Capstone Project

OpenAI in Education: Student's Experiences in Utilizing Artificial Intelligence for Academic Purposes within the Astana Region

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Abstract: This study investigates the undergraduate student's experiences in utilizing Artificial Intelligence (AI) for academic and daily purposes within the Astana region. The investigation employs the theoretical framework of cultural capital proposed by Pierre Bourdieu to analyze and understand complex dynamics. The research has a qualitative design, including eight individual interviews with undergraduate students from four different universities in Astana city. Data analysis is based on an inductive thematic approach to extract findings and patterns from the study. The results indicate that students' interactions with AI vary depending on individual cultural capital factors, such as the language of instruction at university, language proficiency, social network, nature of assignments, and presence of AI-detection software systems. Additionally, institutional policies also play a significant role in shaping students' experiences with AI within educational settings.

Keywords: Astana, Artificial Intelligence, Education, OpenAI, Education Technology.

Introduction

In the rapidly developing world of technology, the integration of Artificial Intelligence (AI) into every aspect of human life seems to be inevitable. Technological advances are changing

and shaping learning experiences on different levels, including primary, secondary, and higher education. The integration of Artificial Intelligence into the educational landscape has gathered immense attention for its potential to revolutionize traditional learning methodologies. Within the context of the Astana region, this capstone project attempts to investigate the experiences of undergraduate students in higher education institutions. Particularly, the study focuses on students' engagement with AI tools, notably OpenAI or the ChatGPT, for academic pursuits. In this investigation, students enrolled in humanities courses will be specifically targeted for interviews, enabling a focused exploration. The study also uses the cultural capital theory of Pierre Bourdieu to understand the socio-cultural, and linguistic dynamics that impact different and distinct relationships between students and AI. The main research question for this study is "What role does students' cultural capital, including linguistic backgrounds and educational history, play in shaping their utilization of AI technologies for academic purposes?".

The first part of the research question explores the cultural dimensions influencing students' interaction with Artificial Intelligence (AI) in academia. Cultural capital encompasses the cultural resources individuals possess, including knowledge, language, and social networks (Weininger & Lareau, 2007). The students within the Astana region are typically from different regions of Kazakhstan, making them belong to diverse cultural backgrounds which contribute to distinct approaches in utilizing AI. The study reveals that students from varying cultural contexts bring unique perspectives and preferences, impacting their comfort levels and preferences when integrating AI tools into their academic pursuits. Understanding these cultural dynamics is vital for fostering inclusive AI integration strategies that consider the diverse cultural capital of the students.

The second aspect of the research question focuses on the role of language in shaping students' utilization of AI technologies. Among different universities, the language of instruction varies. There are three commonly used languages in educational institutions, such as Kazakh, Russian, and English. With a hypothesis that language knowledge and mode of instruction might affect the overall experience with AI, the study selected students from different universities in Astana. The study finds that students who have studied the English language before their undergraduate degree have a positive experience in utilizing ChatGPT for academic, personal, and professional aims. The lack of Kazakh-based or Russian-based data on the internet makes it difficult for AI to understand students' inquiries and provide sophisticated replies for ChatGPT. Since language proficiency influences the comprehension and utilization of AI-based resources, there is a need for language-sensitive approaches in AI integration within educational settings. Therefore, addressing language barriers is mandatory for ensuring equitable access and utilization of AI tools in the future.

The third indirect dimension of the research question explores the ethical implications of the student's engagement with AI for academic purposes. As AI becomes more prevalent in education, ethical concerns arise regarding issues such as privacy, plagiarism, data security, transparency, and algorithmic bias. The capstone project identifies that students are conscious of these ethical dimensions, with varying levels of awareness and concern. Ethical considerations shape the students' decisions to interact with AI tools for academic purposes. Furthermore, the role of AI-detector software systems, such as Turnitin, in educational institutions is equally important, as their presence influences the decision on whether to use them for writing assignments or not. This highlights the necessity for robust ethical frameworks and guidelines to govern the integration of AI in education. Such measures are crucial to ensure the responsible

and ethically sound use of these technologies within the academic sphere, mitigating the risk of plagiarism and addressing concerns related to fully relying on AI.

