Gen Z's AI Perspective:

Exploring ChatGPT Usage and Trust Patterns by Comparing Technical and Social Science Students – A Qualitative Research

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Abstract

Background: With the growing integration of AI tools in education, understanding how different student groups use and trust these technologies is crucial for improving their potential benefits. This study investigates the usage and perception of ChatGPT among Generation Z students from social sciences and technical sciences.

Aim: The aim of this research is to explore the initial use, main purposes, frequency of use, trust levels, and the impact of ChatGPT on productivity and learning among social science and technical science students.

Method: Semi-structured interviews were conducted with 16 students from a single university, split equally between social science and technical science majors. The interviews explored their experiences with ChatGPT, focusing on its usage, perceived reliability, and impact on their academic work.

Results: The findings reveal distinct patterns in how social science and technical students use ChatGPT. Social science students primarily use it for text-based tasks and to save time, while technical students use it more for coding assistance and detailed information retrieval. Both groups demonstrate moderate trust in ChatGPT, influenced by the perceived reliability and accuracy of its responses. Skepticism is mainly due to concerns about accuracy, particularly for academic sources and coding outputs. ChatGPT enhances productivity and efficiency for most students, although some social science students feel it hinders their skill development, and technical students report no significant improvements in grades.

Conclusion: ChatGPT presents significant opportunities for enhancing education by saving time and assisting with complex tasks. However, its integration into academic environments must be nuanced, considering the different ways student groups use and trust the tool.

Key Words: ChatGPT, AI in education, Generation Z, social sciences, technical sciences, academic productivity, trust in AI, educational technology

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1.0 Introduction

The use of artificial intelligence (AI) increased rapidly in recent years, and has therefore influenced mostly everyone's daily life, however there is one Generation that is influenced by it the most. "Generation Z", born after 1995, consequently making them a generation that grew up using the internet more than any generation before (Dolot, 2018). When referring to a Generation, meant is, "an identifiable group that shares birth years, age location, and significant life events at critical developmental stages" (Kupperschmidt, 2000, as cited in Dolot, 2018, p. 44). Therefore, there are multiple generations, and each individual can be grouped into one generation and described differently.

Generation Z currently describes mostly students since they are between the ages of 14 and 29 which means many are still in an educational phase. As students are frequent internet users, they will most likely be affected by AI-generated content. On November 30th 2022, OpenAI introduced ChatGPT (Albayati, 2024). ChatGPT, short for "chat generative pre-trained transformer" allows users to receive AI-generated answers within seconds by only providing short input prompts (Jangjarat et al., 2023). In the first two months after launching, ChatGPT already attracted "100 million monthly active users" and still has millions of users daily (Wu et al., 2023, p. 1122). Albayati (2024, p. 1) described ChatGPT as "a large language model (LLM) that uses machine learning to learn from vast datasets of text and can produce highly sophisticated and intelligent writing." ChatGPT is not only used in private settings but can also be applied in a variety of educational settings (Loos et al., 2023). A questionnaire by Nietzel (2023) showed that out of five students, one employed ChatGPT for their schoolwork. However, while students acknowledge the benefits of ChatGPT for their schoolwork, they also identified some disadvantages such as unreliability in sources, mathematical limitations and language precision (Ngo, 2023). Additionally, this shift also questions important issues about difficulties that might result (Mehmet, 2023). Because

undergraduates can let ChatGPT write their essays for them while they present these as if written by themselves, ChatGPT displays a significant issue for educational institutions (Al, 2023). Another negative connotation to consider about ChatGPT is, as Noam Chomsky stated, that ChatGPT is used as a method of preventing studying (Noam Chomsky, as cited in Guleria et al., 2023).

Specifically, social science students consider ChatGPT to be a helpful instrument for their academic work especially because of the immediate answers to help with challenging theories (Jowarder, 2023). Additionally, Jowarder (2023) stated, that social science students have used the AI Chat to help with their preparation for coursework assessments. Engineering pupils also reported using ChatGPT in order to grasp knowledge for challenging subjects as well as for spoken exhibitions (Bernabei et al., 2023). For computer science students Singh et al. (2023) stated that ChatGPT offers useful tools for coding, which can be helpful despite involving mistakes sometimes.

While it is known that ChatGPT is used by students for their studies it is, it is unclear how they vary in their usage and trust based on their studies. Therefore, this thesis aims to explore how Generation Z students differ in their ChatGPT usage and trust based on their studies focusing on social sciences and more technical studies. Social science studies include Communication Science and Psychology Students while technical studies include a variety of different Engineering Students. This will be done by answering the following research question: *How do Generation Z students in technical versus social science studies differ in their ChatGPT usage and trust in an educational setting at the University of Twente?*

2.0 Theoretical Framework

This theoretical framework serves as a guideline in order to get a better understanding of the individual concepts of the usage of ChatGPT in education, Generation Z and their learning preferences, the acceptance of ChatGPT with a focus on the Technology Acceptance Model, and the trustworthiness in ChatGPT.

2.1 Usage of ChatGPT in Education

After OpenAI introduced ChatGPT in the end of 2022, it has found its usage in multiple different areas including the educational setting. As stated by Borji (2023), ChatGPT is so highly developed that it can produce such complex texts that make it extremely challenging to differentiate if the text was composed by an actual person or by artificial intelligence. The "pre-trained language model" works based on short inputs which then give a specific answer (Wu et al., 2023). Since May 13th, 2024, ChatGPT has offered three different versions. The regular GPT-3.5 which is free for everyone, GPT-4, and GPT-4o for 20$ per month. OpenAI (2024) itself states, that the GPT-3.5 is "great for everyday tasks", the GPT-4 is an "advanced model for complex tasks" and the GPT-4o is the "newest and most advanced model". The main benefits users have with the upgraded version are the ability to upload files, image generation, and web browsing which includes information after 2021 since the GPT-3.5 only offers information previously to 2021.

Given these features, ChatGPT can be used as a valuable tool in the educational setting. Loos et al. (2023) mentioned a few examples of how ChatGPT can be integrated by students such as that the AI chat serves as an all-time available tool to get questions answered immediately but it can also help to create material such as summarizing papers. Additionally, ChatGPT can help students with any writing tasks by proofreading for any grammar mistakes or offering advice (Aithal & Aithal, 2023). While ChatGPT is available at any given time it can serve as a personal tutor for students. A study by Ngo (2023) found that students value

the convenience and the ease of use of ChatGPT which makes it a favorable option. However, students have also reported downsides using ChatGPT. For instance, responses were imprecise or prior knowledge was necessary in order to use the application successfully (Tossell et al., 2024). Moreover, a use of ChatGPT might affect students' ability to overcome educational challenges on their own by becoming too dependent on the tool (Maita et al., 2024). This may lead to students becoming less flexible. Additionally, Maita et al., (2024) stated, that the use of ChatGPT might bring ethical concerns since students may have to deal with plagiarism and pointing out a balanced use of the AI tool.

