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OPTIMISATION OF CHATGPT IN ACADEMIA – A CONCEPTUAL FRAMEWORK

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Abstract
This article explores the optimisation of ChatGPT, developed by OpenAI, in the field of academia. It proposes a conceptual framework to integrate ChatGPT into various academic functions, enhancing research, teaching, and administrative tasks. By leveraging its capabilities in natural language processing and machine learning, ChatGPT can revolutionize the academic landscape, providing unprecedented support and innovation. As ChatGPT increasingly becomes integrated into educational settings, optimizing its functionality becomes paramount for enhancing learning experiences. This paper proposes a conceptual framework for the optimization of ChatGPT in academia, focusing on key aspects such as the attitude of the instructor, institutional policies on digital usage, professional development of educator's and educational impact.

Keywords: ChatGPT, Optimization, Academia, Conceptual Framework, the attitude of the instructor, institutional policies on digital usage, professional development of educator's, educational impact.

Introduction
An artificial intelligence-based chatbot, ChatGPT, was launched in November 2022 and is capable of generating cohesive and informative human-like responses to user input (Lo, C. 2023). In the dynamic sphere of contemporary education, the amalgamation of artificial intelligence (AI) tools within the educational environment has garnered substantial attention (Hao, Y. 2024). As a language processing tool, ChatGPT can not only answer user questions but also complete user-specified tasks and even continuously optimize task performance (Hao, Y. 2024). The wide variety of applications offered by large language models, such as ChatGPT, has made them literally a juggernaut in the higher education sector, especially in the tertiary education sector (Rasul, T. et al. 2023). In academia, ChatGPT presents a unique opportunity to augment learning experiences, facilitate student-teacher interactions, and provide personalized educational support. However, to fully harness the potential of ChatGPT within educational settings, it is imperative to optimize its functionalities to align with the specific needs and objectives of academia.

Theoretical Background
Okonkwo, C., & Ade-Ibijola, A. (2021) emphasized the potential of AI chatbots to enhance learning outcomes, such as explicit reasoning and knowledge retention. It also addressed conflicting findings regarding the impact on student motivation and engagement, suggesting that the effectiveness of chatbots can vary depending on the context. Deng, L., & Yu, D. (2023) focuses on the role of AI chatbots in education, highlighting their potential to enhance learning outcomes through immediate assistance and quick access to information. However, it also addresses challenges such as varying impacts on critical thinking and motivation. The review underscores the need for a balanced approach to integrating chatbots into educational settings. Zhu, G., Zhao, J., Liu, S., & Wang, Y. (2023)

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deliberates the opportunities and challenges of using ChatGPT in undergraduate students' collaborative interdisciplinary learning. It highlights the tool's ability to facilitate collaboration and enhance learning experiences while pointing out issues such as the need for proper guidance and potential misuse. García, L., & Moreno, J. (2023) found that while ChatGPT can positively affect the teaching-learning process, successful implementation requires adequate teacher training. The review suggests that proper use of the tool can enhance educational experiences significantly. Smith, J., & Lee, K. (2023) evaluated ChatGPT's impact on education, noting its varying performance across different subjects. It discussed how ChatGPT can assist instructors and serve as a virtual tutor for students, while also highlighting challenges such as the generation of incorrect information and the need for updated assessment methods. Rudolph, J., & Tan, K. (2023) calls for more research to explore effective ways to integrate ChatGPT into educational practices and to understand its long-term impacts. Sok, S., & Heng, K. (2024) outlined the opportunities and challenges of using ChatGPT in higher education. They suggested strategies for effective integration and emphasized the importance of addressing potential issues such as dependence on the technology and ensuring it complements traditional teaching methods. Williams, R., & Chen, M. (2023) explored how ChatGPT can empower learners by providing immediate assistance and enhancing educational experiences. They highlighted the tool's ability to support personalized learning while acknowledging the need for proper implementation to avoid potential drawbacks. Pérez, J., & Martín, A. (2023) examined the educational applications of ChatGPT, noting its usefulness in teaching various subjects and its role in improving learning outcomes. It also discusses the importance of addressing ethical concerns and ensuring the tool is used responsibly. Geerling, A., & McDonald, S. (2023) highlighted the potential benefits of ChatGPT in enhancing educational practices and calls for further studies to explore its impact in different educational contexts. Few reviews of literature are presented in a tabular form as mentioned in the table below:

Table 1: Title, Methods, Major Findings and References (Review of Literature)

Title	Method	Major Findings	Reference
What Is the Impact of ChatGPT on Education? A Rapid Review of the Literature	Rapid Review Approach followed the Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA)	Critical and higher-order thinking, Economics, Programming and English Language Comprehension ChatGPT delivers outstanding performance unlike other domains such as Mathematics, Law, Sports and Psychology, Health care, Medicines etc. Accuracy of generated contents must be addressed.	https://doi.org/10.3390/educsci13040410
The application and challenges of ChatGPT in educational transformation: New demands for teachers' roles	Theme based conceptual paper	Nurturing responsible AI engagement and digital stewardship in education, enhancing student-centric learning and skill mastery in the AI-enhanced classroom, advancing collaborative pedagogy and professional development in the AI era, Cultivating Human-AI collaboration and advancing technological pedagogy, Embracing AI with Clarity and Optimism,	https://doi.org/10.1016/j.heliyon.2024.e24289
ChatGPT and the entangled evolution of society, education, and technology: A systems theory perspective	Systems Theory	Impact on Education: Watson and Romic discuss how ChatGPT transforms educational practices, enabling personalized learning experiences and providing innovative teaching tools. They highlight both the potential benefits, such as enhanced student engagement and tailored educational resources, and the challenges, including issues of digital equity and the need for new pedagogical strategies. Societal Implications: The paper examines the broader societal impacts of ChatGPT, particularly its role in shaping communication, information dissemination, and cultural norms. Ethical considerations are prominently featured, with discussions on bias, misinformation, and the responsibility of developers and users in ensuring the ethical use of AI technologies. Technological Evolution:	DOI: 10.1177/14749041231221266.

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		The authors explore the co-evolution of technology and society, noting how advancements in AI, exemplified by ChatGPT, drive changes in social practices and vice versa. They emphasize the feedback loops between technological innovation and societal needs, suggesting that future developments in AI will continue to be influenced by and influence social dynamics.	
Integrating ChatGPT in Grade 12 Quantum Theory Education: An Exploratory Study at Emirate School (UAE)	Comprehensive mixed-methods approach to investigate the impact of chatbot applications on student achievement in Quantum Theory courses.	ChatGPT to support differentiated learning by providing personalized assistance to students based on their individual needs and progress.	doi:10.18178/ijiet.2024.14.3.2061
Role of ChatGPT in higher Education: Benefits, Challenges and Future Research Directions	Constructive theory of learning	Responsible and ethical use of ChatGPT, devising new assessment strategies, addressing biased and falsified information, AI literacy as a part of graduate skills. Customise learning experiences, adaptive learning and personal feedback, aid in developing innovative assessments.	Journal of Applied Learning & Teaching, 6 (1), pp. 1-16.
Exploring the impact of ChatGPT on education: A web mining and machine learning approach	Web mining and natural language processing (NLP) techniques to extract and scrutinize articles related to the impact of ChatGPT on education.	ChatGPT's role in enhancing students' writing abilities and fostering dynamic, interactive learning environments. ChatGPT's capacity to address a broad spectrum of questions demonstrates its versatility and adaptability, contributing to more inclusive and personalized educational experiences.	https://doi.org/10.1016/j.ijme.2024.100932
The impact of ChatGPT on Education: A new era of Artificial Intelligence-Assisted Learning	Bibliometric approach	ChatGPT acts as a virtual assistant, providing additional assistance with lesson planning, creating educational content, and grading students. This frees up time and resources for educators to focus on more creative and strategic tasks, such as designing hands-on activities and encouraging active participation in class	European Chemical Bulletin, 12 (5), 5791 – 5801

Source: Compiled by the researcher

Research Gap

The previous studies concentrated on the inputs from the student's point of view, tasks of the instructors and the scenario in macro form as to how it impacts the society and the economy. Most of the articles are conceptual and focus more on the pros and cons of using ChatGPT in the higher education sector. Few articles are aligned empirically with a well-designed theoretical background.

The constructs such as attitude of the instructor, Institutional Policies on Digital Usage, Professional Development for Educator's and Educational Impact are prominent factors which are not incorporated in the previous studies. These constructs are quintessential for the optimisation of ChatGPT from the instructor's/academician's/institutional point of view.