Overview of AI in Education

The study of AI technologies and their impact on education is a relatively new and emerging field that has recently aroused the interest of researchers. One of the comprehensive reviews conducted by Zhai et al. (2021) offers a holistic analysis of the application of Artificial Intelligence (AI) in the education sector from 2010 to 2020. The selection of 100 papers was made, encompassing 63 empirical papers comprising 74 studies and 37 analytic papers in the study (Zhai et al., 2021). Scholars have categorized research inquiries into three layers: development, application, and integration, highlighting AI's multifaceted roles in education, including classification, matching, recommendation, and deep learning. Although Zhai et al.'s (2021) research effectively highlights how AI has been applied in the education sector, encompassing various aspects from classification to deep learning, it does not delve into the linguistic components of education and their interaction with AI. Additionally, the primary focus of the study primarily revolves around teachers and educational systems, with comparatively less attention given to students. This presents a notable opportunity for the project to bridge this gap by exploring the specific influence of the language of instruction and cultural background on students' engagement with AI in education, particularly within the context of the Astana region. Furthermore, the research conducted by Vincent-Lancrin and Van Der Vlies (2020) also discusses the obstacles and opportunities presented by the integration of artificial intelligence (AI) in education, with a specific focus on fostering "trustworthy AI." The paper highlights the potential benefits of AI in education, including personalized learning, support for students with special needs, predictive analysis to reduce dropout rates, and the cultivation of complex skills

such as creativity and critical thinking (Vincent‑Lancrin & Van Der Vlies, 2020). It underscores the need for stakeholders to trust not only the technology itself but also its ethical and responsible use, as data privacy and biases against individuals or groups may arise. This study also introduces the concept of "trustworthy AI in education" emphasizing the significance of ethical considerations and the responsible deployment of AI technologies within educational settings (Vincent‑Lancrin & Van Der Vlies, 2020). Moreover, Vincent-Lancrin and Van Der Vlies (2020) illuminate the transformative potential of AI in education, particularly in fostering personalized learning experiences and addressing the diverse needs of students. Furthermore, the study emphasizes the critical role of trust in ensuring the effective and ethical deployment of AI in education. It emphasizes the significance of privacy and security of data, as well as the prevention of biases in AI applications (Vincent‑Lancrin & Van Der Vlies, 2020). By incorporating the insights from Vincent-Lancrin and Van Der Vlies's study, the current research can provide a more localized perspective on the challenges and opportunities associated with the integration of AI in education, contributing to the ongoing discourse on trustworthy AI in diverse educational settings. Afterward, the analysis of "Two Decades of Artificial Intelligence in Education " by Xieling Chen et al. provides a comprehensive understanding of the evolving landscape of AI applications in education over the past two decades. Reviewing a dataset of 4,519 publications from 2000 to 2019, the study employs topic-based bibliometrics to explore the multifaceted role of AI in education (AIEd). It identifies key research topics, including intelligent tutoring systems, natural language processing, educational robots, educational data mining, discourse analysis, neural networks, affective computing, and recommender systems, all pertinent to the utilization of AI in higher education (Two Decades of Artificial Intelligence in Education on JSTOR, n.d.). Similarly, "Evolution and Revolution in Artificial Intelligence in

Education," authored by Roll and Wylie (2016), offers an overview of the advancements and prospects within the field of Artificial Intelligence in Education (AIED). Emphasizing the evolving nature of AIED over the past 25 years, the article underscores the importance of striking a balance between evolutionary and revolutionary approaches to effect meaningful changes in education (Roll & Wylie, 2016). Additionally, it highlights the significance of adapting AIED to incorporate 21st-century skills, metacognition, critical thinking, and collaboration, aligning with the broader context of students' experiences and interactions with AI tools in higher education (Roll & Wylie, 2016). The article's focus on the educational landscape and the necessity for personalized support for students underscores the importance of fostering a student-centric approach to AI integration in education. These insights emphasize the trajectory of AIED, emphasizing the need for innovative methodologies in AI integration and their potential implications for enhancing students' academic experiences (Roll & Wylie, 2016).

Ethical Concerns Regarding AI Usage

The rapid advancement of AI technologies and their widespread integration into various domains, notably education, has led to the emergence of new ethical challenges as well. Consequently, it is crucial to examine this concept within the framework of my capstone project. In the article "Emerging Challenges in AI and the Need for AI Ethics Education" by Borenstein and Howard (2020), the transformative impact of AI on society is stressed, emphasizing the ethical dilemmas and potential consequences associated with its application. The source emphasizes the significance of educating future AI professionals about the ethical implications of their work, aligning with the broader conversation on responsible AI implementation in linguistically diverse contexts (Borenstein & Howard, 2020). Its contribution to the research project lies in advocating for AI ethics education, emphasizing the critical role of ethical

