The Impact and Integration of ChatGPT at Universities: A Study on Master's Students and Teachers

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This thesis investigates the impact and integration of ChatGPT in universities as part of the AI DRIVER! project at Haaga-Helia University of Applied Sciences. It focuses on Master's students and educators, examining how ChatGPT affects student learning, educator perspectives, and academic workflows. Key questions include educator perceptions, ethical considerations, and the influence of ChatGPT on student-teacher interactions.

The research aims to answer these questions; How to incorporate ChatGPT in education by the educators? How to ensure the ethicalness of students work when using ChatGPT? What is the impact of receiving this new tool, which is here to stay? Methodologically, the study employs a mixed-methods approach, comprising surveys for Master's students and interviews with educators, to capture diverse viewpoints and experiences.

Findings reveal that students view ChatGPT as a productivity-enhancing tool, enabling higher-order thinking, but raise concerns about over-reliance and originality, highlighting the need for responsible usage guidelines. Educators recognize its value for routine tasks yet emphasize adapting assessments to reflect AI's role. Ethical considerations, including balancing AI use with critical thinking skill development, remain essential.

The thesis advocates embracing ChatGPT to prepare students for AI-integrated workplaces while preserving academic integrity. Recommendations include creating policies for responsible use, investing in educator training, and providing resources to guide students ethically.

Keywords

ChatGPT integration, Master's studies, Academic integrity, AI in education, Generative AI

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1 Introduction

The integration of artificial intelligence (AI) tools is significantly altering how organizations function and transforming traditional approaches to education. Across various industries, AI has emerged as a catalyst for innovation, streamlining processes, and delivering value. In sectors like healthcare and retail, AI has been instrumental in automating routine tasks, enhancing decision-making, and improving service delivery. The education sector is also adopting these advancements. AI is being used to tailor learning experiences, reduce administrative workloads, and increase accessibility, enabling institutions to meet the evolving needs of students and educators.

Generative AI tools, such as Microsoft's Copilot and Google's Bard, illustrate the potential of these technologies. ChatGPT, developed by OpenAI, is a prominent example of this new generation of AI applications. With its ability to generate human-like text responses and provide instant support for communication and learning tasks, ChatGPT is contributing to significant changes in academic practices. This study focuses on the integration of ChatGPT in educational settings, examining its implications for teaching practices and student learning experiences within the academic environment of Haaga-Helia University of Applied Sciences.

ChatGPT, designed on the GPT-3.5 architecture, offers a versatile tool for automating communication and supporting academic processes. Its functionality ranges from assisting with assignments to streamlining administrative tasks, making it a critical consideration as organizations and institutions prioritize innovation and efficiency (Ray 2023). This research investigates how technologies like ChatGPT are being incorporated into educational settings, particularly within Master's programs where independent study plays a significant role.

The roles of Master's students and educators are evolving in response to these technological advancements. For students, ChatGPT provides an opportunity to simplify their studies, access personalized assistance, and focus on higher-order thinking. For educators, the tool presents new possibilities for automating routine tasks, designing more interactive teaching strategies, and addressing the challenges of academic integrity in an AI-enabled environment.

Through this study, we aim to understand how AI tools like ChatGPT can enhance the efficiency and quality of academic practices while addressing the challenges of ethical usage and pedagogical integration.

1.1 Background

Haaga-Helia University of Applied Sciences has long been focusing on educational innovation, preparing students for dynamic careers in business and services through a focus on applied research, entrepreneurship, and international cooperation. As AI technologies continue to reshape industries worldwide, universities must adapt to these changes to remain competitive and relevant in modern education. One of the latest advancements in AI, OpenAI's ChatGPT, has the potential to play a significant role in how universities, including Haaga-Helia, approach teaching and learning, especially in programs where independent study is emphasized, such as Master's degrees.

Master's students at universities of applied sciences like Haaga-Helia often navigate a complex academic environment that requires self-directed study, research, and advanced problem-solving. ChatGPT, with its ability to generate human-like responses and assist in a variety of academic tasks, presents opportunities for enhancing these educational processes. It can be used as a tool for automating tasks, supporting research, and improving communication, offering students an innovative way to manage their studies efficiently.

In addition to benefiting students, ChatGPT also helps educators by automating repetitive tasks such as grading and providing instant feedback on written assignments, allowing them to focus more on deeper pedagogical activities. It can assist in creating instructional materials, managing administrative tasks, and offering personalized learning insights, improving the efficiency and effectiveness of teaching.

The significance of this thesis lies in exploring how ChatGPT is being integrated into the learning environments of Master's students at Haaga-Helia and similar institutions. As a new and evolving technology, ChatGPT's impact on academic workflows, ethical considerations, and student-teacher interactions is not yet fully understood. This study aims to address these gaps by focusing on the specific experiences of students and educators within Haaga-Helia and similar institutions.

Additionally, as AI tools like ChatGPT become more common in workplaces across industries, this research will help ensure that students are prepared for future working life where these technologies play an important role. By equipping both students and educators with insights into the effective and ethical use of AI, Haaga-Helia can better fulfill its mission of preparing graduates for the demands of a professional world. The relevance of this research is directly tied to Haaga-Helia's mission to embrace innovation and prepare students for the demands of modern working life.

1.2 Organization

This thesis is commissioned by Haaga-Helia University of Applied Sciences and specifically conducted for the AI Driver! project. The project reflects the Haaga-Helia's commitment to exploring advancements in AI, furthering innovation, and supporting the practical application of AI within education and business sectors.

1.2.1 Haaga-Helia University of Applied Sciences

Haaga-Helia University of Applied Sciences is recognized for its emphasis on business-oriented education and innovation in Finland. Haaga-Helia University of Applied Sciences focuses on preparing professionals for the evolving fields of business and services, emphasizing cooperation, entrepreneurship, innovation, and international perspectives. The university has 11 000 students, 650 experts and five campuses (Haaga-Helia 2024a).

Operating across five campuses in Helsinki, Porvoo, and Vierumäki, each location contributes to the university's mission of opening doors to future careers and shaping the next generation of professionals (Haaga-Helia 2024d).

- Pasila Campus (Helsinki): Situated in Eastern Pasila, this is the largest campus, conveniently located next to Pasila railway station, Mall of Tripla, and Messukeskus, Finland's largest congress and exhibition center.
- Haaga Campus (Helsinki): Located in the green and pleasant Haaga district, Haaga Hospitality campus offers a vibrant learning environment.
- Malmi Campus (Helsinki): Located near Malmi railway station, this campus primarily serves adult students studying part-time in the business degree program.
- Porvoo Campus: Positioned near the idyllic Old Town of Porvoo, this campus provides a modern, international, and innovative learning environment.
- Vierumäki Campus (Lahti): Enveloped by nature near the city of Lahti, Vierumäki campus specializes in sports and well-being studies.

The narrative traces the historical evolution of Haaga-Helia University of Applied Sciences, underscoring the intrinsic link between education and societal needs. Established institutions like Privat Handelsläroverket i Helsingfors (1881) and Porvoon kauppaoppilaitos (1958) responded to the demand for specific expertise, while subsequent closures reflected shifts in required skills (Haaga-Helia 2024d).

Haaga-Helia holds on to a constant core — a commitment to anticipating and meeting future societal needs. The institution, proud of its past, embraces a forward-thinking stance, promising to open doors to working life, a pledge upheld since its earliest establishments. Haaga-Helia is guided by a commitment to courage and innovation, staying focused on shaping the future of working life (Haaga-Helia 2024c).

The university's profile revolves around four key elements: service business, sales, entrepreneurship, and higher education pedagogy. With a commitment to continuous learning, applied research, and extensive national and international cooperation, Haaga-Helia strives to be a bold reformer of working life, ensuring the qualitative employment of its students. The university’s mission is to open doors to future careers. This is shown in their five important values: courage, accountability, collaboration, transparency, and respect (Haaga-Helia 2024e).

1.2.2 AI DRIVER Project

The AI DRIVER! project, led by Haaga-Helia University of Applied Sciences, is an advanced initiative focused on digital business transformation. Aiming to enhance human-AI interaction in service business and open education, the project highlights artificial intelligence (AI) as a cornerstone technology for the future (Haaga-Helia 2024b).

The project’s main goals are twofold: first, to develop ethical frameworks and principles that guide human-AI interaction within professional education, addressing pertinent ethical challenges and creating actionable strategies; and second, to empower SMEs in the service sector to actively participate in AI-driven business development. By providing SMEs with tailored resources, training, and guidance, the project serves an ecosystem conducive to their growth and competitiveness in an AI-driven economy (Haaga-Helia 2024b).

Structured around four distinct work packages, the AI DRIVER! project addresses specific research, development, and dissemination objectives integral to AI integration. The first package builds a knowledge base on ethical human-AI interaction, focusing on frameworks for various professional contexts. The second aims to advance AI applications in open education and lifelong learning by leveraging AI to improve educational access and personalize learning experiences. The third supports SMEs in navigating AI adoption and implementation, providing structured support to meet sector-specific needs. Finally, the fourth package maximizes project impact by

disseminating best practices and resources to stakeholders across academia, industry, and policy (Haaga-Helia 2024b).

Through these efforts, the AI DRIVER! project strengthens Haaga-Helia's role in research, development, and innovation, reinforcing its status as a leading center of expertise in AI education and digital transformation for service-sector SMEs, aligning with the university's broader commitment to innovation, collaboration, transparency, and accountability.

1.3 Thesis Aim and Objectives

The primary aim of this thesis is to investigate the impact and integration of ChatGPT in education at universities, focusing on Master's students and educators. The research seeks to understand how this AI language model developed by OpenAI is being utilized by students and teachers within university settings and its effects on their educational practices and interactions.

The main research question is broken down into three examining questions:

Q1: How do educators in target organization perceive the integration of ChatGPT into educational environments?

Q2: What are the ethical considerations for students' work when employing ChatGPT in their academic activities?

Q3: What impacts does ChatGPT have on the efficiency of academic workflows and the interaction between students and teachers in university settings, based on the data collected from this thesis research?

Table 1 below illustrates the relationships between research questions, theoretical frameworks, and empirical findings.

Table 1 Overlay matrix of the research questions and data collection process.

Research Questions	Theoretical framework	Method	Results (chapter)
How do educators in target organization perceive the integration of ChatGPT into educational environments?	2.2	Qualitative interview	4.2
What are the ethical considerations for students' work when employing ChatGPT in their academic activities?	2.3	Quantitative survey	4.1
What impacts does ChatGPT have on the efficiency of academic workflows and the interaction be-tween students and teachers in university settings, based on the data collected from this thesis re-search?	2.2, 2.2.1, 2.3	Qualitative interview Quantitative survey Data interpretation	5

The research explores various aspects of ChatGPT utilization, beginning with an exploration of how Master's students at different universities and other institutions employ ChatGPT in their academic pursuits. It seeks to understand the frequency and types of tasks facilitated by ChatGPT among Master's students, while also assessing potential misuses of the AI.

Furthermore, the research aims to examine educators' perspectives on the integration of ChatGPT within learning environments. It seeks to uncover educators' strategies, concerns, and considerations regarding academic integrity in the presence of advanced language models.

Efficiency and streamlining processes are another important point of the research. The goal of the research is to evaluate the extent to which ChatGPT streamlines academic processes, automates tasks, and potentially influences the dynamics of student-teacher interactions. Additionally, the aim is to investigate whether the integration of ChatGPT leads to increased efficiency in academic workflows.

Finally, the research will provide recommendations for optimizing ChatGPT integration in education. It proposes strategies for maintaining a balanced and ethical approach in incorporating this new AI into education. These efforts align with the goals of the AI DRIVER! project and the strategic vision of the institution.

These objectives are designed to guide the systematic exploration of ChatGPT's educational applications and to provide a structured approach to answering the central research questions. The findings from this study are intended to offer actionable insights into the benefits and challenges of ChatGPT's ongoing integration into educational settings.

Addressing the objectives and research questions of this study, a mixed-methods approach was used, combining detailed surveys and interviews to collect data from Master's students at Haaga-Helia University of Applied Sciences and other universities, as well as educators exclusively from Haaga-Helia University of Applied Sciences. The survey questions for students are crafted to measure the frequency and context of ChatGPT usage in their academic efforts, thereby evaluating its impact on their study processes and their perceptions regarding the ethical considerations and academic integrity of AI use. Concurrently, the interview questions for educators aim to capture their familiarity, perspectives, and potential adjustments in teaching strategies due to the integration of ChatGPT. These questions also seek to understand the steps educators take to uphold academic integrity within the rising use of AI tools in education. The insights derived from these student surveys and educator interviews are crucial as they provide empirical data that supports the analysis needed to answer the research questions. This approach ensures that the findings will not only contribute to the understanding of ChatGPT's role in education but will also align with the strategic goals of the AI DRIVER! project, thus informing recommendations for more effective AI integration in educational settings.

1.4 Literature and Key Concepts

This chapter provides an overview of the theoretical foundation for the research by reviewing relevant literature and identifying the key concepts that inform the study. The literature review incorporates academic sources from the areas of artificial intelligence (AI), educational technology, pedagogy, and ethics, examining how ChatGPT is being incorporated into educational environments. Following the literature review, key concepts will be introduced to frame the context and scope of the study, outlining the main ideas that guide the analysis.

1.4.1 Literature Review

The theoretical framework of this thesis is based on a distinct range of literature that explores the integration of AI in education, focusing on the opportunities and challenges presented by ChatGPT. Various studies have highlighted the transformative role AI can play in both teaching and learning processes. For instance, Grassini (2023) and Rahman & Watanobe (2023) emphasize how generative AI models like ChatGPT can improve personalized learning experiences by adapting to individual student needs and providing real-time feedback. These authors discuss how AI goes beyond merely automating tasks, offering effective, responsive tools that support both students and educators. (Grassini 2023; Rahman & Watanobe 2023).