2.2 Generation Z and their Learning Preferences

Understanding who Generation Z is, as well as their learning preferences is essential in order to adapt educational methods to better meet the needs of the technology driven individuals. Several different researchers define the age rank of Generation Z differently and most of them vary from 1990 until 2012. Seemiller and Grace (2017) identified individuals born between 1995 and 2010 as Generation Z, which is the definition that will be worked with in the following. Generation Z is the "first generation to grow up with constant access to digital technology and social media, resulting in a digital-first and technoholic mindset" (Puiu, 2017, as cited in Chan & Lee, 2023). Next to their huge access to new technologies, individuals from Generation Z have the ability to fulfill their role in the digital as well as the real world (Dolot, 2018).

Generation Z differs from other generations not only in their digitality, but also in their learning preferences. Seemiller and Grace (2017) found in their research, that Generation Z students favor self-directed learning for multiple different reasons, and through their access to technology they can use different technologies and work in their own timeline. This suggests that Generation Z prefers a different type of communication compared to other generations. Generation Z students are used to immediate and ongoing interaction since they

have grown up with online platforms used for communication all around them (Chan & Lee, 2023). Therefore, when teachers communicate with Generation Z, they must consider their favorability, to interact with them more sufficiently. Additionally, Generation Z students are interested in learning independently which has been made even more pleasant with the help of new technologies (Seemiller & Grace, 2017). Seemiller and Grace's (2017) study showed that students prefer this intrapersonal studying since it helps them to concentrate better while managing their own working times. It is important to note that Generation Z students prefer to choose, in their own pace, when they want to work with other students since they are seen as an essential asset (Seemiller & Grace, 2017) Moreover, in the study by Dolot (2018) it was found that while they are highly independent, students also greatly value input, especially from the person they receive the assignment from. Overall, Generation Z students' educational preferences are shaped by their digital background.

2.3 Acceptance of ChatGPT

Understanding ChatGPT's acceptance in the educational context is crucial for evaluating its effectiveness. Acceptance, which includes beliefs, motives, and actions regarding the innovation, represents consumers' general openness to and support of ChatGPT (Almogren et al., 2024). Therefore, the Technology Acceptance Model (TAM) can be used to describe Generation Z's acceptance of the tool for their academic paths. According to Dave (1989) there are two factors influencing ones' use of a technology: "Perceived usefulness" and "Perceived ease of use". While perceived usefulness refers to an individual deciding to either adopt or to not adopt a technology based on their perception of its purpose. Perceived ease of use describes the situation where an individual is willing to accept the technology but fears that it may take too much effort to make it work. Additionally, the perceived usefulness is influences by the perceived ease of use and therefore influenced the opinion about the technology which consequently affects the intended use (BU et al., 2021). Hence, BU et al.

(2021, p.50) stated that “technology acceptance in general derives from needs” also indicating that individuals experiencing a higher requirement are more likely to have a higher drive to use a certain technology. Additionally, BU et al. (2021) included trust in the TAM model since it is an important factor in comprehending the way trust influences individuals’ relationships and actions.

When applying the TAM to ChatGPT in an educational setting, it implies that students’ adoption of the technology depends on how easily they are able to engage with it, its ability to enhance their academic performance, and the level of trust students have towards the tool. Therefore, students who see ChatGPT as a helpful tool to complete their assignments are more likely to use it on a regular basis compared to students who find the tool difficult to use or receive unreliable outputs.

2.4 Trustworthiness in ChatGPT

The issue of ChatGPTs’ reliability especially in the educational setting is extremely complex since it involves trustworthiness, ethical considerations, and user acceptance. However, trust is a concept that can be defined in various different ways. Jones (2002, p. 226) defined a core concept of trust as the following: “trust is the outcome of observations leading to the belief that the actions of another may be relied upon, without explicit guarantee, to achieve a goal in a risky situation.” Additionally, Bailey et al. (2002) described trustworthiness out of the trustee’s point of view as how reliable they can be expected in keeping promises, especially in risky or uncertain situations. Ofosu-Ampong et al. (2023) identified through their study that students trust in ChatGPT depends on its abilities to make a choice, its availability, its ease of use and its open communication.

Essays that were written by ChatGPT were perceived as trustworthy as if written by a real person and were even seen as more engaging and readable (Huschens et al., 2023). Besides that, a study by Tossell et al. (2024) found a general trust towards ChatGPT;

however, participants mentioned that ChatGPT's responses needed prior expertise since they showed inaccuracy occasionally. While this indicates that the participants would not rely on ChatGPT for tasks itself, however, were still aware of its abilities. Compared to their opinions prior to usage, participants evaluated ChatGPT as a beneficial educational instrument (Tossell et al., 2024).

2.5 Summary

In summary, integrating ChatGPT in the educational context offers various benefits, however, it also brings challenges and risks with its use. Hence, understanding the unique learning preferences of Generation Z and applying the TAM can help with an effective and responsible use of ChatGPT. Therefore, this theoretical framework lays the foundation of the following methodology with the goal to create a technology-enhanced educational environment.

3.0 Methodology

3.1 Research Design

For this study, a qualitative study was conducted to gain insights into the participants' perspectives and provide an in-depth understanding of their behaviors and how they differ based on their studies. Through qualitative research, a researcher can let their attendees talk about their experiences communicating how they favor and sharing as much or less information as they feel comfortable with (Boeije, 2010). This gives a highly valuable representation of their views including their feelings. While qualitative research can be very adaptable, this can be used as a benefit to the study (Boeije, 2010). Since there is no study that has examined the direct comparison of technical and social science students in their behavior and trust towards ChatGPT in an educational setting, a qualitative approach highly offers discovery information (Boeije, 2010).

In order to achieve the most information-rich outcome, semi-structured interviews were chosen. Through interviews, a researcher can obtain knowledge about a specific area of discussion (Hesse-Biber & Leavy, 2011).

Additionally, the Critical Incident Technique (CIT) was employed to elicit detailed episodes of ChatGPT usage. CIT involves asking participants to recall specific incidents or events that are particularly meaningful or illustrative of their overall experience (Flanagan, 1954). This method helps to elicit detailed and concrete examples of behavior, providing valuable insights into how and why participants use ChatGPT in their studies. These critical incidents formed the basis for questions of interest during the interviews.

In this study, participants were asked to answer specific questions about a set topic, however, were still able to openly share their experiences and add information they wanted to share (Adams & Cox, 2008). The interviews lasted 30 to 45 minutes in total and included questions that were set before the interview, and more questions were created in the situation based on the participants' input.

3.2 Participants

Inclusion criteria for this study were that the participants must be part of Generation Z, must be active students and must use ChatGPT for their study regularly, which was divided on either a daily, weekly, or monthly basis. Additionally, participants were all at least second-year students in order to compare their study behavior with and without ChatGPT. Therefore, students were asked to actively compare their study behavior while using ChatGPT to when ChatGPT was not on the market yet to really get a hold of the impact the tool has on their study currently.