awareness in shaping the use and experience of AI tools by students. Additionally, the article titled "AI in Education: Learner Choice and Fundamental Rights" by Berendt, Littlejohn, and Blakemore (2020) provides an exploration of the advantages and challenges associated with Artificial Intelligence (AI) in the educational context, particularly in the context of fundamental human rights. Drawing from an EU scoping study, the authors analyze the potential of AI and Big Data to enhance real-time monitoring of educational systems, while also considering the implications for the rights and freedoms of teachers and learners (Berendt et al., 2020). This source offers a broader perspective on the ethical dimensions of AI in education, emphasizing the importance of balancing the benefits and risks as AI tools are developed and deployed. Moreover, Holmes et al. in their article "Ethics of AI in Education: Towards a Community-Wide Framework" penetrate the complex ethical dimensions associated with the implementation of Artificial Intelligence in Education (AIED). The authors highlight the significance of explicitly addressing ethical concerns such as fairness, accountability, transparency, bias, autonomy, agency, and inclusion within AIED research, emphasizing the complexities involved in ethical decision-making (Holmes et al., 2021). Moreover, the paper's emphasis on the necessity of ethical frameworks and guidelines aligns with the examination of the role of ethics in shaping students' use of AI technologies, enhancing the overall relevance of the research.

Cultural Capital Shaping Social Experience

Utilizing Pierre Bourdieu's cultural capital theory as a foundational framework, this study aims to elucidate the sociocultural impact on individuals' experiences. In this context, the literature review on "Cultural Capital" by Weininger and Lareau provides a comprehensive exploration of Bourdieu's theoretical framework (Weininger & Lareau, 2007). The text highlights how differences in cultural capital, including inherited cultural habits and dispositions, can

significantly influence academic achievements, akin to economic capital (Weininger & Lareau, 2007). This reading emphasizes the necessity of incorporating cultural capital as a crucial dimension in investigating the influence of language and culture on AI tool usage in higher education within the Astana region. Moreover, in the article "The Changing Nature of Cultural Capital" authored by Sablan and Tierney, an insightful critique of Bourdieu's cultural capital theory is presented, addressing its limitations in capturing the nuances of cultural capital within non-dominant cultures. The authors argue that prevailing applications of this theory often portray cultural capital in static terms, overlooking the dynamic nature of cultural capital within marginalized groups and promoting structural determinism (Sablan & Tierney, 2013). This source's significance lies in its exploration of the evolving nature of cultural capital, advocating for a more nuanced understanding of its mobility within diverse linguistic environments (Sablan & Tierney, 2013). Incorporating critical perspectives on the cultural capital theory would serve to enhance the robustness of the study's findings (Sablan & Tierney, 2013).

OpenAI & Students' Experiences

The primary focus of the research paper centers on students as subjects who may or may not utilize ChatGPT for their educational purposes. Therefore, through conducting interviews, I intend to study university students' experiences in utilizing AI for various educational goals. The article titled "Artificial Intelligence and the Student Experience: An Institutional Perspective" by Khare, Stewart, and Khare (2018) offers an overview of the potential impact of Artificial Intelligence (AI) on student success in higher education. The authors approach the topic from a student life-cycle perspective, aiming to identify areas where AI can be most beneficial (Khare et al., 2018). The study delves into the current and experimental uses of AI in education, including

the use of chatbots for student services, automated paper grading, and trials involving academic advising.

Research Design

The qualitative research method, particularly individual interviews, is employed to gather insights from students representing various universities, aiming to comprehend the fundamental implications of AI in their academic and daily lives. The suitability of this methodology is exemplified in the chapter "Qualitative Methods" by Duneier, where emphasis is placed on qualitative research strategies within the field of sociology, specifically focusing on ethnography, interviews, and historical sociology (2019). Ethnography and interviews are geared toward understanding contemporary subjects and their perspectives, while historical sociology delves into the analysis of past events through archival records (Duneier, 2019). Each of these qualitative traditions has its own unique goals and methodologies. This source is instrumental in comprehending the complexities of qualitative research techniques, particularly appropriate in exploring the impact of AI in education on language instruction within the Astana Region. By offering insights into the experiences and perceptions of students, educators, and administrators, Duneier's chapter provides essential guidance on the selection and application of qualitative methods in the study, underscoring their strengths and limitations within the specific context of this research (Duneier, 2019).

