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Generative AI in Secondary Educators' Perspectives on Academic Learning and Integrity

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Abstract

Generative Artificial Intelligence (Gen AI), as represented by products like ChatGPT, has matured and assumed the role of already being a powerful agent in a range of industries including the academic sphere of the secondary learning institutions. LLMs can be used in numerous applications best exemplified by the widely used ChatGPT, an application of Gen AI that employs LLMs to produce natural language outputs that are as good as human writing, for tasks as diverse as answering challenging questions and writing code. The use of these tools hereby raised questions of how they really shape the process of academic teaching and learning more under focus. However, quite a few research concentrating on the influence of such systems on students' performance and the usage of such systems. This study therefore examines the impact of GPT tools on secondary education, aiming to address the following research questions: What impact does the integration of GPTs have on the delivery and receipt of education in secondary school? Some of questions are regarding school educators' perceptions of the impacts of GPTs on educational practices. This qualitative study makes use of semi structured interviews with educators from the Islamabad FG school where GPT has been implemented. Transcriptions were made from the

gathered data and OpenAI's Whisper was used to detect relevant patterns and trends at the same time. Data analysis was done through distinguishing the themes, and then categorizing the data into the relevant codes. The research highlights the profound dual nature of GPT when the technology has many opportunities to advance the educational process and individualization of learning, it also has multiple problematic aspects such as academic dishonesty, overdependence on the AI, and changes to valuable soft skills. These results contribute to the literature on digital learning pointing to the instructional and constructive use of technologies like GenAI. However, the advances made and the integration of GPT in our daily lives are inevitable, and returning to prior state is out of the question. The research uses a qualitative approach and includes semi structured interviews with educators from Islamabad FG school, who have implemented GPT in their programs. The collected data were transcribed and analyzed using OpenAI's Whisper to But it is vital to embrace future-oriented opportunities of AI while experiencing its negative effects for the future and development in this age of AI. The study underscores the need to establish concrete guidelines that will enable the achievement of the benefits addressed under GPT while at the same time avoiding distortion of the educational processes. Therefore, this study offers important findings to educators, policymakers and scholars about the ethical and optimal integration of AI in secondary learning institutions.

Keywords: Generative AI, ChatGPT, Secondary education, Academic integrity, Digital learning, Secondary learning institutions.

Introduction

Knowledge is a key aspect of human life, now in rapid development and easily noticeable in different aspects of higher education (Alam 2021, Tlili et al. 2023), including such a significant aspect as artificial intelligence. The availability of GAI systems that are based on LLMs enables new ways of interacting with educational content based on synthetic responses that look like the text produced by a human for creating new approaches to learning (Kasneci et al., 2023; Thorne, 2024). GPTs like ChatGPT are some of the revolutionary tools that have revolutionized education systems (Hrastinski, 2020 & Sullivan, Kelly & McLaughlan, 2023). These technologies offer a vast and meaningful source of data, as well as enhance educational activity, if applied properly (Dempere et al., 2023). These technologies that foster teaching and learning as well as interaction in creative ways (Kasneci et al., 2023; Tlili et al., 2023); simultaneously, it is these technologies that amplify the risk, such as cheating, and potential reliance on AI (Sullivan, Kelly, & McLaughlan, 2023).

It is crucial for schools and universities to consider new technologies that alter established long-standing learning approaches, though they understandably comprise some levels of concern; if schools do not embrace these opportunities, these technologies will become disruptive (Lucas, 2016).Incorporating newly advanced Natural Language Processing (NLP), the enhanced development of innovative LLMs and GAI systems, including GPTs, has impacted Knowledge Management (KM) and learning processes Exemplary digital tools discussed include ChatGPT, Midjourney, Copilot, and Gemini, which transformed the learning and teaching pedagogy from the normative path (Kurtz et al., 2024; Bahrini et al., 2023). However, as has been shown in this paper, there are numerous issues that accompany the utilization of GAI tools, including, although not limited to, the following (Trust, Whalen & Mouza, 2023). The probable of spreading wrong data and even visions is why the application of such AI tools has

to be analytical and skillful. The advantage attributed to LLMs is that it is rather sophisticated, and still, it has some problems in the reckoning of input uncertainty and the exhaustive problem-solving that results in inaccuracies, according to Thorne (2024). Furthermore, there is a problem of authenticity of the information generated by the AI mechanism and thus introduces the issue of accuracy and reliability of the data provided by the application (Bahrini et al., 2023; Dempere et al., 2023).