In particular, the research on the role of ChatGPT in education suggests that it can significantly improve the efficiency of academic workflows. According to Rahman & Watanobe (2023), ChatGPT has the potential to facilitate the creation of tailored educational materials, enhance interactive learning experiences, and assist educators in managing routine tasks such as grading and lesson planning. Similarly, the work of Chung Kwan Lo (2023) explores how AI tools like ChatGPT are adjusting the relationship between students and teachers by broadening access to information and making education more inclusive. Lo (2023) also highlights the need for educators to adapt their teaching strategies to accommodate AI technologies, ensuring that they enhance learning rather than replace critical human interactions.

Additionally, studies in the field of pedagogy underscore the importance of AI integration in cultivating new ways of learning. Elbanna & Armstrong (2023) argue that the introduction of AI tools requires a shift in teaching methodologies, emphasizing the need for professional development programs to help educators incorporate these technologies effectively into their curricula. Jemmy, Aina, Wahdah, Joshua & Sabri (2024) further suggest that strategic planning is necessary to evaluate the long-term implications of AI in education, with a focus on continuous assessment and adaptation of teaching strategies to align with technological advancements.

The literature also addresses the ethical implications of using AI in education. Kennedy (2023) explores the concerns surrounding academic integrity, particularly the potential for students to misuse AI tools like ChatGPT. Kennedy (2023) discusses how educational institutions are developing guidelines to ensure responsible use of AI, focusing on maintaining fairness, promoting ethical behavior, and preventing over-reliance on AI-generated content. Such discussions are central to understanding the wider impacts of AI on academic practices and ensuring that it is used as a complementary tool rather than a replacement for traditional learning processes. (Kennedy 2023).

1.4.2 Key Concepts

Several key concepts are essential to this research, providing the framework for understanding the integration of AI—specifically ChatGPT—in education and its implications for both students and educators. Generative AI (genAI) refers to a class of artificial intelligence models capable of generating human-like content, including text, images, and code (OpenAI, 2023). Notable examples beyond ChatGPT include tools like Google's Bard, Microsoft's Copilot, and image generators such as DALL-E and MidJourney. These tools vary in their application, with some focusing on enhancing creativity and visual content, while others excel in productivity and language-based functionalities.

In this study, the focus is on ChatGPT, a prominent generative AI model developed by OpenAI, specifically designed to assist with tasks such as communication, content creation, and personalized learning support (OpenAI, 2023). ChatGPT was chosen for this research because of its widespread adoption in academic and professional settings, making it a relevant and impactful subject of study. Its ability to engage in natural language conversations and provide meaningful, contextually appropriate responses sets it apart from other tools that may be limited to specific applications like coding assistance (e.g., Copilot) or visual content generation (e.g., DALL-E).

Additionally, ChatGPT’s versatility in facilitating learning and teaching tasks, such as providing feedback, summarizing information, and assisting with research, aligns closely with the needs of educators and students in higher education. While other generative AI tools can complement educational processes, ChatGPT's core functionality as a conversational AI aligns most directly with the objectives of this study, which focus on improving educational efficiency, encouraging critical thinking, and maintaining academic integrity.

This focused scope allows the research to dive deeply into the opportunities and challenges posed by ChatGPT in academic settings while acknowledging that other genAI tools may also play significant roles in enhancing education.

Pedagogical integration is another critical concept, referring to the ways in which educators incorporate ChatGPT into their teaching methods. This research evaluates how teachers leverage ChatGPT to enhance their instructional strategies, automate routine tasks, and engage students in more interactive and meaningful learning experiences (Rahman & Watanobe, 2023).

Learning theories, particularly self-directed learning, offer another perspective for assessing the impact of ChatGPT in education. These theories suggest that students learn best when they are actively engaged in the learning process and have control over their own educational journey

(Knowles, 1975; Grassini, 2023). The research examines how ChatGPT supports these approaches by enabling students to access information independently, engage in critical thinking, and develop problem-solving skills in a self-paced manner. The ability of ChatGPT to provide personalized feedback and adapt to the needs of individual learners aligns well with these educational theories.

Ethical considerations also play a significant role in this research. The use of AI and specifically ChatGPT in education raises concerns about academic integrity, particularly in relation to plagiarism and the over-reliance on AI-generated content. This study investigates how institutions such as Haaga-Helia and other universities are addressing these ethical challenges, focusing on the guidelines and policies put in place to ensure responsible AI use. The ethical dimension of AI integration is essential for maintaining the integrity of educational practices while also allowing students to benefit from the opportunities that AI presents.

Finally, the SAMR model, which stands for Substitution, Augmentation, Modification, and Redefinition, is used as a framework to assess the level of technology integration in education. This model helps to evaluate how ChatGPT is used by both students and educators, ranging from basic substitution of traditional methods to more transformative uses that redefine learning tasks. By using the SAMR model, the research aims to explore how ChatGPT can facilitate not only incremental improvements in learning but also more significant changes that enhance the educational experience in innovative ways (PowerSchool 2021).

2 Theoretical Framework

The theoretical framework chapter brings together various ideas and studies about ChatGPT and its use in education. It covers the basics of ChatGPT, looks at ethical concerns, discusses rules from organizations like ARENE (The Rectors' Conference of Finnish Universities of Applied Sciences) and Haaga-Helia University of Applied Sciences, and explores different teaching methods. Arene is a collaborative body representing all 24 Finnish universities of applied sciences and their rectors, focused on advancing career-oriented learning, economic development, and responsible practices across these institutions (Arene 2024). By using these ideas as a foundation, the research aims to thoroughly examine how ChatGPT fits into education and what it means for teaching and learning.

2.1 Introduction to ChatGPT

OpenAI, a leading AI research company, developed ChatGPT and launched it in November 2022. Founded by entrepreneurs and researchers including Elon Musk and Sam Altman in 2015, OpenAI is backed by notable investors such as Microsoft. Additionally, OpenAI is known for creating other AI innovations like DALL-E, a text-to-art generator (Ray 2023).

ChatGPT is an AI-powered chatbot designed to engage in natural, human-like conversations with users. It operates using advanced natural language processing (NLP) techniques, a branch of artificial intelligence focused on enabling computers to understand, interpret, and generate human language. NLP combines computational linguistics with machine learning to process large volumes of text data, allowing ChatGPT to respond contextually and coherently. Generative AI, the technology supporting ChatGPT, enables the model to create new content by learning patterns from existing data. Unlike traditional AI systems that rely on pre-programmed responses, generative AI empowers ChatGPT to generate unique and context-specific replies, making it a versatile tool for applications such as content creation, tutoring, and problem-solving.

The term "GPT" stands for "Generative Pre-trained Transformer," which highlights how ChatGPT processes requests and formulates responses. It undergoes training using reinforcement learning, incorporating human feedback and reward models to rank the quality of responses, thus improving its conversational abilities over time (Hetler 2023). ChatGPT's development aligns with strategic goals in AI, displaying how organizations like OpenAI innovate to address user needs while prioritizing long-term objectives like scalability, versatility, and reliability.

The technology behind ChatGPT displays how the model processes user requests and formulates responses. Initially trained on extensive datasets using reinforcement learning, the model integrates human feedback to refine the quality and accuracy of its outputs. Reinforcement learning allows the system to prioritize responses that are contextually relevant and factually accurate, improving user interactions over time. OpenAI has progressively developed this technology, transitioning from GPT-3.5 to the more advanced GPT-4. While GPT-3.5 provides quick and reliable responses for general queries, GPT-4 introduces significant improvements, such as faster response times, better contextual understanding, and expanded capabilities like internet plugins for real-time information retrieval. GPT-4 can also manage more complex tasks, including detailed descriptions and extended content creation, managing discourse up to 25,000 words. This evolution enhances its applicability in scenarios ranging from generating comprehensive reports to supporting in-depth academic research. (Hetler 2023)

Figure 1 below illustrates an example of a user interacting with ChatGPT. In this example, the user asks, 'What are you?' and ChatGPT identifies itself, demonstrating its ability to respond naturally and contextually. The screenshot was taken directly from ChatGPT 3.5, displaying how the model introduces itself and interacts with users in a conversational format. This figure provides a visual representation of ChatGPT's ability to process user inputs and deliver human-like responses.

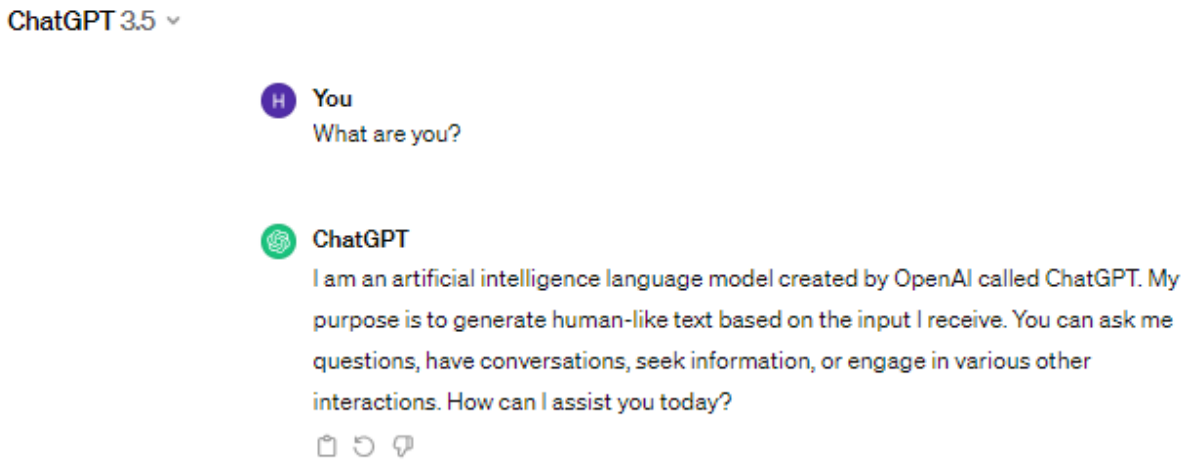

Figure 1. Example of using ChatGPT

The evolution of AI in educational settings has been particularly influenced by generative technologies like ChatGPT. These technologies have proven transformative, extending far beyond simple automation to significantly enhance the capacity of educational tools to support personalized

learning experiences. Grassini discusses how generative AI not only automates routine tasks but also actively enhances the interactive capacity of digital learning environments. By adapting in real-time to the needs and responses of students, AI like ChatGPT can tailor educational experiences to individual learning styles and paces—a considerable departure from the traditional one-size-fits-all approach. Furthermore, Grassini emphasizes the role of AI in reshaping educational interactions. With its ability to generate and moderate discussions, simulate complex scenarios, and provide rapid feedback, AI creates a more engaging and immersive learning environment. This not only facilitates knowledge acquisition but also enhances the development of critical thinking and problem-solving skills, as students are challenged to apply what they learn in diverse contexts. (Grassini 2023).

The integration of ChatGPT and similar generative AI technologies represents a pivotal development in the evolution of educational technology, enhancing its capacity to deliver personalized learning experiences at scale. This advancement makes education not only more accessible but also more effective, aligning educational outcomes more closely with individual learner needs and contemporary educational goals. (Grassini 2023).

2.2 ChatGPT in Education

OpenAI suggests four main ways to utilize ChatGPT: role-playing conversations, building classroom materials, providing English language assistance for non-English speakers, and teaching critical thinking skills. For instance, teachers can use ChatGPT to simulate various personas, such as students or school superintendents, to anticipate questions and improve lesson delivery. Additionally, ChatGPT's advanced writing and conversational skills can help generate quizzes, tests, and lesson plans. Its translation capabilities also benefit non-English speaking students by aiding in translation, proofreading, and conversation practice. Furthermore, ChatGPT can be used to teach critical thinking by helping students assess the credibility of AI-generated answers and confirming them with other sources. (Ortiz 2023). From a strategic perspective, integrating ChatGPT in education can enhance the competitiveness of institutions by improving teaching practices and encouraging innovation. As global competition in education intensifies, institutions that embrace such technologies are better positioned to attract students, meet workforce demands, and remain relevant in a rapidly changing environment.

“Rather than weaken student effort, artificial intelligence can help prepare students for the real world by encouraging critical thinking—with a few caveats” (Abramson 2023).

While some view ChatGPT as a threat to academic integrity, others see it as an opportunity to cultivate critical thinking skills. A New York Times article from earlier this year highlights instances of cheating with ChatGPT in college courses and instructors redesigning curricula to prevent academic dishonesty. Some schools are blocking the technology altogether: Earlier this year, the New York City Department of Education banned the use of ChatGPT based on concerns that it could prevent student learning. (Huang 2023).

Some educators, however, see ChatGPT, an AI chatbot designed to generate human-like text and assist with tasks such as answering questions and creating content, as an opportunity rather than a threat. Psychologist Angela Duckworth, PhD, argues against banning the bot, explaining that it and similar technologies are here to stay—and that instructors should learn how to incorporate it into curricula (Los Angeles Times, January 19, 2023).

Psychology instructors suggest incorporating ChatGPT into courses to encourage critical thinking and prepare students for real-world applications. By aligning the use of ChatGPT with specific course goals and encouraging critical analysis of its responses, educators can effectively integrate the tool into their teaching practices. (Abramson 2023).