To make sure enough participants that met the criteria were found non-probability sampling methods were used. Therefore, snowball sampling (Goodman, 1961) was applied by first using convenience sampling (Etikan et al., 2016) to gather a small number of

participants that fit the inclusion criteria. These participants were then asked to recommend other people that would meet the requirements. Therefore, all students who participated in the interviews fulfilled the inclusion criteria and were active students at the University of Twente. The study aimed for 16 total participants, eight students of social sciences, and eight of technical studies, ranging from 19-26 years of age. Out of the eight social science students, six were in communication science, and two in psychology while out of the eight technical study participants, three participants were in electrical engineering, two in civil engineering, two in industrial design engineering, and one in mechanical engineering. For the social science students, six were female while two were male and for the technical study each four were male and female (Table 1). The participants' nationalities varied a lot including Germany, India, Ecuador, Jordan, Seychelles, United States, Austria, Turkey, and Columbia.

Table 1

Participants

Participant	**Gender**	**Age**	**Study**	**Year of Study**	**ChatGPT Version**
S1	Female	22	Communication Science	3	4.0
S2	Female	22	Psychology	3	3.5
S3	Female	22	Communication Science	3	3.5
S4	Male	23	Communication Science	3	4.0
S5	Female	22	Communication Science	3	3.5
S6	Female	22	Psychology	2	4.0

S7	Male	26	Communication Science	1 Master	3.5
S8	Female	25	Communication Science	2	3.5
T1	Male	21	Electrical Engineering	3	3.5
T2	Male	20	Electrical Engineering	3	3.5
T3	Female	23	Civil Engineering	3	3.5
T4	Female	22	Civil Engineering	3	3.5
T5	Male	22	Electrical Engineering	3	3.5
T6	Male	19	Mechanical Engineering	2	4.0
T7	Female	21	Industrial Design Engineering	3	3.5
T8	Male	24	Industrial Design Engineering	3	3.5

3.3 Interview Instruments

Based on the research question and the key concepts from the theoretical framework, an interview guide was developed. This interview guide included questions that covered the topics such as the general demographics, participants' ChatGPT usage to investigate the reasons behind and how users employ the platform, trust and skepticism to evaluate their level of trust, the effect of ChatGPTs effectiveness on participants' productivity, as well as challenges they have faced with it and the then following limitations, and the role of ChatGPT in education while also comparing the experience to traditional methods and other information sources.

While there was a preset of questions (See Appendix B), after the demographic questions however not all questions were always asked in the same order.

The theoretical framework served as a crucial guideline in forming the interview questions. Participants were asked about their initial ChatGPT use and the main purpose of their usage to analyze their motivation behind their use. This aligns with understanding the ChatGPT usage in education by exploring the practical integration of ChatGPT into their academic paths. Additionally, they were asked about their level of trust in the information provided by ChatGPT and reasons of their trust level to identify how trust and skepticism influence the adoption of ChatGPT. This was guided by ChatGPTs' trustworthiness for which questions were designed to examine the students' perceived trust and skepticism as well as their reasoning towards it, and how these factors influence their adoption of the tool. Determining the frequency of their use was crucial for analyzing dependency of ChatGPT but also to figure out to what extend they include ChatGPT in their academic routine. For this, TAM concepts were incorporated to explore how perceived ease of use and perceived usefulness impact students' acceptance and use of ChatGPT regularly. A question about their

non-educational ChatGPT usage was asked to investigate how ChatGPT was integrated into participants' lives since Generation Z students are known to be very technology driven.

Questions about specific incidents with ChatGPT referred to the Critical Incident Technique. They point out the circumstances that influence the use while emphasizing the usefulness of application. Additionally, they offer insights on how certain encounters influence people's impressions. This technique enables comprehensive information on ChatGPTs' usefulness and reliability.

Certain questions regarding participants' searches were used to gather information on specific examples where they have used ChatGPT, while questions about experiences identify the strength and weaknesses of the language model.

Finally, questions including any applications related to educational use were asked to understand the impact of ChatGPT on their educational experiences, including comparisons to other information sources, impact on grades and study behavior in general. This can be connected to the ChatGPT usage in education to explore how the tool enhances students' academic performance.

All questions provided a comprehensive investigation of the respondent's experiences using ChatGPT and providing an in-depth understanding of ChatGPTs' function, its limitations, and the influence on the educational context.

3.4 Procedure

The first set of questions was designed to gather general information about the participants such as nationality, age, gender, study subject, and year of study. This ensured that all participants met the inclusion criteria and offered a broad view of the ways in which various backgrounds affect the usage and perception of ChatGPT.

As part of the consent procedure, before any of the interviews started, an ethical approval form of the University of Twente BMS ethics committee was obtained. The

participants received all necessary information about the study and were able to ask further questions if needed. They were informed that if they are interested, they can reach out to the researcher to be informed about the outcome of the study. Before the interview started, all participants were given oral informed consent and agreed to participate as well as being voice recorded. They were informed about the anonymization process, the voice recording, and the timeline for the data deletion. Lastly, it was clearly stated that participants could quit the interview at any given time without further explanation or skips questions they felt uncomfortable with.

In order to get participants to speak about any specific incidences they have had with ChatGPT either in the past or referring to the last conversation, Critical Incident Technique was applied. Therefore, students really had to think about a specific incident they have had with ChatGPT and were additionally asked to think about the effect on their productivity through using the tool. Questions regarding CIT referred to any incident in which participants had a positive effect on their productivity. This could either be the last time they used ChatGPT, or if this had no effect, then they were asked to think about the last time the tool had a positive effect on their productivity. This technique served as an important start to get participants to think about their usage more in depth.

3.5 Analysis

To get useful information out of the interviews the recorded audio files were transcribed using the Amberscript software. Since participants were not asked for a name or any other personal information nothing had to be deleted. Afterwards, the transcripts were coded using ATLAS.ti. Before starting the coding process, the researcher made sure to be familiar with the transcriptions by reading them multiple times. Then, the coding process started for which an inductive process was used to create a codebook (Linneberg &

Korsgaard, 2019). Therefore, several main and sub-codes were developed in order to analyze the data.

The first main code *Usage and Purpose of ChatGPT* includes six sub-codes which examine various aspects users' interactions with ChatGPT. To get a better understanding of the motivations of the participants' ChatGPT use, the first sub-code *Initial Use* refers to when and why participants first used ChatGPT. *Main Purpose* describes the primary reason for using ChatGPT indicating the primary features users find worthwhile. *Frequency of Use* indicates how often participants use ChatGPT to get a general overview of their usage frequency. *Specific Examples* refers to any specific instances in which ChatGPT was used. *Non-educational Use* indicates any other areas in which ChatGPT was used to explore its flexibility. Lastly, *Chat Use* describes how the conversations with ChatGPT usually goes for participants to get insights into their interaction structures.

Table 2

Usage and Purpose of ChatGPT

Main Code	**Sub-codes**	**Definition**	**Example**	**Krippendorff's alpha**
1. Usage and Purpose of ChatGPT	1.1 Initial Use	Refers to when and why participant first used ChatGPT.	"I started using it in the middle of the second year."	0.861
	1.2 Main Purpose	Refers to the primary reason for using ChatGPT.	"I mainly use it to get ideas."	