Literature Review

Generative AI: Definition and Capabilities

Generative AI in the context of this work is understood as algorithms and systems that can create text, image, etc. from the given data. Algorithms such as OpenAI's GPT (Generative Pre-trained Transformer), have displayed their capabilities for producing essays and generating problem solutions, ideas among other things. The following styles can be helpful in the educational setting when it comes to planning and delivering teaching learning process, creating assessments, and even giving boys immediate feedback (Huang et al., 2023). However, recent advances on how generative AI can generate a human-like response have caused controversy of its originality and application.

The Role of Generative AI in Secondary Education

Sophisticated generative AI tools are gradually finding their way into the secondary learning institution to improve the teaching and learning processes. Johnson and Becker's research shows that such tools can enhance students' motivation since the latter means learning can be student oriented as well as help educators in creating more inclusive teaching models (Johnson & Becker, 2021). For instance, using smart applications, students will be capable to receive feedback regarding the assignments they have completed and hence extend their understanding on the various fundamental concepts at their own time.

On the same account, critics have raised an issue on the rely on AI for academic matters as this might reduce the learners' thinking abilities. Teachers have cited cases where learners produced material generated by AI tools without proper understanding of the content, which create a problem for the task authenticity (Smith et al., 2022).

Academic Integrity in the Age of Generative AI

Education is based on principles of respect of academic integrity. The latest development of generative AI has brought forth a new issue with the regular concepts of plagiarism and original works. There is still some controversy as to how effective tools such as Turnitin are against AI generated content, though the latter has been adapted for discovery by the former (Stevens & Richards, 2023). Scholars discovered that students engage generative AI frequently in ways that show insubstantial attempts at fulfilling academic expectations, thus a major concern in the ethical application of AI.

To resolve these problems, educators have demanded for policies on the type of work that is suitable to be handled by AI to be established. A similar thought process is used by numerous others who state that promotion of ethical AI usage culture is the way to go rather than a punitive action. Educating students in the use of AI and critical assessment of results as a form of risk management is considered ahead of time (Anderson et al., 2021).

Pedagogical Implications

The possibility of implementing the generative AI in learning context opens up prospects to redefine approaches applied in teaching domain. In terms of practical use AI can help educators to analyze what topics need to be revisited, create compelling assignments, and track students' progress in real-time (Garcia et al., 2022). Nevertheless, for these technologies to prove useful in education, educators have to be well equipped to use them.

Teacher professional development to support generative AI literacy is crucial, particularly in AI application professional learning. These programs can help to correct several misconceptions regarding the operation of AI and can explain issues of ethics, as well as practical usage of the technology so that educators can safely implement such programs in their classrooms.

Challenges and Ethical Considerations

Unfortunately, the optimistic outcomes of generative AI come with critical problems since its application has moral issues. Interesting questions like data privacy, mathematic base and the problem of misuse have to be taken with care. In addition, AI development is still very dynamic and it takes educational institutions time to formulate appropriate regulations (Kim & Lee, 2023).Secondary teachers in particular face the question of how to weigh the benefits of generative AI against its potential for misuse. To realise a world where AI is used for the betterment of mankind, stakeholders need to set up policies that make such an occurrence possible.

Objectives:

1. To investigate the effect of positive and negative facilities implemented in features of Generative AI in secondary academic learning according to the concerned secondary educators' insights.
2. In this study, the researchers' looked at the concerns and measures of the teachers towards academic integrity considering Generative AI.
3. It will be easier to come up with measures to adopt AI integration if barriers are early detected and avoided.

Research Questions:

1. What do secondary educators believe about how Generative AI should be adopted to support learning?
2. In what way do secondary teachers perceive the effects of Generative AI on academic integrity at the learning institutions?
3. Considering the above findings what measures should be taken by the teachers so that AI tools can be used responsibly in secondary education?

Statement of the Problem

The emergence of generative AI technologies has contributed imperative improvements to educative practices especially in secondary education. However, these tools also pose important question that necessarily relate to the academic learning and credibility.

Secondary teachers need to embrace the AI technology to improve learning outcomes, including learning experiences but struggle to manage the potential vices of AI that compromises acceptable academic practices related to the vice. Few studies were done to establish educators' impression on the impact of generative AI on performance and demeanor of learners. This gap makes it imperative to know how tutors perceive generative AI to be capable either to enrich or compromise learning and integrity to avoid compromising education practice to novelties that have not proven their worth.