As stated by Kathy Hirsh-Pasek, PhD (2023), a professor of psychology at Temple University in Philadelphia “We have a choice here to lean in or run away, like we had a choice about whether we wanted to use calculators in statistics class. We now know people can learn using calculators, so the question is: How do we increase critical thinking while also embracing what ChatGPT can do?”

Incorporating ChatGPT into educational settings requires careful consideration, much like any new tool. Teachers need to weigh ethical concerns, potential for cheating, and ensure equitable access, just as they would with any other technology. However, when implemented thoughtfully, ChatGPT has the potential to be a valuable tool, even revolutionary, in preparing students for their future professional endeavors. (Abramson 2023).

In the study by Rahman and Watanobe (2023) published in MDPI, the authors explore ChatGPT's capacity to generate interactive, personalized learning experiences. They highlight the language model's ability to facilitate a diverse range of educational activities, from composing tailored educational materials to conducting personalized assessments that adapt to the student's progress and feedback. This capacity for customization addresses individual learning trajectories and the diverse requirements of students with varying academic abilities and learning styles. Rahman and Watanobe emphasize the model's potential to supplement educators' efforts, not as a replacement but

as a significant enhancement to the educational toolkit. The authors also discuss the challenges in ensuring that the personalized content produced by ChatGPT maintains a high standard of academic quality and continues to encourage critical thinking skills without leading students to overrely on AI-generated content. (Rahman & Watanobe 2023).

Elbanna and Armstrong (2023), focus on the pedagogical shifts necessitated by the introduction of AI tools like ChatGPT in education. The authors describe how ChatGPT can be an asset for educators, allowing for the creation of dynamic, responsive learning environments that cater to the needs of the 21st-century learner. This tool can provide immediate feedback, simulate complex problem-solving scenarios, and offer a range of perspectives on a given topic, thereby enriching the learning experience. However, the authors also caution that the role of the educator is more critical than ever, as they are responsible for integrating AI in a manner that complements and enhances the curriculum. They advocate for professional development programs that empower educators to effectively incorporate these technologies into their teaching. (Elbanna & Armstrong 2023).

Jemmy et al. (2024) offers a long-term view on integrating technologies like ChatGPT in education. The authors argue for strategic planning that considers not only the immediate benefits of AI integration but also its long-term implications for teaching and learning. They propose an iterative process of adoption, which includes continuous evaluation of ChatGPT’s impact, regular updates based on technological advancements, and adaptation of pedagogical strategies to align with evolving educational objectives. This approach requires institutional commitment to providing ongoing support for educators, including training and resource allocation, to fully harness the potential of AI in education. (Jemmy, Aina, Wahdah, Joshua & Sabri 2024).

ChatGPT offers significant promise in facilitating interactive learning. The study by Hosseini et al. (2023) found that although only 40% of participants had used ChatGPT, those who had were more inclined to use it in a broader range of contexts, particularly in education. The ChatGPT model's ability to engage in natural language conversations can simulate a conversational partner for students, aiding in clarifying doubts, providing explanations, and cultivating critical thinking. This interactive approach can complement traditional teaching methods, creating a more dynamic and responsive learning environment. One of the key advantages of ChatGPT in education is its capacity to deliver personalized tutoring and feedback. ChatGPT can adapt to the individual learning pace and style of students, offering tailored explanations and resources. For example, it can help simplify complex legal texts for law students or assist computer science students in debugging code and improving design. This personalized attention, often challenging to achieve in traditional

classroom settings, can significantly enhance the learning experience, making education more accessible and effective. Despite its potential benefits, the use of ChatGPT in education raises several challenges and ethical considerations. The study by Hosseini et al. emphasizes concerns about the accuracy and reliability of information generated by ChatGPT, given its propensity to produce biased or incorrect content. The ethical implications of reduced human interaction in education and the potential for increased plagiarism and misuse of AI-generated content are significant concerns. Ensuring that ChatGPT is used as a supplementary tool rather than a replacement for traditional teaching is crucial to maintaining the quality and integrity of education. Hosseini et al. suggest several future research directions to better understand the impact of ChatGPT in education. Further studies are needed to evaluate the long-term effects of AI-assisted learning on student performance and engagement. Developing strategies to mitigate the risks of misinformation and bias is essential. Additionally, integrating ChatGPT with other educational technologies, such as adaptive learning platforms, presents promising opportunities for creating a more holistic and effective learning environment. Continued collaboration between educators, researchers, and technologists will be vital in harnessing the full potential of ChatGPT in education. (Hosseini et al., 2023).

2.2.1 Impact on Learning and Teaching

The integration of Artificial Intelligence tools, particularly ChatGPT, into educational settings has significantly transformed the dynamics between students and educators, reshaping traditional roles and interactions. Lo (2023) explores how ChatGPT alters engagement levels, increases the accessibility of information, and redefines the role of the teacher. ChatGPT improves student engagement by providing an interactive and responsive learning environment. Students can interact with ChatGPT to clarify doubts, explore topics in-depth, and receive instant feedback on their queries. This constant availability of a conversational partner helps maintain student interest and encourages continuous learning outside of traditional classroom hours. ChatGPT's ability to simulate human-like interactions makes learning more engaging and enjoyable for students, thereby increasing their motivation to learn. In this sense, ChatGPT democratizes access to educational resources, breaking down barriers like language by offering translation and proofreading assistance, which benefits non-native speakers. (Lo, 2023). Institutions implementing ChatGPT at scale must consider strategic implications, such as aligning AI use with long-term educational goals and addressing challenges like digital inequalities and ethical dilemmas. By addressing these factors strategically, universities can ensure AI adoption benefits all stakeholders equitably.

However, while Lo (2023) emphasizes the advantages of ChatGPT in facilitating personalized learning and enhancing student engagement, other sources, such as Sabzalleva et al. (2024), highlight significant concerns that accompany the integration of such AI tools in educational settings. Karthikeyan notes that while ChatGPT can offer personalized education and assist in various tasks like course design and assessment creation, it also raises issues of over-reliance. Students may become dependent on AI-generated content, potentially limiting the development of critical thinking and independent problem-solving skills. Additionally, ChatGPT's ability to generate exam responses and assignments has led some institutions to ban its use, fearing academic dishonesty and plagiarism. (Sabzalleva et al. 2024).

Both Lo (2023) and Sabzalleva et al. (2024) agree on the potential of ChatGPT to transform education, particularly through improving accessibility and offering real-time feedback. ChatGPT allows students to engage with learning materials at their own pace, making education more flexible and tailored to individual learning styles. This is especially beneficial in online learning environments where real-time interaction may otherwise be limited. However, Sabzalleva et al. (2024) raises important concerns about the misuse of AI-generated content, which mirrors earlier fears about search engines, though ChatGPT presents unique challenges as it does not provide references or specific sources for its responses, thus complicating the process of verifying the accuracy of information. (Sabzalleva et al. 2024).

Furthermore, both sources recognize the shift in the educator's role, from being the sole provider of knowledge to becoming a facilitator of learning. Lo (2023) discusses how ChatGPT can manage routine queries and basic explanations, freeing up educators to focus on stimulating critical thinking and problem-solving skills. This shift enables teachers to engage in more meaningful interactions with students, guiding them through complex cognitive tasks. Similarly, Sabzalleva et al. (2024) acknowledges that educators must adapt to the use of AI by incorporating it into their teaching strategies in ways that complement rather than replace traditional methods. (Sabzalleva et al. 2024).

Nevertheless, Sabzalleva et al. (2024) introduces additional risks not addressed by Lo (2023), particularly concerning academic integrity and fairness in assessments. While ChatGPT can assist students in learning more efficiently, its use in generating assignments and essays without proper referencing raises ethical concerns. Educational institutions must therefore rethink their assessment practices to mitigate the potential for misuse, ensuring that AI tools like ChatGPT are used ethically and responsibly. (Sabzalleva et al. 2024; Lo, 2023).

Both sources refer to the issue of digital inequality. Sabzalleva et al. (2024) stresses that the increasing reliance on AI-powered educational tools like ChatGPT could heighten the technological divide, as not all students have equal access to the necessary technology and stable internet connections. Schools and universities need to take proactive measures to address this issue by providing equitable access to digital tools and resources, ensuring that the benefits of AI in education are not limited to those with privileged access. (Sabzalleva et al. 2024; Lo, 2023).

In conclusion, ChatGPT presents both opportunities and challenges for education. While it offers powerful tools for personalized learning, real-time feedback, and content creation, it also poses risks to academic integrity, critical thinking development, and equitable access to education. Lo (2023) and Sabzalleva et al. (2024) both emphasize the importance of educators adapting their strategies to ensure that ChatGPT supports rather than prevents student learning. As AI technology continues to advance, educators must strike a careful balance between leveraging its strengths and ensuring that students continue to develop the independent learning skills essential for long-term academic success. (Sabzalleva et al. 2024; Lo, 2023).

2.2.2 AI Guidelines within Arene and Haaga-Helia University of Applied Sciences

The Rectors' Conference of Finnish Universities of Applied Sciences, known as Arene, serves as a collective body representing the shared interests of all 24 Finnish universities of applied sciences and their rectors. Its primary role is to advocate for policies that support the educational and professional goals of these institutions, which focus on career-oriented learning that drives economic development and international collaboration. Arene's members, who convene approximately eight times per year, work together to advance innovation, improve working life, and encourage responsible, open practices that equip students as opportunity creators and problem-solvers in society. (Arene 2024)

Arene has issued guidelines for the use of artificial intelligence (AI) in universities of applied sciences, highlighting the importance of integrating AI both organizationally and in teaching to enhance learning and work-life skills. These guidelines are tailored to allow each university to adapt their own approach. The recommendations emphasize responsible implementation of AI tools, ensuring all users are well-trained and aware of ethical considerations. It is important to promote fair and equal use of AI, maintaining strong data protection and privacy standards. Policies and practices should be regularly updated to align with the latest AI developments and ethical standards, and an open, evaluative approach to AI use within the academic community is encouraged. (Arene

2024). Appendix 3 includes an example of instructions for educators, adapted from Arene's guidelines. This practical example demonstrates how strategic policies can be operationalized to ensure responsible, impactful AI integration in teaching practices.

In teaching, AI should be utilized to improve students' competencies that are relevant to the working world. Teachers can use AI tools to aid in planning, evaluation, and guidance of their teaching practices. Additionally, students should be instructed on the responsible use of AI, ensuring they understand both its capabilities and limitations. Discussions on the ethical use of AI should be incorporated into the curriculum to uphold a comprehensive understanding among students. (Arene 2024). Appendix 3 includes an example of instructions for teachers, adapted from Arene's guidelines, to demonstrate how educators can effectively implement these practices.

For student interaction with AI, the guidelines suggest using AI as a learning aid. Students are responsible for ensuring the accuracy and integrity of their work when using AI. They are encouraged to engage with AI tools to develop necessary work-life skills but should remain critical of the content generated and understand its limitations. These guidelines emphasize a responsible, ethical approach to using AI in educational settings, aiming to prepare students effectively for AI's increasing role in the professional landscape. (Arene 2024).

Artificial intelligence tools have rapidly become an essential component of a student's toolkit. Haaga-Helia's guidelines offer perspectives on leveraging AI for information retrieval, featuring examples of tools that are not explicitly recommended by the library but are presented for consideration. Users are advised to use these tools properly, adhering to the directives of their instructors as well as the general guidelines issued by Haaga-Helia. AI should not be considered an author or a literature source, which means AI-generated texts typically do not require traditional source citations. However, it is mandatory at Haaga-Helia to disclose the use of AI tools in reports and coursework. Guidelines for proper citation are detailed in the "Support for Citation" manual provided by Haaga-Helia. (LibGuides 2024).

Among the generative AI tools, highlighted are ChatGPT, Microsoft's Copilot, and Google's Gemini. These tools function as conversational AIs capable of answering queries, translating languages, and generating diverse textual content, including coding and instructional material. To effectively utilize AI in information retrieval, it is essential to understand its supporting role. (LibGuides 2024). AI proves most useful when users already have a foundational knowledge of the topic and can critically assess the AI-generated content. For instance, AI can be used to brainstorm search terms or expand on existing perspectives within a subject area.

However, the limitations of the above-mentioned AI tools must be recognized. AI tools, while helpful, are insufficient on their own for comprehensive academic research. Free versions of AI tools such as ChatGPT are not equipped to perform internet searches, with their training data only current up to January 2022. Paid versions, like ChatGPT Plus, extend this slightly to April 2023. Tools equipped with additional capabilities, such as Copilot and Gemini, can integrate internet searches but still do not function as full-fledged search engines. Information and sources generated by AI should be approached with skepticism. AI can produce inaccurate, incomplete, or entirely fabricated information, and it is crucial to verify its outputs through additional, reliable sources. AI should not be relied upon for generating citations or bibliographies as it may include nonexistent sources or fabricate details like page numbers.

Specialized AI tools have been developed specifically for academic research, which can facilitate the search for scholarly publications. Tools such as Semantic Scholar, ResearchRabbit, and others offer functionalities that range from traditional keyword searches to more sophisticated capabilities like visual mapping of research connections and automated generation of summaries or research questions. (LibGuides 2024).

When employing to AI tools such as ChatGPT, Microsoft’s Copilot, and Google’s Gemini, it is important to consider various factors. The scope and focus of the tools can vary significantly, with most being optimized for use in English. Not all sources identified by these tools are freely accessible; accessing the full text might require using services like HH Finna or encountering paywalled content. Registration might be necessary for some tools, making it important to understand how personal data is managed. When using licensed content, ensure compliance with the terms specified in the licensing agreements. Outputs from these tools should be critically assessed to verify their accuracy and relevance. (LibGuides 2024). This integrated approach to using AI in academic settings highlights the need for a cautious and informed application of these technologies, balancing their potential to enhance research with a critical assessment of their output and adherence to ethical standards.