1.3 Frequency of Use	Refers to how often the participant uses ChatGPT.	"I would say daily."
1.4 Specific Examples	Refers to specific instances where ChatGPT was used.	"I used it to write an informed consent."
1.5 Non-educational Use	Refers to other areas where ChatGPT was used.	"My friend used it to plan our travel route."
1.6 Chat Use	Refers to how the conversation with ChatGPT is going.	"Usually, I open new chats because my chats are more about kind of specific niche topics and not all about the same."

The second main code *Trust and Skepticism* examines participants trust in ChatGPT. The first sub-code *Level of Trust* is a quantitative evaluation of the participants' levels of trust

towards ChatGPT ranging from 1 to 10. *Reasons of Trust* refers to reasons why participant's trust ChatGPT in order to describe the quantitative approach in a positive manner while *Reasons of Skepticism* describes why participants are skeptical towards the language model. *Guilt* indicates the participants guilt towards their ChatGPT usage since it might affect how they perceive as well as use ChatGPT.

Table 3

Trust and Skepticism

Main Code	**Sub-codes**	**Definition**	**Example**	**Krippendorff's alpha**
2.0 Trust and Skepticism	2.1 Level of Trust	Refers to how much participant trusts ChatGPT on a scale from 1-10	"Like a six."	0.803
	2.2 Reasons of Trust	Refers to reasons of participants' trust in ChatGPT.	"Because it's real, it works."	
	2.3 Reasons of Skepticism	Refers to why participant is skeptical of ChatGPT.	"I would never ask it for any medical or life-depending information."	

	2.4 Guilt	Refers to participants guilt towards ChatGPT usage.	“Absolutely not.”

Productivity and Effectiveness is the third main code and describes the overall impact of ChatGPT on the participants’ academic work. *Impact on Productivity* refers to how ChatGPT affects the participant’s productivity emphasizing both advantages and disadvantages. *Quality of Work* indicates the perceived impact of ChatGPT on participants’ quality of to grasp the impact on grades in their academic study. *Task Completion* explains any specific tasks that were completed more effectively with the help of ChatGPT highlights the usefulness of the platform. The last sub-code *Dependency and Laziness* refers to whether ChatGPT has led to a dependency or reduced effort in the participants’ study.

Table 4

Productivity and Effectiveness

Main Code	**Sub-codes**	**Definition**	**Example**	**Krippendorff’s alpha**
3.0 Productivity and Effectiveness	3.1 Impact on Productivity	Refers to how ChatGPT affects the participant’s productivity.	“It made me less productive because I should have done it myself.”	0.855
	3.2 Quality of Work	Refers to perceived impact of	“On my grades, I wouldn't say as much.	

	ChatGPT on the quality of participant's work.	Maybe. Probably like a point one somewhere."
3.3 Task Completion	Refers to specific tasks that were completed more effectively with ChatGPT.	"It gave me an informed consent form."
3.4 Dependency and Laziness	Refers to whether ChatGPT has led to a dependency or reduced effort.	"It made me way more lazy."

The fourth main code *Challenges and Limitations* discusses the problems and restrictions related to the ChatGPT use. *Information Accuracy* indicates any issues with the reliability of the information provided by ChatGPT, while *Limitations and Functionality* refer to any functional limitations ChatGPT must highlight areas where the tool is inadequate. *Comparison with other Information Sources* explains the explicit comparison of ChatGPT's responses to other Information sources and Instructors which allows one to assess the usefulness of the platform. *Experiences* include any positive or negative experiences

participants' have had while using ChatGPT to see any patterns of strengths and weaknesses of the program.

Table 5

Challenges and Limitations

Main Code	**Sub-codes**	**Definition**	**Example**	**Krippendorff's alpha**
4.0 Challenges and Limitations	4.1 Information Accuracy	Refers to issues with the accuracy of information provided by ChatGPT.	"It gave me a source that it made up."	0.897
	4.2 Limitations in Functionality	Refers to functional limitations of ChatGPT.	"The normal ChatGPT-3.5 has its limitations in a sense like you can't put in a PDF."	
	4.3 Comparison with other Information Sources	Refers to how ChatGPTs' responses compare with other information	I would rely more on what the University gives us.	

	sources and instructors.		
4.4 Experiences	Refers to positive or negative experiences participants' have had with ChatGPT.	I guess the biggest negative for me was usually when I'm trying to find stuff, it limits me to 2021.	

Lastly, the main code *Perception of ChatGPT's Role in Education* describes views on how ChatGPT has changed the education process of the participants. *Educational Enhancement* highlights its advantages to get an overview of the positive impact of ChatGPT in an educational context. *Impact on Learning Style* describes how ChatGPT has influences different learning styles to demonstrate the platforms adaptability. *Capabilities* refers to the most valued capabilities that ChatGPT brings with in to analyze what students value most about the platform.

Table 6

Perception of ChatGPTs' Role in Education

Main Code	**Sub-codes**	**Definition**	**Example**	**Krippendorff's alpha**
5.0 Perception of ChatGPTs' Role in Education	5.1 Educational Enhancement	Refers to views on how ChatGPT enhances the	"Like for things that you can't do with Google."	0.946

	educational experience.	
5.2 Impact on Learning Style	Refers to how ChatGPT influences different learning styles.	"I would say yes, in that sense that it's easier to get to the information that you need and easier to kind of decide which information is useful and which is not."
5.3 Capabilities	Refers to most valued capabilities of ChatGPT	"Just general summarizing."

Before coding all 16 interviews, 10% of the interviews were coded by the researcher as well as another researcher to assure reliability. This was done by calculating the Krippendorff's alpha for each of the five main codes, which gives a number between 0 and 1, while 1 indicates a perfect agreement. Krippendorff's alpha was used since it is stronger than other calculations (Stewart, 2024). For the first main code there was a Krippendorff's alpha of 0.861, for the second, 0.803, for the third, 0.855, for the fourth, 0.897, and lastly for the

fifth, 0.946. Since the alpha for each main code was always above 0.8, a reliable intercoder agreement was found and the coding process continued.

4.0 Results

4.1 Usage and Purpose of ChatGPT

The analysis of the usage and purpose of ChatGPT explored multiple reasons and frequencies of their usage. All students started using the tool between the publication in November 2022 and September 2023. Ten participants, evenly split between social science and technical students, revealed using ChatGPT out of curiosity and influenced by social media or friends. The remaining six participants mentioned other initial usage reasons such as university project, for an internship, being short on time, needing basic definitions, or general assistance. Overall, the majority of students had no identifiable goal the first time they used ChatGPT while a minority waited to engage with the program until needed. While the main purpose of the participants' usage for technical students varied substantially, social science students showed an overall consensus. Social science students mentioned: "*The main purpose is spending less time for what I have to do."* Technical students mentioned using ChatGPT for coding and understanding things better. Additionally, they have used the tool to translate documents.

Regarding the frequency of use, social science students overall use the model more frequently since three participants mentioned a daily use, two participants used it multiple times a week, and the remaining three indicated using it weekly. On the other hand, only two technical students mentioned a daily use, while five mentioned a weekly use, and one student indicated using it twice or three times a month.