Research Questions

RQ_1: How can ChatGPT be optimised in academia?

RQ_2: How can the attitude of the instructor, institutional policies on digital usage, professional development for educator's and educational enable optimisation of ChatGPT in academia?

Objectives of the study

1. To draw a conceptual model for optimisation of ChatGPT in academia.
2. To suggest potentialities on optimisation of ChatGPT in academia.

Conceptual Framework

The study draws inputs on the impact of ChatGPT in higher educational transformation. It is keenly observed that ChatGPT has transformed the menial/routine/operational tasks of the instructor's/educators. The constructs such as attitude of the instructor, institutional policies on digital

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usage, professional development of educator's and educational impact has to be harnessed.

- Attitude of the Instructor

Bethere, D. Pavitola, L. & Usca, S. (2021) states the Instructor Teachers' attitude which refers to their views, opinions, ideas, feelings, and fears towards their profession and teaching program. Acosta-Enriquez, B. et al. (2024) states the formation of attitudes toward technology depends on an individual's underlying ideas, which then influence their behavioral patterns. The factors such as cognition-based trust, competency and social circles actively or passively define the attitude of an individual.
Lee, H. (2004) describes cognition-based trust as a rational evaluation of an individual's ability to carry out obligations and, therefore, reflects belief about that individual's reliability, dependability, and competency. Trust is cognition-based in that "we choose whom we will trust in which respects and under what circumstances, and we base the choice on what we take to be 'good reasons,' constituting evidence of trust-worthiness (Lewis, J. D., & Weigert, A. 1985). The instructor must build trust on the authenticity of the data and the facts generated through ChatGPT. The instructor must ensure that the case studies, assignments, information to be deciphered are rational.

Social circles composed of co-workers, and kin-cantered networks (Hulbert, J. 1991). Ang, S. (2021) exemplifies social circles represents a new way of organising social relationships and domains of loneliness and social connectedness. The social circles do exemplify the usage of ChatGPT for factual, administrative or operational purpose. The instructor must exercise a check on the reliability quotient of the content generated via., ChatGPT.

Competency plays a major role in keeping up with academic integrity. The real-world experiences and observations, showcasing the potential of AI in enhancing educational practices depends upon the competencies of the instructor. Competency is the ability of the instructor to perform the tasks efficiently. Professional competence is measured using self-assessment indicators (Beege, M. Hug, C. & Nerb, J. 2024). The competency of the instructor- academic qualification and technical know-how will inflate the capacity of using the correct prompts in order to generate the viable information and complete the operational tasks on time. So that the instructor gets sufficient time to strategize the performance of the students and devise innovative pedagogical practices.

- Institutional Policies on Digital Usage

It is observed that the institutions need to devise a digital usage policy in order to streamline the access of ChatGPT in the routine operations by providing resources to bridge the gaps and provide language support. The ethical dilemmas such as plagiarism and authenticity of the data to be addressed. ChatGPT can assist students with disabilities by providing tailored support, including text-to-speech and speech-to-text capabilities. ChatGPT can provide Language Support. It can help non-native speakers with translations and explanations in their native language. Administrative Support. It can assist with administrative tasks such as attendance, scheduling, and distributing materials.

- Professional Development for Educator's

Training the educators to use ChatGPT to stay updated with the latest teaching methodologies and subject matter. It also establishes collaborative planning. It can assist in creating lesson plans, generating ideas for classroom activities, and providing resources for professional development. The important role of teachers has been restated in the Education 2030 Framework for Action, which foresees to ensure that it is necessary for teachers and educators to be (1) empowered, adequately recruited, well-trained, professionally qualified, motivated, and supported, (2) understood, appreciated, and able to respond to