Although Arene and Haaga-Helia provide clear guidelines on using AI in education, it is worth remembering that these rules can look different at other universities. Each school might have its own take on how AI should be used and referenced, shaped by their unique priorities and standards. Therefore, it is always a good idea for students and teachers to check their own university's policies to make sure they are in line with what is expected. To further support educators, Appendix 3 presents an example of instructions for teachers, displaying how these guidelines can be operationalized to create a responsible and effective approach to AI integration.

2.3 The Ethics of ChatGPT

Kennedy (2023) poses a critical question: What should we make of concerns about ChatGPT becoming "CheatGPT"? Cheating is widely condemned in competitive arenas because it unfairly benefits one individual at the expense of others, violating principles of fairness. In education, cheating grants an unfair advantage and compromises academic integrity, preventing genuine learning and personal growth. (Kennedy, 2023).

The primary concern is not necessarily about ChatGPT's quality but the belief that students might use it to cheat, leading to widespread academic dishonesty. The release of ChatGPT forces educators to confront a deeper issue: students' increasing obsession with grades, GPAs (grade point average, which is the sum of all your course grades throughout your high school career divided by the total number of credits), and degree completion, sometimes at the expense of ethical behavior (Kennedy, 2023). This shift is due to the gamification of education, where metrics like exam scores, course grades, and GPAs simplify the complex values and goals of education. Gamification trades complexity for simplicity, providing clear metrics for success but potentially undermining the true values of education, such as personal transformation, skill development, and exposure to diverse perspectives. (Kennedy, 2023).

Students who get swept up by gamification may not see the ethical problem with using ChatGPT. For these students, the tool is merely a means to achieve a passing grade or complete a degree, not a way to cheat themselves out of an education. This perspective explains the panic over ChatGPT among educators, who fear that their efforts to promote learning outcomes will fall short unless they address the underlying issue of gamification. (Kennedy, 2023).

However, there are ethical ways to use ChatGPT. Universities increasingly recommend ChatGPT to help students overcome procrastination and get started on their essays or exam preparations. The AI tool can suggest research starting points, such as relevant journals, books, and websites, saving valuable time (Open Universities Australia, 2023). Institutions like Flinders University, the University of Adelaide, and the University of South Australia permit students to use ChatGPT as a writing aid for assignments, provided they disclose its usage. This approach encourages students to develop their arguments and engage in critical thinking while using ChatGPT as a starting point. (Open Universities Australia, 2023).

ChatGPT can also assist in structuring essays, clarifying unfamiliar concepts, and proofreading drafts for grammatical errors and readability issues. However, universities typically expect students to cite ChatGPT as a source, using formats like citing personal correspondence. Conversely, using

ChatGPT to write entire assessments or essays constitutes plagiarism. Universities are actively implementing measures to detect AI-generated text, with tools like Turnitin being updated to identify such content. (Lo, 2023). Despite ChatGPT's ability to produce superficially adequate text, it often lacks depth, personality, and logical coherence. Experienced educators can detect the robotic language patterns indicative of AI-generated content. The consequences of getting caught far outweigh any perceived benefits. (Open Universities Australia, 2023).

OpenAI acknowledges ChatGPT's occasional inaccuracies, where the chatbot may provide false information. It is essential to cross-reference ChatGPT's output with multiple sources for verification. For example, Marcel Salathe, a digital epidemiologist, found that ChatGPT invented references when asked for epidemiology sources, highlighting the need for verification. (Open Universities Australia, 2023).

Currently, universities vary in their acceptance of AI tools like ChatGPT. Some institutions allow its use as a reference source, while others impose limitations or prohibit it entirely. It is crucial for students to familiarize themselves with their university's academic integrity policy to avoid academic misconduct and plagiarism, which can result in severe consequences.

Different universities have adopted varied approaches to integrating ChatGPT. For instance, some institutions, like the University of Adelaide, allow its use with disclosure, while others, like the New York City Department of Education, have banned it altogether (Huang, 2023). These case studies provide valuable insights into the diverse strategies being employed and the lessons learned from each approach.

The concerns surrounding ChatGPT are reminiscent of past controversies over educational technologies. For example, the introduction of calculators in mathematics faced resistance due to fears that they would undermine basic arithmetic skills. Similarly, the internet and online resources initially raised concerns about plagiarism and the authenticity of student work. Over time, these technologies were integrated into educational practices with appropriate guidelines and safeguards, suggesting a potential path forward for ChatGPT.

Evaluating the use of ChatGPT requires a comprehensive ethical framework that considers various dimensions of academic integrity. This includes the role of human judgment in education, the balance between technology use and traditional learning methods, and the importance of fostering independent thinking. Educators must ensure that ChatGPT is used to complement human instruction, enhancing the learning experience without replacing critical educational interactions. (Rahman & Watanobe, 2023).

Understanding student perspectives on ChatGPT is crucial for developing effective policies. Surveys and interviews reveal that while some students appreciate the tool's assistance in overcoming writer's block and structuring essays, others express concerns about over-reliance and the potential for academic dishonesty. Incorporating these insights can help educators create more balanced and supportive learning environments.

The long-term implications of integrating AI tools like ChatGPT into education are significant. As these technologies evolve, they may offer even more sophisticated support for personalized learning. However, this also necessitates continuous evaluation and adaptation of educational strategies. Institutions must commit to ongoing professional development for educators, ensuring they have the skills and resources to effectively incorporate AI into their teaching practices. (Lo, 2023).

In conclusion, the ethical use of ChatGPT in education hinges on balancing the tool's benefits with the potential risks of academic dishonesty. While ChatGPT can provide valuable support for students in overcoming procrastination, structuring essays, and clarifying concepts, it is imperative that its use is transparent and that students continue to engage in critical thinking and independent learning. Educators are encouraged to adapt their teaching strategies to incorporate AI tools responsibly, ensuring that they supplement rather than replace traditional educational methods. By addressing the underlying issue, educators can cultivate a learning environment where the true values of education are prioritized, and tools like ChatGPT are used ethically to enhance, rather than undermine, the educational experience.

2.4 The SAMR Model

The SAMR Model, developed by Dr. Ruben Puentedura, breaks down the four stages of the SAMR model—Substitution, Augmentation, Modification, and Redefinition—each representing a different degree of technology integration and potential impact on teaching and learning (PowerSchool 2021). Strategically, the SAMR model provides a valuable framework for institutions to evaluate how technology, such as AI, can be integrated into teaching to maximize both short-term efficiency and long-term educational innovation.

At the “Substitution” level, technology serves as a direct replacement for traditional tools, without any functional improvement. For example, students use a word processor instead of writing by hand, which does not change the nature of the writing process but might make the mechanical aspects easier. In “Augmentation” stage, technology still substitutes but adds functional

improvements. For example, spell check and grammar suggestions in a word processor enhance writing tasks. The third stage, “Modification” is when technology integration significantly redesigns the task. For instance, students use Google Docs for collaborative writing projects, which changes the task’s workflow and allows for real-time collaboration and feedback from peers and teachers. The last stage “Redefinition” allows uses technology for creating new tasks that were previously inconceivable. An example would be students creating a multimedia presentation that incorporates text, images, audio, and video to demonstrate learning in ways that were not possible with traditional tools. (PowerSchool 2021).

The guide encourages educators to evolve their use of technology from simple substitution to transformation, where technology not only enhances but also transforms learning experiences (PowerSchool 2021).

A modified SAMR model can be implemented as a framework to evaluate the integration of technology in undergraduate education. It can assess various levels of technology integration, as defined by the SAMR model, affecting learning performance and engagement among university students. A study by Tay Choo Chuan and R. Sudha Nair investigated the impact of technology-integrated teaching on students' learning performance. The authors aimed to determine whether higher levels of SAMR could lead to better educational outcomes compared to lower levels. The research employed a quantitative approach, utilizing surveys and performance assessments to gather data from undergraduate students involved in courses that integrated technology at various SAMR levels. Courses were designed to include technology at each level of the SAMR model, from basic substitution (e.g., using digital textbooks) to redefinition (e.g., students creating multimedia projects that extend beyond traditional assessments). The results indicated a positive correlation between higher levels of technology integration (Modification and Redefinition) and improved student engagement and learning outcomes. Students exposed to the higher levels of SAMR reported greater satisfaction with learning processes, improved critical thinking abilities, and higher overall performance. Technology at the Modification and Redefinition levels encouraged active learning, collaboration, and the application of knowledge in novel and complex scenarios. The paper discusses the implications of the findings for teaching practices, suggesting that educators should strive to move beyond mere substitution and augmentation of traditional methods with digital equivalents. Integrating technology in a way that fundamentally changes the learning and teaching process can lead to more significant educational gains. Challenges such as the digital divide, resistance from educators, and the need for professional development are also addressed. It is emphasized that successful integration requires not only infrastructure but also a shift in

pedagogical strategies and continuous professional support. The study concludes that using the SAMR model as a framework for integrating technology in higher education can effectively enhance learning outcomes if applied correctly. It recommends that educational institutions should provide ongoing training for teachers on how to effectively move through the SAMR levels and exploit the full potential of educational technologies. (Nair & Chuan 2021)

Professors from various universities conducted a classroom ICT integration study in Tanzania. The study's objective was to evaluate how mLearning technologies could be integrated into educational contexts using the SAMR model, aiming to identify both the potential benefits and challenges of mLearning at different levels of technological integration. The research methodology involved a comprehensive literature review coupled with case studies that examined various mLearning initiatives. These case studies were analyzed through the lens of the SAMR model to understand how mobile technologies were being used at each level of the model. The findings revealed that mLearning technologies are often utilized at the Substitution and Augmentation levels, where their application does not fundamentally change instructional practices but does enhance learning engagement and access to information. However, more significant educational benefits were observed when mLearning was implemented at the Modification and Redefinition levels, where the technology enables new forms of learning activities that were not possible before, such as real-time collaboration on projects across different locations. (Kihoza, Zlotnikova, Bada & Kalegele 2016).

It is important to move beyond simple enhancement of traditional teaching methods (Substitution and Augmentation) to truly transform uses of mLearning (Modification and Redefinition). It highlights barriers to this transformation, including limited access to mobile technologies among students, lack of teacher training on advanced mLearning integration, and the need for educational policies to support innovative teaching practices. The article concludes that the SAMR model provides a valuable framework for educators to assess and plan the integration of mLearning technologies. It encourages educators to aim for higher levels of integration that can transform learning experiences. Recommendations for educators include the development of specific strategies to leverage mobile technologies for transformative educational purposes and the need for ongoing professional development in mLearning pedagogies. (Kihoza et al. 2016).

This chapter has explored the theoretical base of AI integration in education, focusing on ChatGPT's impact on learning and teaching, ethical considerations, and strategic frameworks such as Arene’s guidelines and the SAMR model. The literature highlights key benefits, including enhanced personalization, accessibility, and innovation, while acknowledging challenges such as

ethical risks, over-reliance, and digital inequality. These findings form the basis for addressing the research questions by examining how ChatGPT affects educational practices and identifying strategies for its optimal implementation.

3 Research and Development Methods

This chapter outlines the methodology for the research project, which utilizes both quantitative and qualitative approaches to gain a comprehensive understanding of the integration and impact of ChatGPT within the academic context of Haaga-Helia University of Applied Sciences. It explains the motive for using a mixed-methods approach, outlines the data collection and analysis processes, describes the tools utilized, and addresses ethical and practical considerations.

3.1 Research Approach and Methods

A mixed-methods approach was chosen for this research, integrating both quantitative and qualitative methods to gather complementary data types and provide a deeper understanding of the research questions. Quantitative methods were employed to identify patterns and trends in how Master's students use and perceive ChatGPT, while qualitative methods provided distinctive insights into educators' experiences and practices. This approach ensures that the study addresses both the breadth and depth of ChatGPT's integration in academic settings (Creswell & Plano Clark 2018).

In addition to traditional research methods, this study incorporated the use of an AI tool, ChatGPT, to support various aspects of the research process. ChatGPT was utilized to refine research questions, design surveys and interviews, and explore relevant academic concepts. It was also employed to clarify methodological approaches and review the structure and clarity of written content. By leveraging ChatGPT as a supplementary tool, I was able to enhance the efficiency and depth of the research process.

To ensure transparency and maintain academic integrity, the list of prompts used during the research process is provided below. Including this list highlights the responsible integration of ChatGPT into the research methodology.

ChatGPT Prompts:

- Are there any books written about ChatGPT?
- Can you provide me academic writing about ChatGPT?
- Can you explain the difference between qualitative and quantitative research methods?
- What are the best practices for ensuring the anonymity and confidentiality of survey participants in academic research?

- Could you help me find recent studies on the use of ChatGPT in educational settings?
- How can I use statistical tools to analyze survey data for my thesis on ChatGPT's impact in education?
- What are the best statistical tools for analyzing survey data?
- How can I refine my research questions to make them more specific to the impact of ChatGPT in academic settings?
- What are some considerations I should keep in mind while designing surveys and interviews for my thesis on the use of ChatGPT?
- Can you provide an example of how to conduct a thematic analysis of interview data?
- Could you give feedback on the clarity and structure of my chapter?
- What are you?
- What is ChatGPT?

The target groups for this study were carefully selected to align with the research objectives. The quantitative component focused on Master's students, as they are the primary users of ChatGPT in academic settings. The target group was identified through Haaga-Helia University of Applied Sciences' Teams channels, which host students enrolled in Master's programs. The qualitative component involved educators teaching Master's courses at Haaga-Helia, specifically those involved in virtual and independent study programs such as Strategizing in Organizations. This group was selected because of their direct experience with ChatGPT's potential role in teaching practices.