Table 1

Usage and Purpose of ChatGPT

Social Science Students	Technical Science Students
• Curiosity, university projects, internship • Ease of life, timesaving, confirming own knowledge, get inspiration and ideas • Daily (N=3), multiple times a week (N=2), weekly (N=3) • New chat for a new topic • Detailed prompts for specific answers	• Curiosity, time constraints, basic definitions • Finding information, understand things better, translation, coding assistance • Daily (N=2), weekly (N=5), two to three times a month (N=1) • New chat for a new topic • Majority uses long prompts

4.2. Trust and Skepticism

The levels of trust within both groups gave a mean trust level of 6.06 on a 10-point scale, and a median of 6.5. For the social science students, the levels of trust ranged from 3 to 8 (SD = 1.72), whereas for the technical students, the trust level varied from 2.5 to 8 (SD = 1.65).

One social science student indicated their trust based on "*fact checking"* while another student stated that they trust ChatGPT as much as they trust Google. In addition to that, another student mentioned that they trust ChatGPT since the information is taken from the internet. Most participants indicated that they only use ChatGPT for inspiration or for giving them structure and do not necessarily need to trust that information. One participant stated: *"I use it as a tool rather than a brain."*

Overall, social science students said they trust the information provided by ChatGPT based on their own knowledge and whether things make sense or not. Furthermore, a student added that: *"if it's a very generalizable topic that there is a lot of information about it, the likelihood of the topic being correct by ChatGPT is also very big."* Another student said the answers ChatGPT gives are overall standardized and include things that can be easily checked.

On the other hand, technical science students trust ChatGPT for other reasons. A participant mentioned: *"I tend to trust it with coding, especially because if it doesn't provide me with the 100% accurate answer that provides me with the basis that I can work upon."* However, the participant also indicated trusting based on what makes sense to them. Similarly, a participant believed their trust depends on how plausible the answer provided by ChatGPT is.

However, both groups expressed skepticism towards ChatGPT, especially about its accuracy with calculations and scientific sources. Overall, social science participants mentioned that their trust in ChatGPT depends significantly on the topic they are researching, hence one participant argued they would never ask ChatGPT for any essential life information. Additionally, students mentioned receiving summaries by the tool that were missing important details.

The overall feeling of guilt towards their ChatGPT usage was clear for social science students. None of the eight participants felt guilty about using ChatGPT; one even asked "*why would I? It's a tool to be used."*, yet two technical students indicated occasional quilt since they believed they should be able to find the information on their own.

Table 2

Trust and Skepticism

Social Science Students	Technical Science Students
• Mean trust of 6.06. • Fact-checking, inspiration, structure, trusting based on own knowledge. • Healthy amount of skepticism. • Not asking for scientific sources, received inaccurate summaries. • None felt guilt.	• Mean trust of 6.06. • Coding, trusting based on sense-making. • Contractionary information led to higher skepticism. • Not asking for scientific sources, received inaccurate summaries and equations. • Two participants felt occasional guilt.

4.3 Productivity and Effectiveness

ChatGPTs' impact on productivity and effectiveness varied among both groups. Through the use of the Critical Incident Technique, positive experiences regarding productivity were highlighted. The majority of participants indicated an increase in their productivity due to saving time or getting inspiration for a starting point. However, only one social science student indicated an impact on their quality of work, including their grades. They indicated saving so much time with the help of ChatGPT that they have time to focus on the qualitative work and therefore, work more effectively. The majority of social science participants mentioned only realizing an impact on how they work rather than the results, including working more efficient. One participant even recognized a negative impact of the tool:

"I think it has a negative impact on my grades, actually, because I think I rely too much on it, and it makes it easy to just be like, okay, I'm going to use it. And then, I do it like two days before because I know I'm going to get a lot of input from ChatGPT."

Technical students similarly indicated no noticeable improvement on their grades, except saving time. Both groups reported completing tasks more efficiently with the help of ChatGPT through summarizing literature or coding.

"If you're just in a rush, then you just put it into ChatGPT, summarize it, and then it takes five minutes instead of 20 to read it. So, it's like really time efficient, I would say."

However, perceived laziness was indicated higher among social sciences students (N=6) compared to technical students (N=3). One social science student indicated a certain dependency on the tool since still being able to do tasks without ChatGPT, but feeling as if they would struggle more with starting the task.

Table 3

Productivity and Effectiveness

Social Science Students	**Technical Science Students**
• 7 felt more productive; 1 felt less productive. • Mostly no improvement on grades; 1 positive impact; 1 negative impact. • Impact on way of work through saving time. • Help for coding, essays, and summaries. • 6 felt lazier	• 7 felt more productive; 1 felt slowed down by their use. • No significant grade improvement. • Quicker task completion. • 1 saved time by receiving a reliable scientific source. • Help for conclusion part of essays. • 3 felt lazier

4.4 Challenges and Limitations

For the information provided by ChatGPT being accurate multiple students mentioned occasions of receiving inaccurate information. The majority of social science students mentioned unreliability when asking ChatGPT for academic sources, with one participant receiving the DOI of a source that ended up not existing. Additionally, it was mentioned that ChatGPT can only provide information about notable topics, one explicit example mentioned was statistical information. Moreover, a participant indicated using ChatGPT to help writing an essay and as a result receiving feedback stating the information was too vague.

In contrast, a technical student revealed ChatGPT lacking accuracy regarding coding, indicating an accuracy of 70-80%, which is insufficient for long codes. Only one technical participant stated the information provided by ChatGPT being overall accurate, however, vague. Additionally, they stated the information contradicts itself occasionally. Similarly, to social science students, multiple participants mentioned receiving inaccurate sources.

Students from both study subjects indicated the tool gave too much unnecessary information as well. More functional limitations included unrealistic image creation, difficulty in understanding prompts, and dissatisfaction with the language ChatGPT uses by social science students:

"*Sometimes the language that it uses is too professional. I don't know, like, it really sounds like no real human would write something like that. […] ChatGPT brings it on another level. Like every word is not a normal word a person would use."*

Outdated information for the 3.5 version, which only includes data until 2021, was a crucial limitation for both groups. Additionally, technical students indicated dissatisfaction with complex calculations and physics questions, as well as getting the coding wrong.

Students indicated having compared information provided by ChatGPT with other information sources. While a social science student mentioned that ChatGPT is more

beneficial for asking very precise questions, while Google serves more conveniently found answers. Similarly, a technical student replied saying that it takes longer to find answers on Google than ChatGPT. Multiple social science students have reported comparing the results they received from ChatGPT to Google based on background knowledge or sensing ChatGPT provided a wrong answer. Another social science student mentioned ChatGPTs' answers being a lot more general than information from an academic source. Multiple technical students have compared the information provided by ChatGPT with different information sources and reported either similar outcomes or the other source being more correct. However, one participant mentioned ChatGPT providing additional information:

"The academic resource didn't state all of the information. And so ChatGPT filled the gap. But because you didn't know that there was additional information, you might think that ChatGPT is wrong."

Participants revealed positive as well as negative experiences, while positive experiences included summarizing as well as generating texts and solving coding errors. Negative experiences included receiving too vague or incorrect information and math issues.