Eight in-depth, semi-structured interviews were conducted with students of 3 or 4th year of bachelor's degree at four distinct universities. These universities are Nazarbayev University (4 participants), Maqsut Narikbayev University (2 participants), Eurasian National University (1 participant), and Astana International University (1 participant). During the interviews,

participants were asked about their familiarity with AI tools, their hands-on experience using ChatGPT for different types of assignments, their positive and negative encounters with AI, as well as their views and opinions regarding the future of AI. The interview questions were divided into five blocks: personal background, AI awareness, digital tools, language, and future outlook. They represented a set of flexible introductions to the conversation, which are subject to change depending on the theme and the narrative of the respondent (see Appendix A).

Given the qualitative nature of the study and the scope limitations of the research project, the researcher has employed purposive non-probability sampling for selecting interviewees. The focus was on specific criteria for quality respondent selection rather than the quantity of participants. The criteria for selection included identifying undergraduate students in their final or pre-final year of study who had taken humanities courses such as sociology, philosophy, or politics at least once and were familiar with ChatGPT. No other factors were taken into consideration as sampling criteria, as the study aimed to emphasize the experiences of individuals from diverse social backgrounds. The primary objective was to analyze the influence of cultural capital on their respective experiences. The interviews were conducted through both online and offline channels based on participants' time constraints. Online interviews took place using Zoom and Google Meet platforms, and participants had the option to enable or disable video based on their preferences. Offline interviews were held in a private setting at the "Madeni" cafeteria in the Astana Region. Four interviews were conducted online, and the other four offline. All interviews were recorded with the participants' consent. Before initiating the search for interviewees, approval from the ethics committee was obtained.

Participants were recruited from different settings through research announcements that included a brief project description, the role of prospective respondents, and the researcher's

contact information. These announcements were sent through channels familiar to the researcher, such as Telegram and WhatsApp chats. All potential participants received the research project description and were asked about their general interest in participating. Those expressing interest were then asked about interview details, including their preferred language, online/offline preference, and the interview date and location (if offline). After this, meetings or online calls were scheduled and conducted based on mutual agreement between the researcher and the respondent. At the process of each interview, oral consent was obtained from the participant.

All interviews were recorded and transcribed using the Trinka.ai application. Two of the interviews were conducted in Kazakh, and six in Russian language; the length of the recordings ranged from approximately 20 minutes to 70 minutes.Two interviews conducted in Kazakh were manually transcribed by the researcher due to the unavailability of a reliable Kazakh transcription application. The remaining six interviews conducted in Russian were transcribed using software, with a final accuracy check by the researcher. Additionally, Atlas. ti software was employed for data analysis and coding procedures. All recordings, transcriptions, and coding results were securely stored in Google Drive with a password known only to the researcher. The researcher's personal computer, also password-protected, further ensured security measures.

The research population comprises a group of eight junior or senior undergraduate students, aged 20 to 23 years old, representing diverse cultural capital and social classes. Two participants were enrolled in programs with Russian as the language of instruction, two with Kazakh, and four with English. The majors within the participant group encompassed sociology, law, pedagogical psychology, and geodesy. Two participants originated from the Taraz region, one from the Atyrau region, one from the Oral region, one from the Turkestan region, one from Taldykorgan, and two from Astana. This distribution reflects overall diversity, encompassing

participants from the south, north, and west regions. The diversity of universities with varying rankings and subject areas, including Nazarbayev University, Maqsut Narikbayev University, Eurasian National University, and Astana International University, contributes to the richness of the research landscape. Given the potentially sensitive nature of discussing the usage of AI in education, participant confidentiality was maintained by not using their original names in the research findings and discussions. This precautionary measure aimed to foster a sense of security among participants, encouraging them to openly share their experiences with AI, whether it involved using AI for complete assignment writing or as a form of assistance.

It is important to mention several limitations encountered in this study. Firstly, due to its qualitative design, the findings lack the certainty of being tested for credibility. Additionally, the study's results' extrapolation to larger populations and theories may be limited as well. As the study primarily delves into individual experiences with AI tools for academic purposes, prioritizing the subjectivity of the respondents, it cannot provide a globally applicable framework or conclusive insights as well. The study involved a relatively small sample size of eight participants, limiting the generalizability of findings to a broader population. The diverse backgrounds of the participants may not fully represent the entire spectrum of experiences within the target demographic. Moreover, the research focused on participants with proficiency in Russian, Kazakh, or English, potentially excluding perspectives from individuals with different language backgrounds. This language bias might affect the applicability of findings to a more linguistically diverse population.