3.2 Quantitative and Qualitative Data Collection

Quantitative data was collected using an online survey developed in Google Forms, designed to investigate how Master's students use and perceive ChatGPT in their academic work. The survey included structured questions covering key areas such as frequency of ChatGPT usage, the perceived impact of ChatGPT on academic performance and ethical considerations associated with AI use in academic contexts. The survey design followed best practices in survey methodology, incorporating clear, concise questions and response options to minimize ambiguity and maximize response accuracy patterns (Moilanen, Ojasalo & Ritalahti 2022, 4).

The survey was initially distributed through Haaga-Helia's Teams channels targeted to master's students in the strategy program (English and Finnish program) in March 2024. To increase participation, the invitation was shared on my LinkedIn network. The post invited responses from

individuals who have recently completed a master's degree or are currently pursuing one. Despite these efforts, the response rate remained low. To address this, the survey was reposted on a master's student forum at Tampere University of Applied Sciences in August 2024, which significantly increased participation. These efforts ensured the collection of many responses for meaningful analysis. In total, the survey gathered 192 responses, surpassing the target of 50-100 responses, ensuring reliability, and enabling subgroup analysis based on variables such as academic discipline and enrollment year.

Google Forms was chosen to be used as a survey tool due to its user-friendly interface and ease of access for participants. While Google Forms claims to ensure data security, all responses were anonymized and stored on encrypted servers to comply with ethical guidelines. The platform's ability to provide real-time response tracking facilitated timely interventions, such as sending reminders to participants.

Qualitative data was collected through semi-structured interviews with five educators in Haaga-Helia UAS. These interviews were conducted between March and May 2024 using Microsoft Teams. These interviews focused on educators' perceptions of ChatGPT, strategies for maintaining academic integrity, and its impact on teaching practices. The semi-structured format allowed for consistency in questioning while providing flexibility to explore emerging themes. Each interview lasted approximately 45 minutes, was recorded with consent, and later transcribed for analysis.

The interview questions were designed to explore several key areas related to the use of ChatGPT in academic settings. These included educators' perceptions of ChatGPT and its potential as a teaching tool, strategies for addressing academic integrity concerns, and its impact on teaching practices and student learning experiences.

An inductive thematic analysis was applied to identify recurring themes, such as ChatGPT's role in academic integrity, its influence on teaching practices, and strategies for responsible use. This analytical approach enabled a detailed understanding of educators' perceptions and practices, aligning findings with the research questions.

3.3 Tools

Google Forms was used for survey distribution due to its ease of use and accessibility for participants. The tool's ability to provide real-time response tracking and customizable survey designs

made it ideal for collecting and managing quantitative data. However, while Google Forms claims to ensure data security and anonymity, these aspects were carefully verified and supplemented by storing responses on secure, password-protected servers (Google Forms 2024).

Microsoft Teams was used in facilitating the qualitative interviews, offering features such as video conferencing and automated transcription tools. These features allowed for accurate and efficient data collection while maintaining a professional and ethical environment for participants. The recordings were stored securely and used for detailed thematic analysis, ensuring that all observations were captured and interpreted accurately.

3.4 Data Management & Analysis Plan

All collected data was securely stored on password-protected computer accessible only to the researcher, with identifiable information anonymized to ensure confidentiality and adherence to ethical guidelines. Survey data was stored in encrypted files on cloud storage, while interview transcripts were kept in a separate, secure folder. Ethical considerations were central to the research process, with all participants providing informed consent before participating (Moilanen, Ojasalo & Ritalahti 2022, 4). Haaga-Helia University's ethical guidelines (LibGuides 2024) were followed throughout the study, ensuring compliance with best practices in social science research.

Quantitative data was analyzed using statistical techniques to identify patterns in ChatGPT usage, frequency, perceived academic impact, and ethical considerations among Master's students. Descriptive statistics focused on overall trends, such as academic discipline and ChatGPT usage patterns. This analysis helped identify whether factors like enrollment year or field of study influenced students' perceptions of ChatGPT.

Qualitative data from educator interviews was analyzed thematically. Thematic analysis followed Braun and Clarke's (2006) framework, which involves six phases: (1) familiarization with the data, (2) generating initial codes, (3) searching for themes, (4) reviewing themes, (5) defining and naming themes, and (6) producing the report. Key themes identified during this process were academic integrity, teaching adaptations, and strategies for responsible use. These themes aligned with the research questions and provided a detailed understanding of how educators perceive and incorporate ChatGPT into their practices. These themes were then analyzed in relation to the research questions, providing in-depth insights into educators' experiences and practices. The combined

quantitative and qualitative data analysis enabled a comprehensive understanding of ChatGPT's role in academic settings.

3.5 Research Schedule

A structured schedule was developed to guide the research process, from initial planning through to data collection, analysis, and reporting. Key milestones were aligned with the academic calendar and resource availability, providing a clear roadmap for each stage of the study. The schedule was adjusted as challenges arose, such as low survey response rates, and the survey was reopened in August 2024 to ensure a higher sample size was achieved.

The following table presents the timeline for each phase, detailing the primary tasks and their timelines. This schedule allowed for efficient management of time and resources, ensuring flexibility in response to data collection challenges, such as low initial response rates for the survey.

Table 2 Research timeline and phases.

Task	Description	Timeline
General information	Background research, planning, and schedule setup	09/2023 – 02/2024
Theoretical Framework	Literature review and theoretical groundwork	12/2023 – 06/2024
Survey, part 1	Initial survey distribution to Master's students; included incentives and reminders to boost participation	03/2024 – 06/2024
Interviews	Conducted with educators on Teams to gather qualitative insights	03/2024 – 05/2024
Survey, part 2	Reopened survey with additional outreach for increased responses	08/2024 – 09/2024
Results and analysis	Data analysis, interpretation, and reporting	10/2024 – 12/2024

3.6 Risk Assessment

Conducting a comprehensive risk assessment is essential to the successful execution of this research, as it allows for the identification of potential challenges and uncertainties while enabling proactive mitigation strategies. This approach ensures the integrity, reliability, and relevance of the study.

One significant risk in this research was the challenge of obtaining enough responses from surveys and interviews to ensure meaningful data analysis. To address this, sufficient time was allocated for survey distribution, including sending reminders to participants and reopening the survey in August 2024 to increase the response rate. Flexible scheduling options were also offered to interview participants, ensuring their availability and willingness to participate.

Ethical concerns regarding the collection and handling of sensitive information from survey participants and interviewees represented another critical risk. To mitigate this, informed consent forms were provided to all participants, clearly explaining the purpose of the study, how their data would be used and stored, and their rights to withdraw at any point. Strict adherence to ethical guidelines was followed to ensure anonymity and confidentiality throughout the research process.

Additionally, there was a potential risk of data security breaches, which could lead to unauthorized access to sensitive survey and interview data. To prevent this, all data were stored on encrypted servers with restricted access limited to the researcher. In compliance with data protection regulations, all collected data will be securely deleted upon the completion of the thesis.

Response bias also posed a potential challenge, as participants may have provided answers they perceived as socially acceptable or favorable rather than their true opinions. This could have compromised the accuracy of the findings. To counteract this, survey and interview questions were designed to be neutral and non-leading. Participants were reassured of their anonymity and confidentiality to encourage honest responses. Indirect questioning techniques and cross-validation of responses through multiple data formats (surveys and interviews) were employed to reduce bias and enhance the reliability of the results.

The fast development and frequent updates of AI technologies like ChatGPT presented another risk, as new features, capabilities, or ethical considerations may have emerged during the research, potentially rendering earlier data less relevant. To address this, the research design was kept flexible, with the literature review regularly updated to reflect the latest advancements in AI.

Interim checks were conducted, and the research framework was revised as necessary to incorporate new developments, ensuring the study remains accurate and relevant.

This risk assessment provided a foundation for proactive management, ensuring that potential challenges are effectively addressed. By consistently monitoring risks and implementing adaptable response strategies, the research aimed to uphold high standards of ethical conduct, data integrity, and academic accuracy.

4 Results

This chapter presents the findings from both the survey conducted with Master's students form Haaga-Helia University of Applied Sciences and Tampere University of Applied Sciences, and the in-depth interviews with educators at Haaga-Helia University of Applied Sciences. The survey received 192 responses from various universities, offering quantitative insights into students' usage patterns, perceptions of ChatGPT's impact on academic work, and ethical considerations. Additionally, four qualitative interviews with educators working at Haaga-Helia University of Applied Sciences, provide valuable insights into teaching perspectives, strategies for maintaining academic integrity, and the challenges educators face in adapting to AI integration. Together, these findings offer a view of ChatGPT's role and implications in the academic environment, linking back to the theoretical concepts discussed earlier.

4.1 Results of Survey

This section presents the findings from a survey conducted with 192 Master's students. The participants included students from Haaga-Helia University of Applied Sciences and Tampere University of Applied Sciences, with the aim of exploring ChatGPT's integration into their academic routines. Of the 192 responses, thirty were received from Haaga-Helia students, while the remaining responses came from Tampere University of Applied Sciences. No responses were received from students at other institutions. Statistical diagrams are included to illustrate these findings, offering a visual representation of the data to enhance understanding and highlight significant trends.

Figure 1 illustrates the age distribution of the respondents. Most participants (43.8%) were between the ages of 20–25, followed by 26% in the 25–30 range. This distribution highlights that a significant proportion of the respondents are young and at early stages of their academic or professional careers. Understanding the age profile helps contextualize usage patterns, as younger students may be more skilled at adopting new technologies like ChatGPT.

Figure 2 details the duration of respondents' enrollment in their degree programs. A majority (34.4%) had been enrolled for 0–1 year, while 32.8% were in their second year, and the remaining 32.8% had been enrolled for more than two years. This even distribution indicates a balanced representation of students at different stages of their Master's studies.

Figure 3 shows that 64.1% of respondents were enrolled in virtual and independent study courses, further emphasizing the relevance of digital tools like ChatGPT in their academic routines.

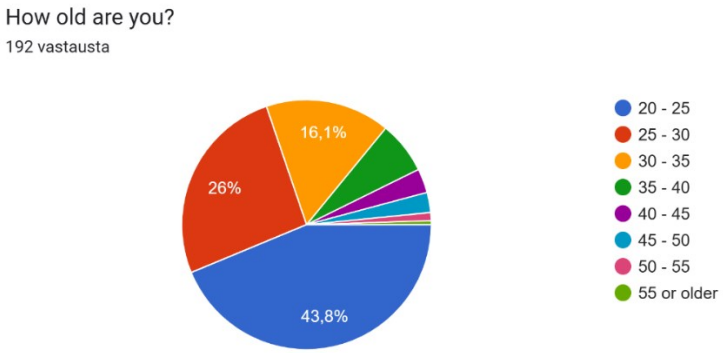

Figure 1. Age distribution of respondents.

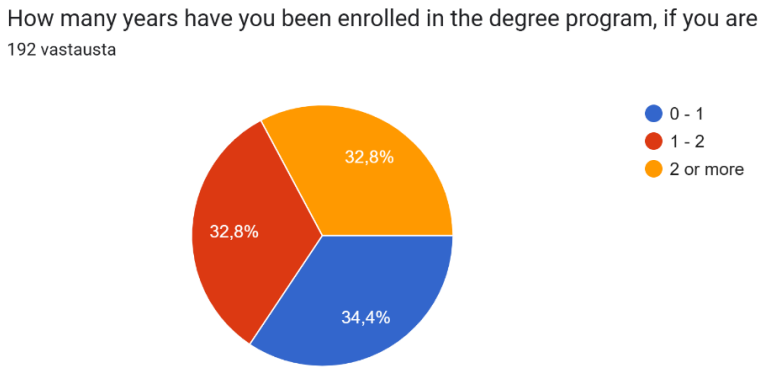

Figure 2. Duration of enrollment.

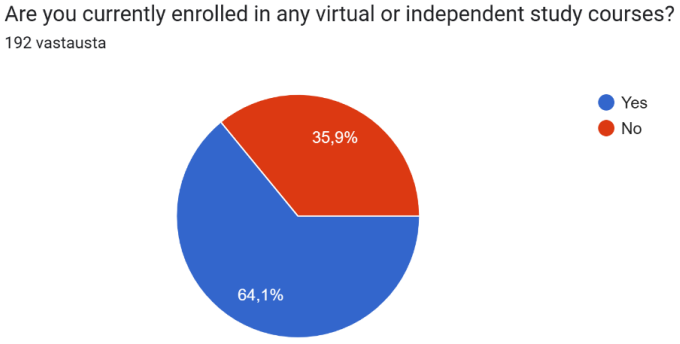

Figure 3. Enrollment in virtual and independent study courses.

The survey results indicate comprehensive use of ChatGPT across various academic and non-academic activities. As shown in Figure 4, 71.9% of respondents reported using ChatGPT for both academic and non-academic purposes. Only 16.1% used it exclusively for academic purposes, while 12% used it solely for non-academic tasks. This suggests that ChatGPT's versatility extends beyond its immediate academic applications, making it a multipurpose tool for users.

Figure 5 highlights the frequency of ChatGPT usage. Weekly usage was the most common (46%), with daily usage reported by 13%. This high frequency reflects how essential ChatGPT has become in students' study routines, serving as a valuable aid for routine academic tasks.