Significance of the Study

This study holds significance for several key stakeholders in the education ecosystem:

1. Educators: Consequently, knowing educators' view in this investigation can help teachers learn about the appropriate way to integrate generative AI tools for increasing learning performance without compromising academic credibility.
2. Students: Studying the relations between AI and integrity in students' work will contribute to the development of requirements that define the appropriate and efficient use of AI technologies in learning environments.
3. Policy Makers: The insights will help policy makers when designing policies and frameworks that will enhance the adoption AI technologies in secondary education without compromising on the ethical aspects.
4. Educational Researchers: This work will aid in the understanding of the place of technology in education to create the groundwork for subsequent qualitative studies on the novel AI technologies.

Methodology:

Both quantitative and qualitative research was used in this study. In this study quantitative information was obtained by structured questionnaires and qualitative information was obtained through interviews with secondary teachers. This approach is helpful when it comes to getting both statistical and qualitative view of educators' perceptions.

Sample:

The sample comprised a hundred participants, all of whom were secondary school teachers, teaching in both urban and rural schools, with ten years average teaching experience. Domains that were covered were in STEM, language arts and social sciences.

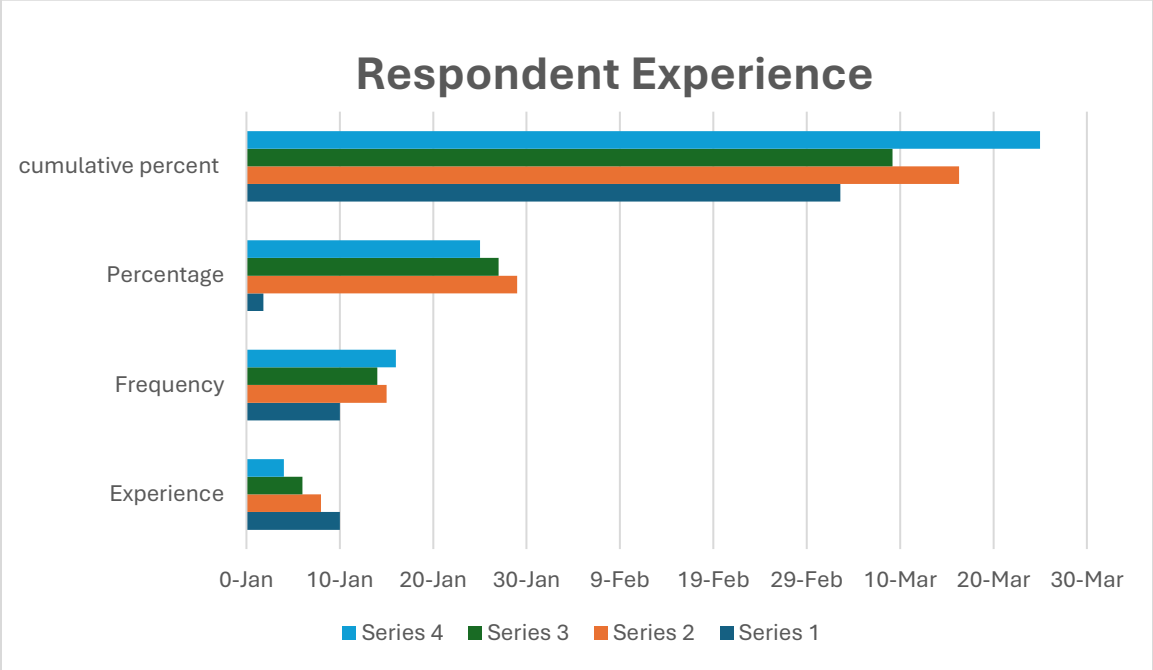
Instruments:

1. **Survey Questionnaire:** This study involved administering a structured questionnaire to the participants where the topic of discussion included Demographic Data, AI experience, AI benefits and risks perceptions, Policy recommendation.
2. **Interview Guide**: Semi structured interviews therefore aimed at presenting the socialite constructs of teachers concerning AIS place in learning and integrity.

Respondent Experience

Experience	Frequency	Percent	Cumulative Percent
10 & above	10	1.81	63.6
7-9	16	29.09	76.3
4-6	15	27.27	69.2
1-3	14	25	85.0
Total	55	100.0	

Table shows that there is between 1-3 years of respondent 14 (25 %), 4-6 years is 15(27 %), 7-9 years is 16 (29 %) and 10 & above years is 10 (1.81 %).