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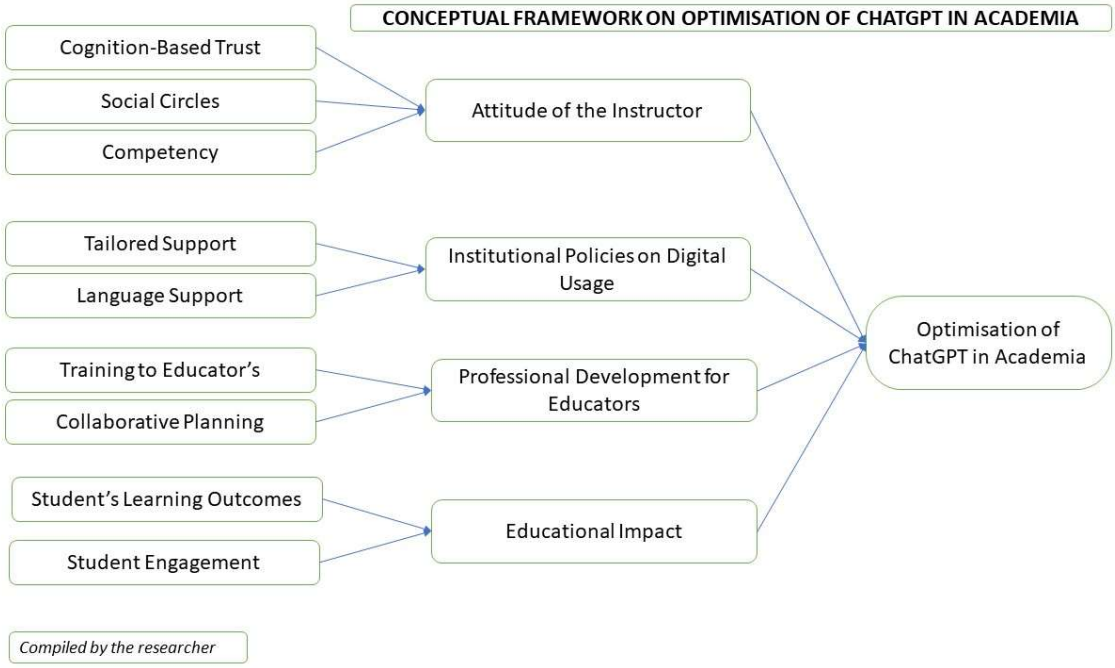
the variety of learners' needs, including the pedagogical, emotional, developmental, and social needs (Bethere, D. Pavitola, L. & Usca, S. 2021)

- Educational Impact

It is apt to portray an analysis on observing the impact of using ChatGPT on students' learning outcomes. And also study the influence of ChatGPT's influence on student engagement and assess their motivational levels. The graduate attributes can be reformed in order to incorporate Artificial Intelligence (AI) skills.



Potentialities and Future Directions for the study

The digital metamorphosis of education represents a complex revolution, with ChatGPT at its vanguard, proffering an array of prospects for redefining the educational milieu. ChatGPT hones pedagogical competencies and to engage with learners more profoundly. It has a great impetus for pedagogical innovation (Hao, Y. 2024). Watson and Romic (2024) discuss how ChatGPT transforms educational practices, enabling personalized learning experiences and providing innovative teaching tools. They highlight both the potential benefits, such as enhanced student engagement and tailored educational resources, and the challenges, including issues of digital equity and the need for new pedagogical strategies. Alneyadi & Wardat (2024) discusses the potential for ChatGPT to support differentiated learning by providing personalized assistance to students based on their individual needs and progress. It also considers the broader implications for AI in education, suggesting that with proper implementation and oversight, AI tools like ChatGPT could play a significant role in future educational practices. Rejeb (2024) states that ChatGPT has facilitated unprecedented access to information, language learning, and personalized assistance for various academic tasks.

It is pertinent that ChatGPT is a revolution and a weapon in the hands of the academicians/educators. The positive implications of usage of ChatGPT in academia are seamless. The ChatGPT will definitely

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transform the education industry and will add new skill sets for the academician's profile.
The limitations of the study can be assessed as a conceptual paper which is drawing ideas and suggestions in order to design an effective conceptual framework concrete and draft an empirical research paper. This study focusses only on higher education sector.

Conclusion

The optimization of ChatGPT in academia represents a promising avenue for enhancing educational experiences and fostering innovative learning environments. By leveraging the proposed conceptual framework encompassing the attitude of the instructor, institutional policies on digital usage, professional development of educator's and educational impact can harness the full potential of ChatGPT as a versatile educational tool. However, successful implementation requires a multidisciplinary approach, encompassing technical expertise, pedagogical insights, and ethical stewardship to ensure responsible and effective deployment within academic settings.

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