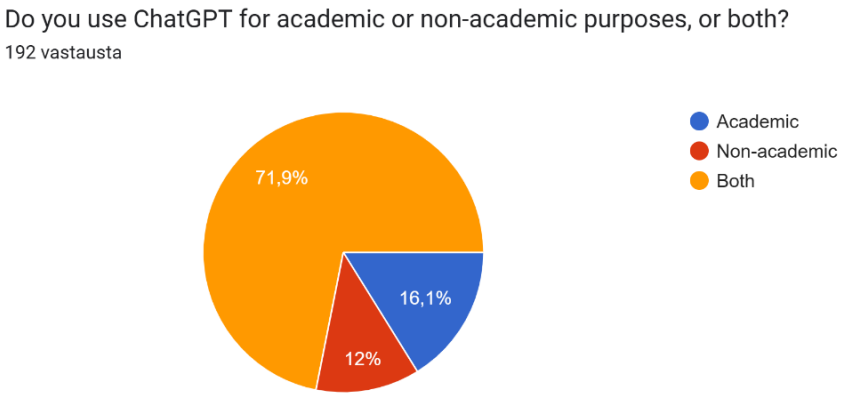

Figure 4. Purpose of ChatGPT usage.

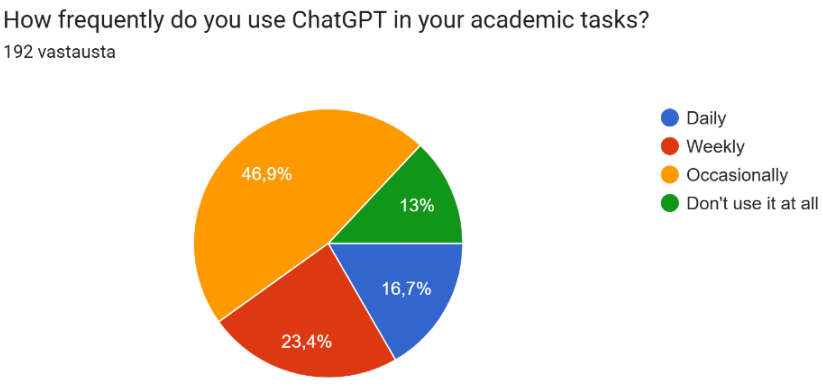

Figure 5. Frequency of ChatGPT usage in academic tasks.

Figure 6 reveals that 27.6% of respondents had encountered instances of ChatGPT misuse in academic settings, while 67.7% had not. These results highlight the importance of institutional policies to guide ethical use.

Regarding originality and authenticity, Figure 7 shows that while most respondents (48 respondents, 25%) felt ChatGPT had a minimal impact (rated two on a 1–5 scale), about 18% indicated a stronger influence (rated 4 or 5). This demonstrates varying perspectives on how ChatGPT might affect academic integrity.

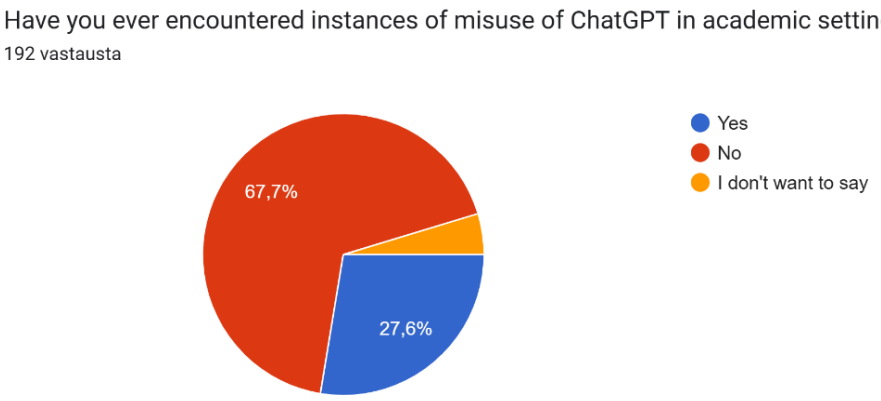

Figure 6. Instances of ChatGPT misuse in academic settings.

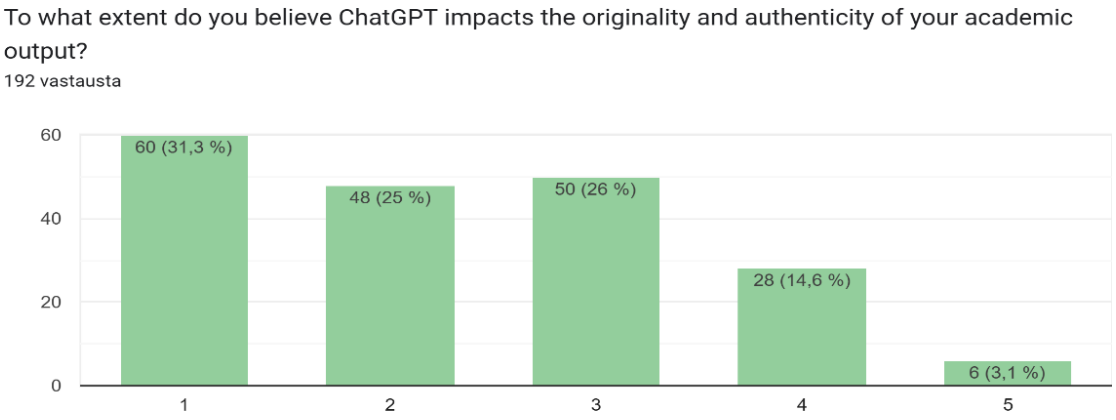

Figure 7. Perceived impact of ChatGPT on originality and authenticity (1 = no impact at all, 5= impacts very much).

The perceived influence of ChatGPT on quality and accuracy is illustrated in Figure 8. Most respondents (50 respondents, 26%) rated the impact as moderate (3 on a 1–5 scale), with fewer rating it as having a strong influence. This highlights the tool's role as an enhancement rather than a transformation in academic tasks.

Challenges with accuracy and appropriateness were reported by 63% of respondents, as shown in Figure 9. These findings underscore the importance of critical thinking and verification when using AI-generated content.

In terms of academic efficiency, Figure 10 shows that 44.8% of respondents felt ChatGPT positively influenced their productivity (rating 4 or 5).

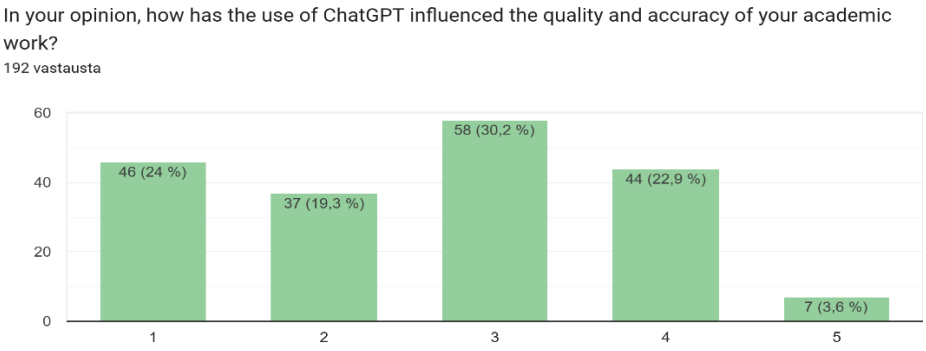

Figure 8. Influence of ChatGPT on quality and accuracy (1 = no influence at all, 5= influenced very much).

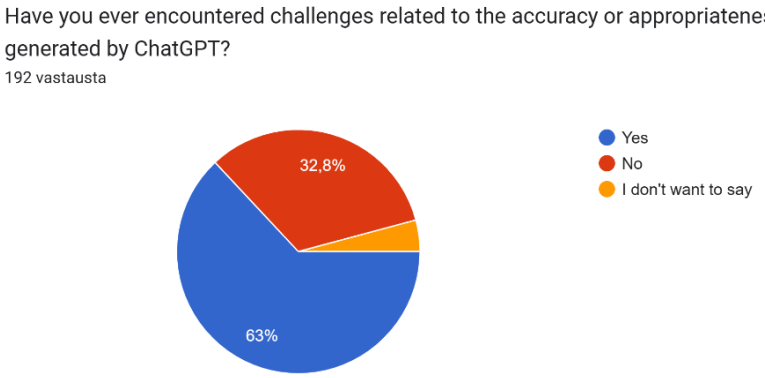

Figure 9. Challenges encountered with the accuracy and appropriateness of ChatGPT responses.

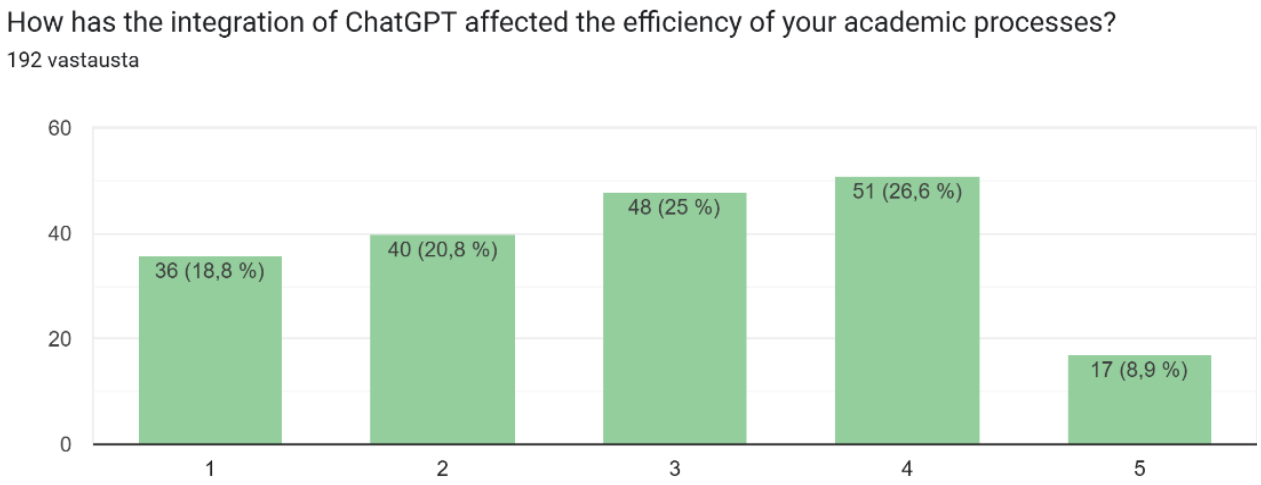

Figure 10. Impact of ChatGPT integration on efficiency of academic processes (1= no influence at all, 5= influenced very much).

Figure 11 indicates that 74% of students were satisfied with ChatGPT's integration into their academic experience, while 19.5% were dissatisfied. This high satisfaction rate reflects the tool's perceived benefits in facilitating academic tasks.

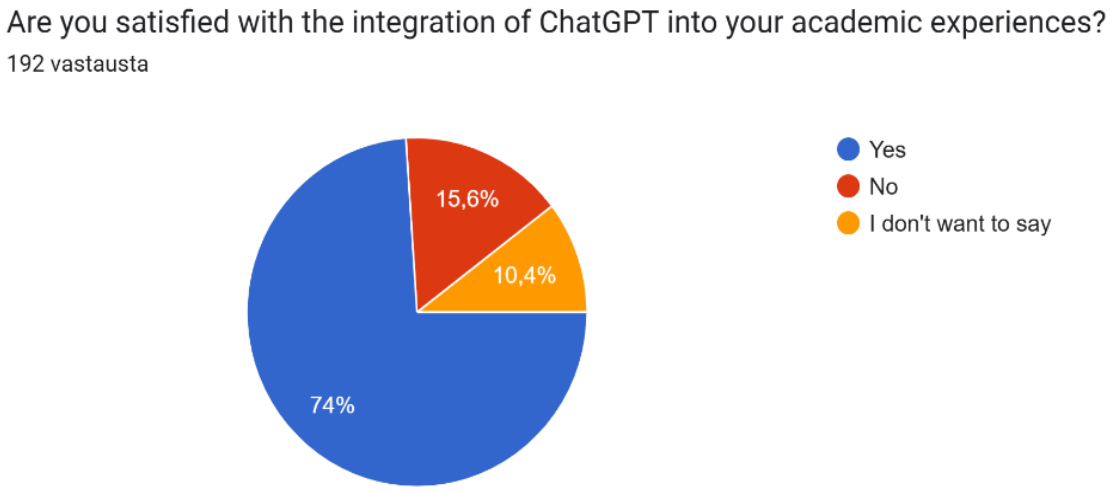

Figure 11. Satisfaction with ChatGPT integration in academic experiences.

The influence of ChatGPT on learning in virtual courses is presented in Figure 12. Most respondents (50.9%) perceived ChatGPT as positively enhancing their learning experiences, while 33.3% expressed no strong opinion. This indicates that ChatGPT is seen as a valuable resource for independent study, particularly in online and flexible learning environments.

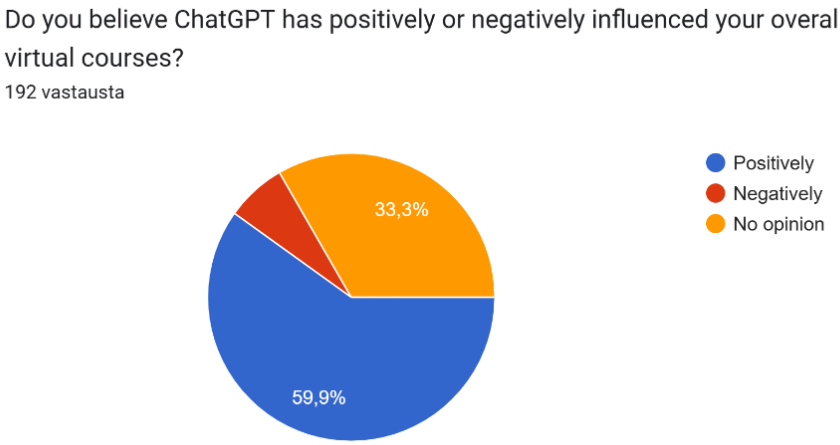

Figure 12. Perceived influence of ChatGPT on learning experience in virtual courses.