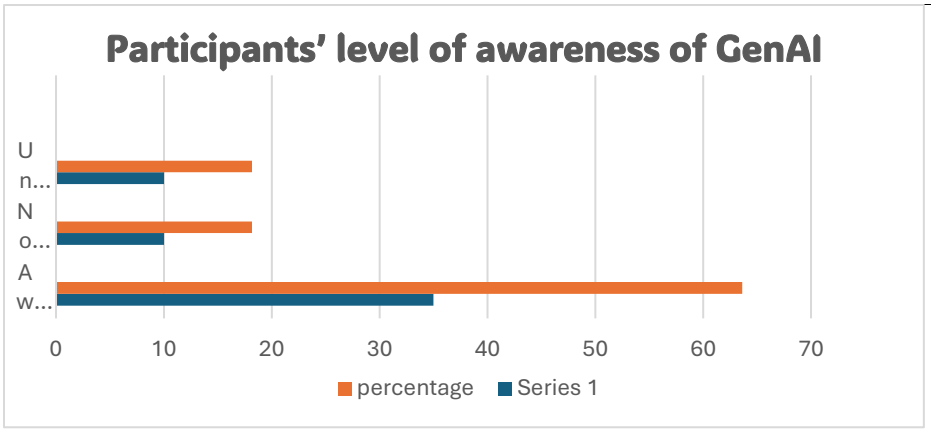


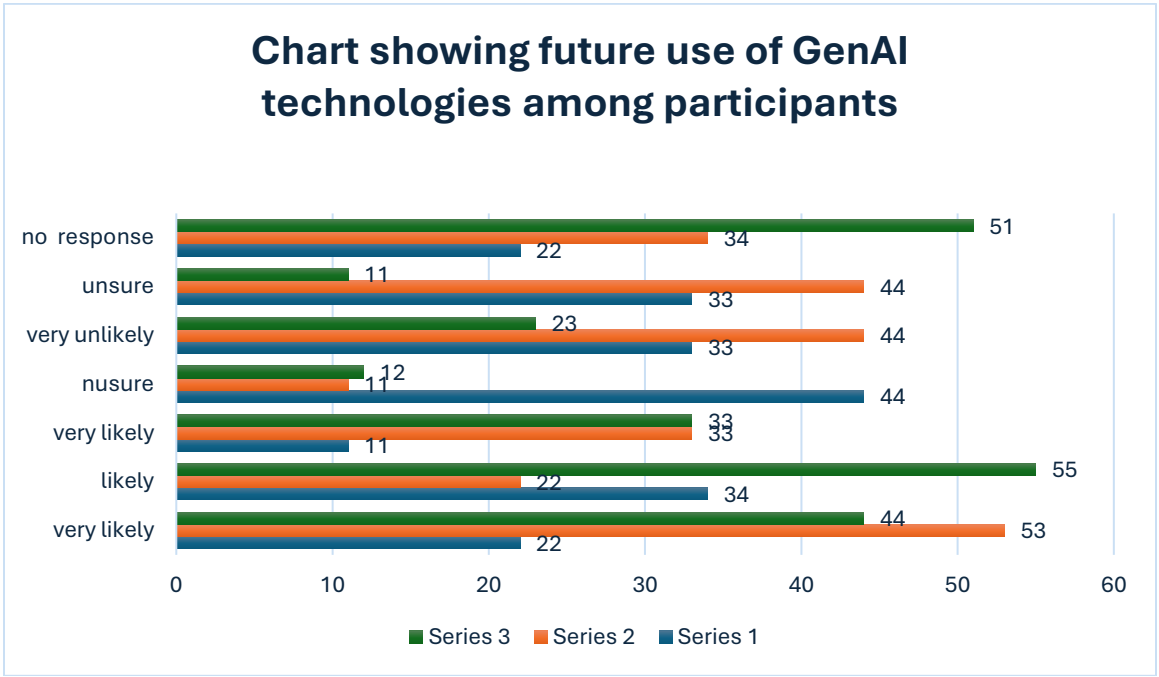
Analysis:
Data were analyzed using statistical methods for quantitative responses and thematic coding for qualitative insights. The analysis revealed significant correlations between teachers' experience levels and their perceptions of AI's risks and benefits.