Table 4

Challenges and Limitations

Social Science Students	**Technical Science Student**
• Unreliable academic sources, vague textual information. • Overly professional language, difficulty understanding prompts, outdated information (until 2021). • Compared information to Google, more general than academic sources.	• Inaccurate coding information, contradictions, vague information. • Outdated (until 2021) or excessive information, calculation issues. • Similar outcomes to other sources, sometimes even more correct, additional information.

• Efficient summarizing, generating ideas, solving coding issues.	• Good for coding, more beneficial than Google.

4.5 Perception of ChatGPTs' Role in Education

Overall, both groups of students perceive ChatGPTs' role as positive in impacting their academic studies. However, social science students report enhancements especially in saving time which therefore reduces their stress levels, as well as getting help for writing essays and inspiration.

"I do think that it has improved my stress levels because I feel way less stressed because I know in the end, I can do it with ChatGPT. If I don't make it myself, I can do it and it will be fine. I will pass the essay or whatever. Like it will save me much time and it's fine."

In order to improve their academic work, they use it to structure their work, preparing for exams by getting practice questions, finding information, and improving their grammar. In addition, a student mentioned maximizing their use of ChatGPT in order to minimize their time spend on the work that needs to be done.

Technical students mostly use ChatGPT for coding, understanding complex topics, and grasping inspiration which led to saving time. Additionally, it was indicated using information from ChatGPT as a starting point to get a feeling about the topic or using the tool for writing by using a rewriting tool before pasting the text into the assignment. One participant mentioned an increase in their self-confidence by stating: *"I know that I can solve pretty much anything."*

Both groups reported appreciation for immediate feedback, its general availability, and additionally the fact it remembers information throughout the chat. Social science students specifically have mentioned the fact that the tool can summarize anything they ask for. One participant appreciates the numerical tool as well as the coding.

Technical students highly appreciated capabilities such as the tools creativity and its input on ideas. Participants also mentioned the coding tool, as well as the summarizing tool. Additionally, a participant using the premium version appreciated being able to upload files a lot.

Table 5

Perception of ChatGPTs' Role in Education

Social Science Students	Technical Science Students
• Enhancing essays, saving time, reducing stress. • Structure work, exam preparation, improving grammar, finding information. • Immediate feedback, general availability, memory of the chat, summarizing, coding.	• Coding, definitions, clarity, saving time. • Inspiration, information for starting points, increase in self-confidence. • Immediate feedback, general availability, memory of the chat, coding assistance, creativity.

5.0 Discussion

5.1 Main findings

The goal of the study was to compare ChatGPT usage and trust patterns among technical and social science students by answering the research question: *How do Generation Z students in technical versus social studies differ in their ChatGPT usage and trust in an educational setting at the University of Twente?*

The findings highlighted distinct differences as well as similarities between the two groups that will be presented in the following section.

Generally, the results showed that social science students overall use the tool more frequently compared to technical students. However, both groups indicated a moderate level of trust in ChatGPT, with a mean trust level of 6.06 on a 10-point scale, nevertheless, the reasons of their trust had various different reasons. Social science students' trust was typically context dependent, and based on prior knowledge, while technical students tend to trust based on sense-making.

Social science students highlighted an impact on the way they work by saving time through using ChatGPT, although the majority felt lazier due to their frequent use. Additionally, they indicated that ChatGPT uses an overly professional language. Technical students on the other hand focused more on the numeric aspect, therefore reporting calculation issues, however, valuing coding assistance.

Both groups reported appreciation for ChatGPTs' immediate feedback, the general availability, the memory of the chat during a conversation, as well as coding assistance. Additionally, social science students value ChatGPTs' summaries, while technical students overall mentioned a high usage and appreciation for coding assistance.

The main findings from this study show significant insights into how students in technical and social sciences differ in their trust patterns and usage of ChatGPT in an educational setting. Reflecting on these findings through connecting this to the previously presented literature provides a deeper understanding of these patters.

The study found that social science students' use ChatGPT frequently to help with any writing assignments, to structure their work, and for exam preparations. These findings align with Jowarder (2023), who reported that social science students see ChatGPT as a helpful tool for their academic work, especially for assignment preparations. Additionally,

Jowarder (2023) found that they appreciate ChatGPTs' quick responses which was mentioned multiple times in this study as well. Generally, social science students use ChatGPT very frequently to reduce stress and save time which can be linked to Generation Zs' learning preferences. These learning preferences were reported by Seemiller and Grace (2017) by stating that Generation Z prefers technology-enhanced and self-directed learning. ChatGPT fits well within these preferences by providing structured information, helping with exam preparations, and providing quick access to summaries.

In contrast, technical sciences students overly used ChatGPT for coding assistance, understanding complex concepts, and for inspiration. Especially often mentioned was using ChatGPT for coding, however, limitations within this process were mentioned. This aligns with Singh et al. (2023) findings that highlighted that computer science students use ChatGPT for coding assistance, which can be helpful despite involving mistakes sometimes. In regard of understanding complex concepts, Bernabei et al. (2023) similarly reported that engineering students frequently use the tool to gain knowledge for challenging topics. These differences in usage patterns highlight how the different academic subjects of each group shape the way the students interact with ChatGPT.

Considering students' trust in ChatGPT, both groups indicated a moderate level of trust in the tool, however, the reasons of their trust, as well as skepticism differed significantly. Social science students reasoned their trust based on their own prior knowledge and dependent on the context, suggesting a careful validation of the information based on what they already know which aligns with findings by Tossell et al. (2024). Therefore, their skepticism is based on their reliance for precise textual information for assignments, in which mistakes may have significant impacts. Especially in regards or trusting ChatGPT for writing assignments, social science students indicated a frequent use for these types of assignments, as well as partially using exactly what ChatGPT wrote. This aligns with Huschens et al.

(2023) findings that ChatGPTs' essays were perceived as so trustworthy as if written by a human.

This study especially uncovered a significant distrust towards scientific sources reported by ChatGPT. This aligns with Almogren et al. (2024), who highlighted the importance of reliability and accuracy in accepting AI tools in the educational context.

Contrasting, technical science students' trust was overall based on sense-making and practical verification. Their trust in ChatGPTs' coding assistance suggests that they rely on the tool for assignments where they are able to directly check the outcomes for its rightness. This aligns with Bernabei et al. (2023) highlighting that engineering students rely on ChatGPT mostly for practical implications. However, they also indicated skepticism towards the tools coding since mistakes were found occasionally that require careful verification. These findings are similar to the findings by Tossell et al. (2014), who reported that ChatGPTs' answered showed inaccuracy occasionally.

Both groups trust can be explained through the Technology Acceptance Model. According to this model, perceived ease of use and perceived usefulness are crucial when adopting a technology (Davis, 1989). While social science students perceive ChatGPT as useful for time saving on assignments and exam preparations, this perceived usefulness has a direct influence on their ChatGPT acceptance. Since students' have a need for reliable and accurate information, the perceived ease of use might be limited, however, they have underlined an appreciation for ChatGPTs' easy use and accessibility. Their skepticism towards the tool ensures they verify the information provided with their own knowledge, which corresponds with the model's emphasis on the influence of perceived ease of use by the need for accurate information. In contrast, technical students have a high need for practical benefits for their coding problems which significantly influences their trust and acceptance of the tool. BU et al. (2021) suggested the integration of trust into the TAM,

offering a deeper understanding of how trust affects individuals to accept a technology. Therefore, when ChatGPT provides reliable and useful information that improve their assignments, trust is built.