Figure 13 demonstrates that 60.9% of respondents agreed ChatGPT helps streamline academic processes, reinforcing its role in improving efficiency and accessibility for students.

Figure 13. Perception of ChatGPT's role in streamlining academic purposes.

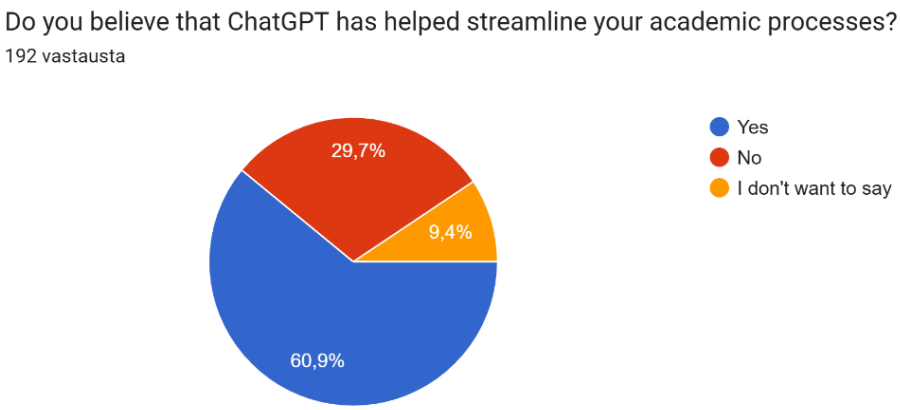

Figure 14 highlights a gap in institutional guidance: only 39.1% of respondents reported receiving feedback or instructions from educators regarding ChatGPT usage in assignments, while 57.3% did not. This lack of educator involvement highlights the need for structured guidance and training to ensure responsible AI use in academic settings.

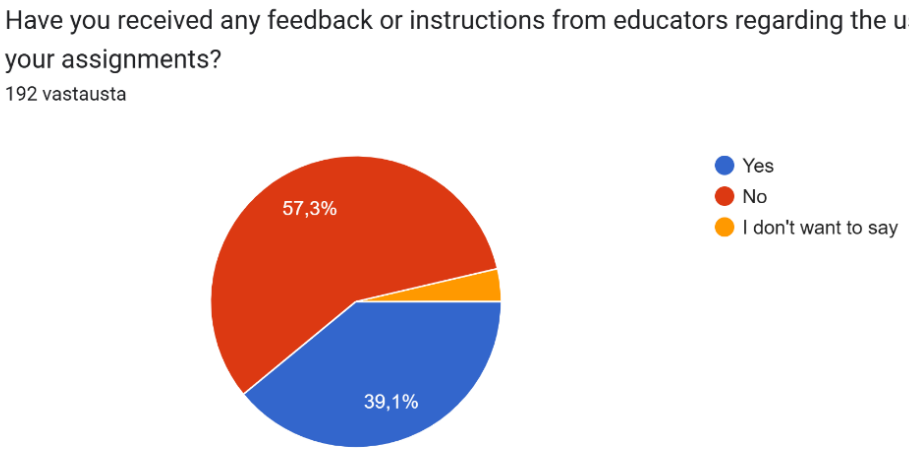

Figure 14. Educator guidance on ChatGPT usage in academic assignments.

The adaptability of ChatGPT to address academic needs is illustrated in Figure 15. A majority (77 respondents, 40%) rated its adaptability as high (rating 4 or 5), suggesting that students find the tool versatile and effective in tackling various academic challenges. However, the challenges highlighted in Figures 9 and 6 indicate that while ChatGPT offers benefits, its limitations must be acknowledged and mitigated through critical use and institutional support.

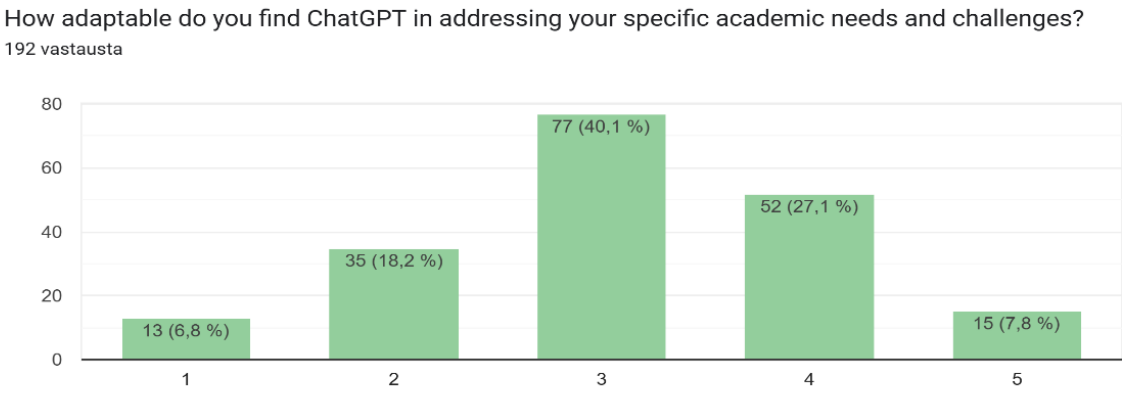

Figure 15. Perceived adaptability of ChatGPT in addressing academic needs and challenges.

The survey findings offer a comprehensive understanding of how ChatGPT is used by Master's students from Haaga-Helia University of Applied Sciences and Tampere University of Applied Sciences. The respondents, averaging 28 years of age, represent a diverse group of students across different life stages and academic disciplines. The significant proportion of students (64%) enrolled in virtual or independent study courses highlights the increasing relevance of digital tools like ChatGPT in supporting their academic routines.

ChatGPT has been widely adopted as both an academic and non-academic tool, with 72% of students reporting its use for a variety of tasks. Weekly usage (46%) was the most reported frequency, suggesting that ChatGPT has become an integral part of students' study habits. It primarily serves as a tool for summarizing information, generating ideas, and organizing content, aligning with its role as an augmentation aid under the SAMR Model (PowerSchool 2021). By streamlining routine tasks, ChatGPT enhances students' efficiency, allowing them to focus more on higher-order academic skills such as critical analysis and problem-solving.

Despite its perceived benefits, the survey revealed some reservations about ChatGPT's impact. While most students felt the tool had minimal influence on the originality and authenticity of their work, 18% expressed concerns about its potential to compromise these aspects. Ethical considerations were another area of mixed responses, with 15% of students reporting uncertainty about the appropriate boundaries for using ChatGPT in academic tasks. Additionally, 63% noted challenges related to the accuracy and appropriateness of ChatGPT's outputs, reinforcing the need for users to approach AI-generated content critically and thoughtfully.

The survey results demonstrated that respondents valued ChatGPT for its ease of use and perceived usefulness. Many respondents highlighted that the tool significantly enhanced their efficiency, allowing them to focus on higher-order academic skills such as critical analysis and problem-solving. However, concerns about over-reliance highlight the importance of balancing AI-assisted learning with independent critical thinking. These findings support the argument for structured institutional policies and educator guidance to promote ethical and responsible AI use. Without clear guidelines, the risk of misuse—whether intentional or accidental—remains a significant challenge.

These findings emphasize the growing need for institutions like Haaga-Helia and Tampere University of Applied Sciences to align their practices with Arene's guidelines (Arene 2024), which advocate for responsible and ethical use of AI in educational settings. Arene's emphasis on promoting fairness, maintaining academic integrity, and equipping students with critical digital skills highlights

the importance of clear institutional frameworks. By supporting responsible usage and addressing challenges related to originality and accuracy, educational institutions can ensure that tools like ChatGPT enhance rather than defer the learning experience.

4.2 Results of Interviews

The interviews with four educators at Haaga-Helia University of Applied Sciences provide valuable qualitative insights into the role of ChatGPT in educational settings. Through a thematic analysis of the interview data, three major themes emerged: 1) ChatGPT's perceived role in education, 2) academic integrity concerns, and 3) the need for institutional support and guidance.

Educators acknowledged ChatGPT's potential as a supportive tool in educational settings. All four interviewees highlighted its usefulness in streamlining administrative tasks such as generating example questions, preparing teaching materials, or providing students with model responses. One educator remarked, "ChatGPT saves time for repetitive tasks, which allows me to focus on more critical aspects of teaching, like engaging with students directly."

However, educators also emphasized the limitations of ChatGPT, particularly in handling distinctive and complex theoretical concepts. For example, one interviewee pointed out that while ChatGPT can assist in summarizing content or answering straightforward questions, it often struggles with deeper analysis or contextual understanding. Another educator noted, "It's good at providing a starting point, but it lacks the depth needed for higher-level academic tasks, like connecting abstract theories to real-world applications."

This theme aligns with broader discussions in the literature on AI in education, where ChatGPT is viewed as a tool that enhances productivity but does not replace critical thinking or human oversight.

The educators unanimously identified academic integrity as a significant challenge when integrating ChatGPT into academic settings. Many expressed concerns about students misusing the tool for assignments without fully understanding the material. One educator shared, "I've seen cases where students over-rely on ChatGPT and submit work that barely reflects their understanding. It's a slippery slope when it comes to maintaining originality."

To address these concerns, interviewees described strategies they have implemented to mitigate misuse. These include designing assignments that require students to incorporate personal

experiences, analyze real-world scenarios, or critically engage with theoretical frameworks—tasks that AI tools like ChatGPT cannot easily replicate. For instance, one educator explained, "I now require students to explain how they arrived at their conclusions or to provide a reflective component that demonstrates personal engagement with the material."

These strategies align with Arene's guidelines, which emphasize promoting originality and critical engagement in student work. The findings also highlight the need for clearer institutional policies to guide educators and students in navigating the ethical use of AI tools.

The interviews revealed a consensus among educators that institutions need to provide more structured support for integrating AI tools like ChatGPT into education. Several educators expressed frustration over the lack of clear policies and resources from their institution. One educator noted, "We're left to figure this out on our own, and while some of us are proactive, it's not consistent across the board."

Educators emphasized the importance of institutional frameworks that include training programs, workshops, and guidelines on AI usage in education. They also suggested that institutions should uphold a collaborative environment where educators can share best practices and learn from each other's experiences. One educator proposed, "We need a centralized platform where we can discuss challenges and share successful strategies for incorporating AI responsibly."

This theme reflects findings from the AI DRIVER! Project, which advocates for providing educators with resources and structured support to manage AI integration effectively (Haaga-Helia 2024b). Such resources could empower educators to balance the benefits of AI tools with academic standards and ethical considerations.

The thematic analysis of the interview's highlights both the opportunities and challenges associated with ChatGPT in education. Educators perceive ChatGPT as a valuable tool for enhancing efficiency and engagement but emphasize the need for careful implementation to address academic integrity concerns. The lack of institutional support emerged as a recurring issue, stressing the need for clear policies and training programs. These findings reinforce the importance of aligning AI integration strategies with broader institutional goals, such as those outlined in Arene's guidelines.

5 Discussion

This chapter discusses the key findings of the study, linking them to the theoretical framework and answering the research questions. The discussion evaluates the alignment between the results and existing literature, identifies any surprising findings, and provides recommendations for responsible AI use in education. Additionally, the quality of the research is critically assessed, focusing on whether the study met its objectives, its reliability and validity, and adherence to ethical guidelines.

5.1 Key Findings

The study aimed to explore how ChatGPT is integrated into academic settings, its perceived impact on students and educators, and the ethical considerations associated with its use. The findings reveal several key insights that align with, as well as deviate from, the theoretical framework and prior research.

The findings indicate that ChatGPT is widely adopted by Master's students as a supportive tool. Students frequently use ChatGPT for brainstorming, summarizing, and organizing content, which aligns with its role as an augmentation tool in the SAMR Model (PowerSchool 2021). As discussed in the theoretical framework, ChatGPT can enhance learning efficiency by automating repetitive or time-consuming tasks, enabling students to focus on critical analysis and higher-order thinking.

However, the survey also highlights a potential downside: over-reliance on ChatGPT may interfere in students' development of critical thinking and problem-solving skills. This concern aligns with the literature emphasizing the importance of balancing AI use with independent learning (Rahman & Watanabe 2023). Interestingly, some students expressed confidence in managing this balance, which deviates from prior studies that emphasize student dependency on AI tools (Hosseini et al. 2023). This suggests that additional research is needed to understand the varying levels of AI dependency among students.

Ethical concerns emerged as a major theme. While students value ChatGPT's utility, many expressed uncertainties about the ethical boundaries of AI use in academic work. This aligns with Arene's guidelines (Arene 2024), which stress the importance of institutional policies to promote responsible AI usage. Similarly, Hosseini et al. (2023) highlighted the risks of over-reliance on AI,

particularly regarding originality and academic integrity, which were also raised by educators in this study.

Educators expressed stronger concerns about potential misuse, such as plagiarism and over-reliance. Thematic analysis of the interviews revealed strategies to address these challenges, such as designing assignments that require personal reflection, real-world applications, or unique insights. These strategies align with the ethical recommendations discussed in the theoretical framework, emphasizing the importance of fostering originality and accountability in academic work.