Level of awareness and familiarity with GenAI tools
We investigated the extent of awareness and familiarity with GenAI tools among the study participants. A significant majority (63.63%) acknowledged their awareness, while 18.18% reported being unaware of these tools, and 18.18% expressed

Participants' level of awareness of GenAI

	Frequency	Percent
Aware	35	63.63
Not aware	10	18.18
Unsure	10	18.18





Results:

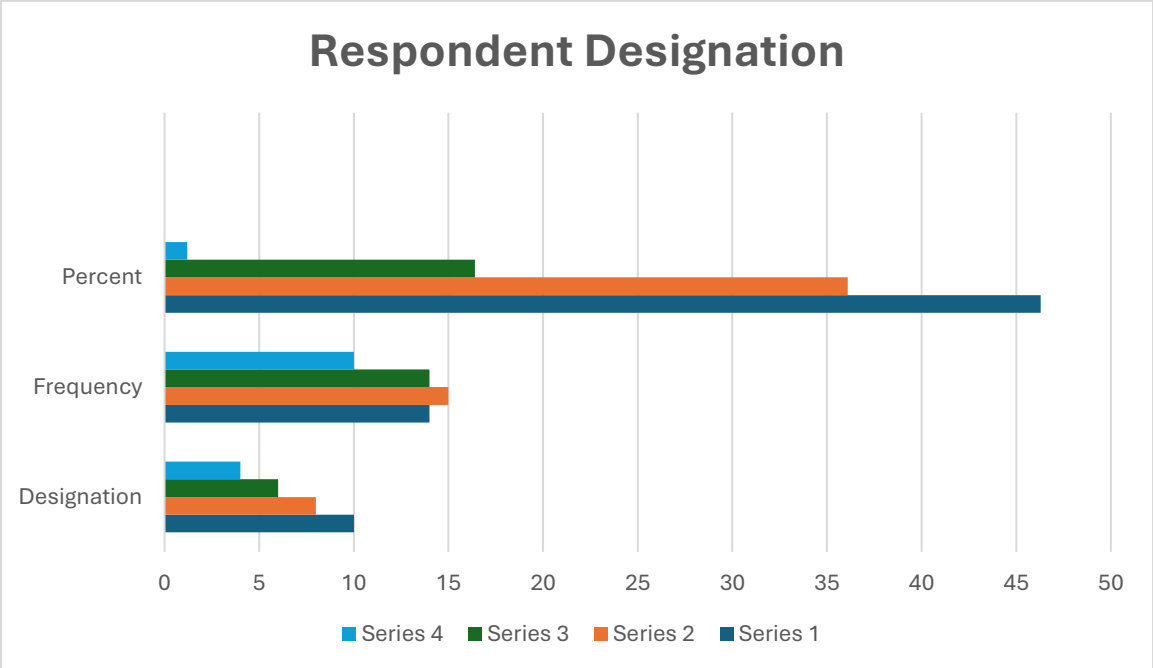
Semi-structured interview results show that 75% of the teachers have positive feelings about how Generative AI can improve personalised learning and 60% of them have negative

perceptions of Generative AI concerning its misuse in tests and examinations. The findings marked as important or common subject areas include the absence of clear advice concerning the application of AI and the necessity of ethical education for students.

Respondent Designation

Designation	Frequency	Percent	Cumulative Percent
Lecturer	14	46.3	26.3
Assistant Professor	15	36.1	52.4
Associate Professor	14	16.4	78.8
Professor	10	1.2	60.0
Total	55	100.0	

Table shows that lecturers are 240 (46.3 %), Assistant professor is 187 (82.4 %), Associate professor is 85 (98.8 %) and Professor is 6 (1.2 %). Low respondent belong to Professor is 6 (1.2 %) whereas the high respondent are Lecturer 240 (46.3 %).



Perceived potential of GenAI in HE

S/N	Items	Mean	Std. Dev.
1	It is quite easy for generative AI devices to answer questions.	4.302	0.891
2	They give teaching one-to-one and fast lesson help	3.082	0.961
3	They give an entry point and thinking aid	4.837	1.080
4	They enhance timely identification of relevant literature and summarized literature search	3.783	1.201
5	they encourage creativity and important thinking abilities	4.327	1.373
6	They assist in problem solving, which is past the scope of the instructor	3.255	1.207

Perceived concerns of GenAI in HE

S/N	Items	Mean	Std. Dev.
1	In fact, with generative tools, it is possible to generate output that is precisely incorrect.	3.181	1.021
2	They can create output that is unconventional or even obscene.	3.984	1.127
3	In their output, they can have biases as well as unfair. He Said	4.592	1.234
4	They also depend on online figures, something that can be quite constraining in some cases.	3.062	1.018
5	They lack emotional IQ and quotient and this results in output that remain as such or are even inapt.	3.807	1.154
6	They are too strong so they may collect my personal information.	2.149	1.150

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