5.2 Limitations and Further Research

The study only faced the limitation that some participants may not have been feeling comfortable enough to openly express all their thoughts during the interviews and therefore potentially not offering all the information that could have provided deeper insights into their ChatGPT usage and trust patterns.

This study can be used as an input for future quantitative studies such as surveys or experiments. A quantitative research method can provide a more robust analysis of ChatGPT usage and trust patterns through surveys, trust and usage can be measure on a larger scale, allowing for statistical analysis. Additionally, further research could investigate students' ChatGPT perception from the beginning of their usage, therefore exploring how trust and usage changes over time. A longitudinal study could also investigate the effects ChatGPT usage has on academic results, such as dependency. Lastly, future studies could explore whether Generation have an effect on ChatGPT usage and trust patterns, by comparing Generation Z to older Generations, exploring the differences.

5.3 Practical Implications

The findings of this study have several practical implications. Educators can tailor their teaching strategies to incorporate ChatGPT effectively, considering its strengths and limitations. For instance, using ChatGPT for generating ideas and providing quick feedback can enhance student learning. Institutions should develop clear policies and guidelines for the ethical use of ChatGPT in academic settings to prevent misuse and ensure academic honesty. Furthermore, investing in training programs for students and educators on how to use

ChatGPT responsibly and effectively can maximize its educational benefits. For developers, the findings highlight the importance of improving ChatGPTs' accuracy for information. By enhancing the academic sources and accurate coding assistance the trustworthiness of the tool can be improved.

6.0 Conclusion

This study investigated how Generation Z students from technical and social sciences at the University of Twente differed in their ChatGPT usage and trust patterns in an educational setting. The qualitative approach of semi structured interviews was particularly useful since it offered a deep understanding of the participants insights. The findings show that social science students use ChatGPT more frequently and overall, for more text-based assignments, primarily to save time, while technical students used the tool more for coding, mathematical questions, and to understand complex concepts. Social science students also mentioned using ChatGPT for coding if needed. Despite their use, they indicated skepticism towards the coding assistance underlining the need for practical verification. Both groups indicated a moderate level of trust, neither group trusting the tool more or less than the other. Hence, the reasons of trust differed since social science students based their trust on prior knowledge, while technical students based it on practical verification. The results overall align with the Technology Acceptance Model TAM, which emphasizes perceived usefulness and ease of use.

Both groups indicated various limitations of the tool, nonetheless, still appreciating capabilities, leading to a continuation of use. However, the study highlights the need for the AI tool to improve in accuracy and reliability, especially for academic sources to better serve students' needs. In conclusion, this research shows that while both student groups find

ChatGPT beneficial, their use and trust patterns completely vary based on their academic needs.

References

Adams, A., & Cox, A. L. (2008). Questionnaires, in-depth interviews and focus groups. In *Cambridge University Press eBooks*(pp. 17–34). https://doi.org/10.1017/cbo9780511814570.003

Aithal, P. S., & Aithal, S. (2023). Application of CHATGPT in Higher Education and Research – A Futuristic analysis. *Zenodo (CERN European Organization for Nuclear Research)*. https://doi.org/10.5281/zenodo.8386867

Al, J. J. H. E. (2023). Exploring the ethical considerations of using Chat GPT in university education. *Periodicals of Engineering and Natural Sciences*, *11*(4), 105. https://doi.org/10.21533/pen.v11i4.3770

Albayati, H. (2024). Investigating undergraduate students' perceptions and awareness of using ChatGPT as a regular assistance tool: A user acceptance perspective study. *Computers and Education. Artificial Intelligence*, *6*, 100203. https://doi.org/10.1016/j.caeai.2024.100203

Almogren, A. S., Al-Rahmi, W. M., & Dahri, N. A. (2024). Exploring factors influencing the acceptance of CHATGPT in Higher Education: A Smart Education Perspective. *Heliyon*, *10*(11), e31887. https://doi.org/10.1016/j.heliyon.2024.e31887

Bailey, B. P., Gurak, L. J., & Konstan, J. A. (2002). Trust in Cyberspace. In *Human Factors and Web Development*. https://orchid.cs.illinois.edu/publications/bailey-lea-trust.pdf

Bernabei, M., Colabianchi, S., Falegnami, A., & Costantino, F. (2023). Students' use of large language models in engineering education: A case study on technology acceptance, perceptions, efficacy, and detection chances. *Computers and Education. Artificial Intelligence*, *5*, 100172. https://doi.org/10.1016/j.caeai.2023.100172

Boeije, H. (2010). *Analysis in qualitative research*. http://ci.nii.ac.jp/ncid/BB00196082

Borji, A. (2023). A categorical archive of ChatGPT failures. *arXiv (Cornell University)*. https://doi.org/10.48550/arxiv.2302.03494

BU, D., BO, O., NN, S., & SO, U. (2021). Integrating Trust into Technology Acceptance Model (TAM), the Conceptual Framework for E-Payment Platform Acceptance. *British Journal of Management and Marketing Studies*, *4*(4), 34–56. https://doi.org/10.52589/bjmms-tb3xtkpi

Chan, C. K. Y., & Lee, K. K. W. (2023). The AI generation gap: Are Gen Z students more interested in adopting generative AI such as ChatGPT in teaching and learning than their Gen X and millennial generation teachers? *Smart Learning Environments*, *10*(1). https://doi.org/10.1186/s40561-023-00269-3

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *Management Information Systems Quarterly*, *13*(3), 319. https://doi.org/10.2307/249008

Dolot, A. (2018). The characteristics of Generation Z. *E-Mentor (Druk)*, *74*, 44–50. https://doi.org/10.15219/em74.1351

Etikan, İ., Musa, S. A., & Alkassim, R. S. (2016). Comparison of convenience sampling and purposive sampling. *American Journal of Theoretical and Applied Statistics*, *5*(1), 1. https://doi.org/10.11648/j.ajtas.20160501.11

Flanagan, J. C. (1954). The critical incident technique. *Psychological bulletin*, *51*(4), 327.

Goodman, L. A. (1961). Snowball sampling. *Annals of Mathematical Statistics*, *32*(1), 148–170. https://doi.org/10.1214/aoms/1177705148

Hesse-Biber, S. N., & Leavy, P. L. (2011). *The practice of qualitative research*. Sage.

Huschens, M., Briesch, M., Sobania, D., Rothlauf, F., University of Applied Sciences Mainz, Germany, & Johannes Gutenberg University Mainz, Germany. (2023). *Do you trust*

ChatGPT? – Perceived Credibility of Human and AI-Generated content[Journal-article].

