences of students show that GenAI is becoming more incorporated in the processes of learning, including the clarification of concepts, academic writing, ideation, information processing, and time management.

Generative AI as an Accessible Learning

Among the key findings is the perception of GenAI as an immediate and accessible learning aid. The students can always contact the AI system when faced with academic problems and ask for

explanations at varying levels of complexity. This quality could be especially useful for independent learning since there is no need for the students to wait for a class or teachers' direct help.

The current finding is in line with existing literature where ChatGPT and other GenAI systems are found capable of providing interactive and personalized support for learning. Chan and Hu (2023) report that university students were aware of the ability of generative AI to help them with learning, while Tlili et al. (2023) identify personalized interaction as one of the learning opportunities presented by ChatGPT. This research adds to existing literature by focusing on students' experience of accessing AI as a learning assistant rather than an information resource.

At the same time, it becomes clear that the concept of accessibility might have two sides to it. On the one hand, the possibility of contacting an AI learning assistant immediately helps to engage in independent learning. On the other hand, it might contribute to students seeking ready answers rather than working with complicated academic material.

Academic Writing and Language Support

A third notable finding involves the use of generative AI tools by students for academic writing, language development, and idea development. Generative AI tools can be used by students to enhance grammar, structure ideas, develop outlines, find examples, and express their ideas more clearly. This finding is highly significant in the context of Pakistan as students there have varied abilities in the language of higher education, which is English.

The results are aligned with previous researches on the use of generative AI by students for writing and communication assistance. Chan and Hu (2023) reported that writing assistance and productivity were among the most important benefits of GenAI according to students, whereas many recent studies have demonstrated the growing use of AI by students during different stages of academic writing.

However, the findings highlight an important pedagogical distinction between using AI for assistance in writing and generating an academic assignment entirely with AI's help. While the use of AI to detect grammatical errors and make things clearer may help students become better writers, asking the machine to write the whole piece of academic work may not involve students in the intellectual process at all.

Efficiency and Change Learning Practices

Moreover, GenAI appears to be altering the way students complete their academic assignments by offering a quick method of gaining explanations, organizing knowledge, and accomplishing routine tasks. This could be perceived as one of the greatest benefits of GenAI in the eyes of many students.

Indeed, such a conclusion correlates with the literature on the topic, as productivity and convenience are considered to be some of the key factors influencing students' use of generative AI (Almassaad et al., 2024; Baig & Yadegaridehkordi, 2024). At the same time, there is no need to equate the increase in efficiency with better academic results since performing tasks faster does not mean that students have achieved higher understanding and developed their critical thinking.

Thus, the findings imply that the universities should separate the efficiency of learning from its quality. GenAI allows to perform certain academic tasks more quickly, yet professors should make sure that students still engage in reasoning, creative, problem-solving activities.

Trust, Accuracy and Critical Evaluation

A significant concern emerging from the findings is the reliability of AI-generated information. Although students recognize the convenience of GenAI, they may also encounter inaccurate or incomplete responses. This creates a need for students to verify AI-generated information using credible academic sources.

This finding is particularly important because the conversational and confident style of GenAI responses can make inaccurate information appear credible. Albadarin et al. (2024) similarly identified limitations and concerns surrounding the educational use of ChatGPT. UNESCO (2023) has also emphasized the importance of critical and responsible engagement with GenAI rather than assuming that AI-generated content is inherently reliable.

The findings therefore reinforce the importance of **AI literacy and information literacy**. Students need to understand that GenAI should not necessarily be treated as an authoritative academic source. Instead, students should be encouraged to question outputs, verify claims, consult scholarly sources, and take responsibility for the accuracy of their final academic work.

Academic Integrity and Responsible Use

Academic integrity is yet another problem found in the study. It seems that students can recognize when the use of AI is proper and when it might be regarded as academic misconduct. For instance, using AI for brainstorming, improving the grammar, and conceptual explanation might be different from presenting an entire work generated by AI.

This conclusion supports the idea expressed in Johnston et al. (2024), according to which students made differences between various types of AI usage and not all kinds of assistance provided by the technology were considered equally harmful. Cotton et al. (2023) stressed that the emergence of ChatGPT posed novel problems for academic integrity in universities.

Thus, it seems that the key issue is not the use of GenAI itself, but whether it is used properly. Universities must provide specific rules regarding acceptable and unacceptable ways to use the technology, otherwise, students will be left to themselves in figuring out these issues.

Institutional Guidance and AI Literacy

Additionally, these results suggest the significance of the role of institutions in providing help to students on using AI responsibly, evaluating the information generated by AI technologies, ensuring their privacy, recognizing the help of AI in their work, and preserving academic integrity.

In doing so, they confirm UNESCO's (2023) call for a human-centred and ethical approach to GenAI in education. Universities can adopt the human-centred strategy and provide their students with guidance on using GenAI technologies properly rather than banning them.

These findings can influence the practices of university educators and administration, who should review their assessment policy and introduce training for students and teachers on the topic of proper GenAI use in learning and assessing.

Implication for Pakistani Higher Education

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Conclusion

The current research studied how students at Pakistani universities perceived and used Generative Artificial Intelligence for learning purposes. According to the results, GenAI is becoming an integral part of students' academic life and is considered by the latter to be a handy tool to facilitate their comprehension of subjects, academic writing, idea generation, information processing, and regular academic activities.

However, despite its numerous benefits, students' experience suggests that Generative Artificial Intelligence is not an easy solution to learning and academic challenges. As far as problems with information inaccuracy, dependence on the technology, academic integrity issues, and students' uncertainty about correct ways to use GenAI are concerned, one can say that it is important for students to develop a critical and responsible attitude towards AI-assisted learning. In other words, the educational benefits of GenAI depend greatly on how the students make use of it and whether they remain active learners throughout the whole process.

Thus, one can conclude that it is important to treat GenAI not as a way of eliminating students' participation in their own learning but as a means of supporting it. It means that GenAI can be helpful if it is applied to clarifying concepts, idea generation, receiving feedback from the system, or writing assignments. Otherwise, its application to substituting the activity of students may be counterproductive.

Another important implication of the research is that there is a need to increase AI literacy among Pakistani students who are likely to become future users of the technology for learning purposes. Thus, they should learn how to formulate effective prompts, evaluate information generated by the technology, verify sources, identify possible limitations, adhere to ethical standards, and use AI transparently.

Speaking about institutions of higher education, the findings imply that universities need to go beyond the opposition between prohibition and approval of AI usage. Instead, they need to develop AI usage policies, incorporate AI literacy into academic programs, train teachers and students, and revise the existing practices of assessment if needed.

Ultimately, the study has contributed to the new emerging literature in that it adopts a student-centred approach towards the use of GenAI technology in the higher education institutions in Pakistan. In addition to exploring adoption rates or usefulness, the study has revealed important aspects regarding student experiences with this kind of technology. In terms of further research, it would be beneficial to conduct comparative research among universities, disciplines, different socioeconomic categories, and different provinces of Pakistan. Furthermore, longitudinal research would be useful in order to determine the changes in students’ attitudes and uses of this technology as universities become more experienced.

Ultimately, the increasing presence of GenAI technology in higher education should be viewed not only from the technological viewpoint but also in terms of its implications for students'

experience with gaining knowledge, writing and learning as a whole. The challenge for Pakistani higher education, then, lies in the fact that technological progress must positively influence the process of forming competent learners.

Conflict of Interest

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