One unexpected result was the high confidence among students in navigating the ethical use of ChatGPT. While some literature highlights widespread uncertainty and ethical misuse among students, a portion of survey respondents indicated that they felt well-informed about appropriate AI use. This finding suggests that institutional efforts to educate students about responsible AI use, such as those implemented at Haaga-Helia, may already be yielding positive results.

Another key finding is the significant gap in institutional support for educators. Educators described a lack of clear policies and resources to help them adapt to the integration of AI technologies like ChatGPT in their teaching practices. This aligns with other research, such as Arene's guidelines, which emphasize the critical role of structured frameworks and institutional guidance in enabling effective AI adoption in education (Arene 2024). Similarly, the findings resonate with the conclusions of the AI DRIVER! Project, which advocates for providing educators with resources and training to navigate the challenges and opportunities posed by AI tools. Without clear policies or adequate support, educators are often left to address these issues independently, potentially preventing the effective use of AI as a transformative educational tool. Addressing this gap is essential for institutions to ensure that both educators and students can be equipped with the benefits of AI technologies while maintaining academic standards and integrity.

This research aimed to address three key questions regarding the integration of ChatGPT in educational settings. 1. How do educators in the target organization perceive the integration of ChatGPT into educational environments? Educators perceive ChatGPT as a supportive tool that can enhance teaching efficiency and student engagement. However, they emphasize the importance of careful implementation and guidelines to maintain academic integrity.

2. What are the ethical considerations for students' work when employing ChatGPT in their academic activities? Ethical considerations, which were highlighted by both students and educators, include concerns about potential plagiarism, over-reliance on AI, and a lack of clarity in defining

responsible use. These findings indicate the need for institutions to develop clear policies and resources to promote ethical AI practices.

3. What impacts does ChatGPT have on the efficiency of academic workflows and the interaction between students and teachers in university settings, based on the data collected from this thesis research? ChatGPT positively impacts academic workflows by streamlining tasks such as information gathering and brainstorming, a finding supported by both students and educators. However, its influence on student-teacher interactions is mixed, with educators cautioning against overuse of AI tools that could reduce meaningful human engagement in learning environments.

5.2 Recommendations

Considering the findings of this research, several recommendations are proposed for the responsible implementation of ChatGPT in educational settings.

Universities should prioritize establishing clear policies on ChatGPT usage to provide actionable guidelines for both students and educators. These policies should specify acceptable uses of AI in academic work, such as leveraging ChatGPT for brainstorming, language enhancement, or idea generation, while discouraging its use for producing entire assignments. This recommendation reflects the educators' calls for structured support, as highlighted in the interviews, and is crucial for encouraging a responsible and ethical approach to AI integration in education. Furthermore, this aligns with Arene's (2024) guidelines, which emphasize the importance of institutional policies in ensuring ethical AI use. Similarly, Rahman and Watanobe (2023) argue that setting clear boundaries for AI usage can effectively mitigate risks such as plagiarism and over-reliance - concerns that were also raised in this study.

Universities should embrace ChatGPT as an integral educational tool rather than prohibit its use. Recognizing that AI technologies will play a significant role in future workplaces, it is essential to encourage students to develop proficiency with these tools now. Teaching students to use ChatGPT thoughtfully and responsibly will prepare them to leverage AI effectively in both academic and professional contexts. This aligns with the views of Elbanna and Armstrong (2023), who advocate for integrating AI into educational practices to equip students with the necessary skills for 21st-century workplaces. Furthermore, the SAMR Model underscores that technology, when applied at transformative levels, can enable deeper learning experiences when paired with structured

implementation (PowerSchool 2021). Universities that embrace AI in this way can ensure their students are future-ready, both academically and professionally.

Universities should revise their grading and assessment systems to accommodate the integration of AI tools like ChatGPT. Evaluation criteria should focus on assessing students' critical thinking and decision-making processes when utilizing AI tools, rather than solely judging the final output. Assignments could, for example, require students to demonstrate how they critically assessed ChatGPT-generated content or applied AI insights to solve real-world problems. This approach reflects the recommendations of Hosseini et al. (2023), who stress the importance of fostering independent thought and critical engagement while integrating AI tools. Updating assessment methods in this way ensures that grading systems remain relevant in the age of AI, encouraging students to develop advanced analytical and problem-solving skills that extend beyond traditional learning methods.

Universities must invest in professional development programs to help educators adapt to the growing presence of AI in education. Workshops and training sessions should equip teachers with practical strategies for effectively integrating AI tools into their teaching practices. These programs should also focus on designing assignments that promote originality and critical thinking, minimizing the risks of over-reliance on AI. Arene (2024) emphasizes that professional development is critical for empowering educators to navigate AI integration effectively. Similarly, the AI DRIVER! Project underscores the importance of tailored training programs in enabling educators to adopt AI tools confidently and effectively. The findings from the interviews reinforce these recommendations, as educators expressed a strong need for institutional support and resources to help them adapt to the challenges and opportunities of AI integration.

Universities should develop dedicated resources to educate students on ethical AI usage. These resources could include online tutorials, workshops, or written guidelines that emphasize the importance of academic integrity and responsible AI use. Students should be taught how to balance the benefits of AI tools with independent learning to avoid over-reliance or inadvertent breaches of ethical standards. This aligns with Arene's (2024) focus on fostering ethical practices in education and supports Rahman and Watanobe's (2023) findings, which highlight the potential misuse of AI in the absence of clear guidance. By providing such resources, universities can ensure that students are equipped to engage with AI technologies responsibly and effectively, preparing them for the ethical challenges they may encounter in both academic and professional environments.

5.3 Quality of Research

The quality of this research was ensured through proper methodology, ethical adherence, and alignment with the research objectives. Quantitative data was collected from 192 Master's students, complemented by qualitative insights from four in-depth educator interviews. Together, these data sources provided a comprehensive understanding of ChatGPT's role in academic settings.

Reliability and validity were prioritized through careful survey design and thematic analysis. The quantitative survey employed clear and structured questions to minimize ambiguity, while the qualitative interviews followed a semi-structured format to enable an in-depth exploration of themes. The triangulation of quantitative and qualitative data further enhanced validity, ensuring that findings were consistent and aligned with the research objectives. This mixed-methods approach allowed for a deep analysis of the integration and implications of ChatGPT.

Ethical standards were strictly followed throughout the research. All participants provided informed consent, and measures were taken to anonymize the data, ensuring confidentiality. Ethical guidelines from Haaga-Helia University of Applied Sciences were followed by, ensuring that the study upheld academic integrity and guarded participants' rights at all stages of the research process.

Despite its strengths, this study has limitations. The reliance on self-reported data introduces the potential for social desirability bias, where participants may provide responses, they perceive as favorable rather than fully accurate. Additionally, while the sample size of four educator interviews provided rich qualitative insights, it limits the generalizability of these findings. Future research could address these limitations by including larger samples and incorporating observational methods to complement self-reported data.

5.4 Evaluation of Personal Learning

This research has been a significant learning experience, enhancing my understanding of both academic and practical aspects of conducting a mixed-methods study. Managing the dual demands of quantitative and qualitative research allowed me to refine my skills in data collection, analysis, and interpretation. The challenges encountered during the research, such as low initial survey response rates, taught me the importance of adaptability and persistence in overcoming obstacles.

Additionally, this study deepened my understanding of the ethical and educational complexities associated with integrating AI tools like ChatGPT into academic settings. It reinforced the importance of balancing innovation with responsibility and highlighted the role of structured guidance and institutional support in facilitating AI adoption. Overall, the research process has been transformative, equipping me with skills and insights that will be invaluable in future academic and professional endeavors.

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Appendices

Appendix 1. Survey Questions for Students

- How old are you?
- What is the degree you are studying or studied?
- How many years have you been enrolled in the degree program if you are currently studying?
- What university are you studying or studied in?
- Are you currently enrolled in any virtual or independent study courses?
- Do you use ChatGPT for academic or non-academic purposes, or both?
- Have you utilized ChatGPT for academic purposes in your studies?
- How frequently do you use ChatGPT in your academic tasks?
- What types of tasks you have used ChatGPT for (e.g., research, writing, communication)?
- For what types of tasks do you primarily utilize ChatGPT in your studies? (e.g., research, writing, communication)?
- How would you rate the level of integration of ChatGPT in your academic work on a scale from 1 to 5?
- Have you ever encountered instances of misuse of ChatGPT in academic settings?
- How do you ensure the ethical use of ChatGPT in your academic work?
- To what extent do you believe ChatGPT impacts the originality and authenticity of your academic output?
- Can you describe any situations where the use of ChatGPT raised ethical concerns within your academic work or discussions?
- In your opinion, how has the use of ChatGPT influenced the quality and accuracy of your academic work?
- Have you ever encountered challenges related to the accuracy or appropriateness of responses generated by ChatGPT?
- How has the integration of ChatGPT affected the efficiency of your academic processes?
- Are you satisfied with the integration of ChatGPT into your academic experiences?
- Do you believe ChatGPT has positively or negatively influenced your overall learning experience in virtual courses?
- Do you believe that ChatGPT has helped streamline your academic processes?

- Have you received any feedback or instructions from educators regarding the use of ChatGPT in your assignments?
- How adaptable do you find ChatGPT in addressing your specific academic needs and challenges?
- Please share any additional comments or insights regarding your experiences with ChatGPT in your Master studies.
- Please share any recommendations you have for optimizing the integration of ChatGPT in virtual education.

Appendix 2. Interview Questions for Teachers

Introduction:

- Can you provide a brief overview of your role as an educator at Haaga-Helia University of Applied Sciences and your experience with virtual learning environments?

Knowledge and perspectives on ChatGPT:

- How familiar are you with ChatGPT?
- How familiar are you with the integration of ChatGPT in academic settings?
- What are your initial thoughts on the integration of ChatGPT into the academic environment at Haaga-Helia?
- In your opinion, what potential benefits does ChatGPT bring to the teaching and learning processes within virtual courses?
- Are there any concerns or reservations you have regarding the use of ChatGPT in the academic setting?
- Have you encountered instances of students using ChatGPT in their assignments?

Academic integrity:

- How do you ensure that the assignments submitted by students are their own work, considering the potential assistance from ChatGPT?
- What strategies or measures do you employ to maintain academic integrity in the presence of advanced language models like ChatGPT?
- How do you address potential challenges related to the use of AI tools in academic assessments?
- What are your views on the potential benefits and challenges associated with students using ChatGPT in virtual courses?

Impact on teaching strategies:

- How has the integration of ChatGPT influenced your teaching strategies, if at all?
- Do you believe that the presence of ChatGPT has led to any shifts in the dynamics of student-teacher interactions within the virtual learning environment?
- Have you encountered any challenges or limitations in incorporating ChatGPT into your teaching practices? If yes, please elaborate.

Educator support and training:

- Do you believe educators need additional support or training to effectively address the integration of AI tools like ChatGPT in virtual courses?
- How can the university better support educators in navigating the challenges and opportunities associated with AI in education?

Open-Ended Questions:

- Is there anything else you would like to share regarding your experiences with the integration of ChatGPT in virtual learning environments?

These questions and interview inquiries collectively seek to comprehensively understand both students' and educators' perspectives on the integration of ChatGPT in virtual education. For students, the focus is on gathering insights into the nuances of ChatGPT usage, its impact on academic work quality, efficiency, satisfaction levels, and adaptability within the academic setting. Meanwhile, the interview questions for educators aim to delve into their nuanced perspectives, addressing views on ChatGPT integration, strategies for maintaining academic integrity, impact on teaching approaches, challenges encountered, and recommendations for optimizing the integration in the context of virtual education.

Appendix 3. Example of Instructions for Teachers on the Use of Artificial Intelligence

Teachers are encouraged to provide instructions for the use of artificial intelligence as part of producing the content of the work in their own courses. The following examples serve as help. It is recommended to use as permissive a line as possible, and it should be noted that as artificial intelligence becomes part of the tools for creating works, it is challenging to distinguish the boundary between content generated by humans and content generated by artificial intelligence (Arene 2024).

The use of artificial intelligence does not need to be reported: Students can use AI to create works without notice. However, students must take good scientific practices and responsibility into account. This option is a good choice when the teacher wants to enable students to use AI freely without restrictions (Arene 2024).

The use of artificial intelligence is permitted, but it must be reported: Students are allowed to use artificial intelligence to create works, but they must clearly indicate this. The use of the AI tool can be described in the methods of the work or in the corresponding section as follows (American Psychological Association, 2020): The authors have used the ChatGPT AI tool to describe the potential of the platform economy in section 2.1. The authors have reviewed and modified the content created by the tool and assume full responsibility for the content of the work. A reference to the text produced by AI is made by referring to the tool and the version used, for example: When asked "What is the most significant challenge for the spread of the platform economy?" ChatGPT responds that it is the impact on the traditional business model and the labor market (OpenAI, 2023). In this case, if using the APA style (American Psychological Association, 2020), the following will be indicated in the references: OpenAI. (2023). ChatGPT (March 14 version) [large language model]. Available at https://chat.openai.com/chat. Referenced on 29 April 2023 This option is a good choice if you want to enable students to use AI and want to ensure that the students understand the limitations of using AI and can explain how they have used it (Arene 2024).

The use of artificial intelligence is not allowed: Students are not allowed to use artificial intelligence to create the content of works without separate permission or approval. However, artificial intelligence may be used for brainstorming, planning, and proofing. This option is good if it is not desired to allow the use of AI in a specific course or assignment, or if the teacher wants to ensure that students learn skills and knowledge manually without the ease of using AI (Arene 2024).

This document is adapted from Arene's guidelines on the use of artificial intelligence in universities of applied sciences. These instructions aim to provide educators with practical guidance on incorporating AI responsibly in teaching practices.