Jangjarat, K., Kraiwanit, T., Limna, P., & Sonsuphap, R. (2023). Public perceptions towards ChatGPT as the Robo-Assistant. *Online Journal of Communication and Media Technologies*, *13*(3), e202338. https://doi.org/10.30935/ojcmt/13366

Jones, A. J. (2002). On the concept of trust. *Decision Support Systems*, *33*(3), 225–232. https://doi.org/10.1016/s0167-9236(02)00013-1

Jowarder, M. I. (2023). The Influence of ChatGPT on Social Science Students: Insights Drawn from Undergraduate Students in the United States. *Indonesian Journal of Innovation and Applied Sciences*, *3*(2), 194–200. https://doi.org/10.47540/ijias.v3i2.878

Linneberg, M. S., & Korsgaard, S. (2019). Coding qualitative data: a synthesis guiding the novice. *Qualitative Research Journal*, *19*(3), 259–270. https://doi.org/10.1108/qrj-12-2018-0012

Loos, E., Gröpler, J., & Goudeau, M. S. (2023). Using ChatGPT in Education: Human Reflection on ChatGPT's Self-Reflection. *Societies*, *13*(8), 196. https://doi.org/10.3390/soc13080196

Maita, I., Saide, S., Putri, A. M., & Muwardi, D. (2024). ProsCons of Artificial Intelligence-ChATGPT adoption in Education Settings: A Literature Review and Future Research Agendas. *IEEE Engineering Management Review*, 1–12. https://doi.org/10.1109/emr.2024.3394540

Nietzel, M. T. (2023, March 20). More than half of college students believe using ChatGPT to complete assignments is cheating. *Forbes*. https://www.forbes.com/sites/michaeltnietzel/2023/03/20/more-

than-half-of-college-students-believe-using-chatgpt-to-complete-assignments-is-cheating/?sh=5d4d763c18f9

Ngo, T. T. A. (2023). The perception by university students of the use of CHATGPT in education. *International Journal of Emerging Technologies in Learning/International Journal: Emerging Technologies in Learning*, *18*(17), 4–19. https://doi.org/10.3991/ijet.v18i17.39019

Ofosu-Ampong, K., Acheampong, B., Kevor, M., & Amankwah-Sarfo, F. (2023). Acceptance of Artificial Intelligence (CHATGPT) in Education: trust, innovativeness and psychological need of students. *Information and Knowledge Management*. https://doi.org/10.7176/ikm/13-4-03

OpenAI. (2023). *Upgrade your plan*. ChatGPT. Retrieved April 15, 2024, from https://chat.openai.com/c/badeabbe-1979-459a-bcde-07803acee162#pricing

Seemiller, C., & Grace, M. (2017). Generation Z: Educating and engaging the next generation of students. *About Campus*, *22*(3), 21–26. https://doi.org/10.1002/abc.21293

Singh, H., Tayarani-Najaran, M., & Yaqoob, M. (2023). Exploring Computer Science Students' Perception of CHATGPT in Higher Education: A descriptive and correlation study. *Education Sciences*, *13*(9), 924. https://doi.org/10.3390/educsci13090924

Stewart, L. (2024, April 8). *Inter-rater reliability and inter-coder agreement in ATLAS.ti*. ATLAS.ti. https://atlasti.com/research-hub/measuring-inter-coder-agreement-why-cohen-s-kappa-is-not-a-good-choice#methodologies-for-assessing-inter-coder-reliability

Tossell, C. C., Tenhundfeld, N. L., Momen, A., Cooley, K., & De Visser, E. J. (2024). Student Perceptions of ChatGPT use in a college essay Assignment: Implications for

learning, grading, and trust in Artificial intelligence. *IEEE Transactions on Learning Technologies*, 1–15. https://doi.org/10.1109/tlt.2024.3355015

Wu, T., He, S., Liu, J., Sun, S., Liu, K., Han, Q., & Tang, Y. (2023). A brief overview of ChatGPT: the history, status quo and potential future development. *IEEE/CAA Journal of Automatica Sinica*, *10*(5), 1122–1136. https://doi.org/10.1109/jas.2023.123618

Appendix

Appendix A: ChatGPT

During the preparation of this work, I have used “ChatGPT” to help with the formulation of sentences. After using this tool, I thoroughly reviewed and edited the content as needed, taking full responsibility for the outcome.

Appendix B: Interview Questions

- Do you consent to participating in the study?
- Do you consent to being recorded?
- Where are you from?
- How old are you?
- What gender do you identify with?
- What do you study?
- In which year of your study are you?

ChatGPT usage:

- When did you first use ChatGPT?
    - What made you use it?
    - Do you know how ChatGPT works?
        - Yes, how?
- What would you say is the main purpose of your ChatGPT usage?
    - In a few words, how would you summarize the general aim of your use of ChatGPT?
    - Do you feel guilty for using ChatGPT? Why (not)?
    - On a scale from 1-10 how much do you trust the information provided by ChatGPT?

        - What made you (dis-)trust ChatGPT?
    - If not for educational reasons, how do you use ChatGPT in other areas?
- How often do you use ChatGPT for schoolwork? weekly, monthly, daily?
- Think of the last time you used ChatGPT
    - Did using ChatGPT lead to an increase, even if only by one percent, in productivity for that day?
        - No: I wonder if you could think of the last time that you used ChatGPT that did have this much of an effect in increasing production.
    - What were the general circumstances leading up to this incident?
    - Tell me exactly what ChatGPT did that was so helpful at the time
    - Why was this so helpful in getting your job done?
    - When did this incident happen?
    - Did this incident change the way you view ChatGPT?
    - What made you trust ChatGPT's answers?
- When you use ChatGPT, how do you build your search? Can you maybe show me examples of past conversations you had with ChatGPT?
- Do you think it can do some things better than others?
- Did you have any positive or negative experience with ChatGPT?
- How do you think your ChatGPT usage compares to that of your friends?
- Did you experience any situations in which ChatGPT did not deliver what you expected?
    - What?
- Which version of ChatGPT do you use, 3.5 or do you pay for 4?

ChatGPT usage in Education:

- How do you use ChatGPT to help with your study?

    - Examples
- Can you describe your overall impression of ChatGPT and its impact on your grades or how you do your coursework?
    - Compare your way of work to the first year without ChatGPT
- Do you believe ChatGPT adequately addresses your needs, or do you find limitations in its capabilities?
    - What limitations?
- How do you perceive ChatGPT's role for your schoolwork compared to other traditional learning methods?
    - In what ways do you trust the information provided by ChatGPT compared to information from other sources?
- Can you discuss any challenges you have face when using ChatGPT for academic tasks?
    - Based on what do you decide to trust or distrust ChatGPT?
- Have you ever compared the responses generated by ChatGPT with information from other sources?
    - If yes, how do they compare?
    - What made you compare it?
- Have you ever experienced a situation where ChatGPT's responses conflicted with information provided by your teacher or academic resources?
    - How did you solve this?
- How do you integrate ChatGPT into your learning process, particularly for coursework or exam preparation?
- Do you think ChatGPT has influenced the way you approach learning in your academic studies?

    - How do you approach your learning process?
    - Have you become more lazy?
- Do you think ChatGPT has affected your academic performance or grades? (positive or negative)
    - How?
- Do you think contrasting to the other study ChatGPT is more beneficial to you?
- What features or capabilities of ChatGPT do you find most useful or valuable?

Closing:

- Do you have anything else you would like to share?