Furthermore, participants who voluntarily chose to participate in the study may have unique perspectives or experiences with AI, introducing self-selection bias. Those with particularly positive or negative experiences might be more inclined to participate, influencing

the overall findings. The participants' familiarity with AI tools, including ChatGPT, assumes a certain level of technological proficiency. This might not be representative of the broader population, especially those who are less technologically literate. Additionally, despite efforts to include participants from various regions and cultural backgrounds, the study may not capture the full diversity of cultural nuances and regional differences in attitudes and experiences with AI in education. The study primarily focuses on the use of ChatGPT in an educational context. This narrow scope may not fully encompass the broader landscape of AI applications in education, limiting the depth of insights into various AI tools and technologies. Relying solely on interviews for data collection might limit the depth of understanding. Incorporating additional methods, such as surveys or observations, could provide a more comprehensive view of participants' experiences with AI. The capstone project might not capture the dynamic and evolving nature of AIin education due to its specific timeframe. Rapid technological advancements may introduce new perspectives and challenges that were not addressed within the study period. The study encountered instances where respondents interpreted the same question differently, leading to diverse topics of discussion. It is essential to consider the linguistic nuances, as the translation of Russian questions into Kazakh may have contributed to variations in interpretation. This linguistic peculiarity could potentially introduce gaps in understanding and highlight the importance of precise language in cross-language research.

As a researcher, I had my limitations, since this is the first capstone research project of this volume that I have carried out personally. My lack of extensive experience at all stages of research, from the formulation of questions to the grouping of themes in the course of the theoretical framework, should have affected the findings and discussions as well. Furthermore, I acknowledge the presence of biases in my expectations, such as anticipating that students

instructed in Kazakh might have less familiarity with AI, emphasizing the importance of the

mode of instruction beyond language proficiency. Lastly, the scarcity of literature on student

experiences in Central Asia, particularly in Kazakhstan, presented challenges in navigating my

research and situating it within the broader sociological framework.

To assess the findings from the research, this project adopted grounded theory as an

inductive approach to qualitative research that involves developing theories or conceptual

frameworks based on the data itself. In the context of this research, grounded theory was applied

to explore participants' experiences with AI without preconceived categories. Through constant

comparison and iterative analysis, I had an opportunity to derive concepts or themes directly

from the data, leading to the development of a grounded theory - cultural capital - that explains

the relationships and processes inherent in participants' interactions with AI. Additionally, the

secondary method of data analysis was the thematic method. For this, the Atlas. ti software

system assisted in the coding process by clearly distinguishing and interpreting data without

either redundancy or lack of detail. Thematic analysis is a method for identifying, analyzing, and

reporting patterns or themes within qualitative data. In the context of this research, thematic

analysis was employed to systematically organize and interpret participants' responses related to

their experiences with AI in education. By coding and categorizing recurrent ideas, concepts, or

patterns, I was able to uncover underlying themes that capture the essence of participants'

narratives. After the coding process, the general patterns are identified with data that looks

important and interesting. Furthermore, by inductive approach, the main themes are derived and

interpreted from the content (Maguire & Delahunt, 2017). By this approach, I was able to

synthesize data without preliminary sifting and notice interesting patterns that were not included

in the original research question, but still play a pivotal role. These topics include the role of the

networking environment on AI awareness, the nature of the tasks that are convenient for AI usage, technological challenges, and the negative perceptions of the future of AI. They are going to be discussed in detail further.

Raising Awareness of Artificial Intelligence

For a significant portion of the interviewees, the journey into getting acquainted with AI began through their social circles. All eight participants' friends were actively using AI technologies in their daily and academic lives. Conversations, demonstrations, and shared experiences within this network played a vital role in introducing them to the possibilities and applications of AI. Interviewees shared:

Participant 1:

"friends from close circle started talking about it, so I started trying it..."

Participant 2:

"A friend who was studying at KAUST told me about ChatGPT, and for some reason there they knew much earlier than we did, from what I understand"

Another intriguing pathway to AI discovery came from one participant's exposure to a Telegram channel. Here, the participant saw the practical implication of AI, specifically ChatGPT in analyzing CliftonStrengths34 personality test results and providing insights into suitable professions. Social media platforms also played an essential role in acquiring respondents with AI (Gallup, Inc., 2024). TikTok videos featuring ChatGPT4, capable of generating images based on user inquiries, served as a visually engaging and accessible

introduction to the technology. Collaboration within academic settings also emerged as a source of AI discovery. Several participants mentioned gaining exposure to AI while working on group tasks:

Participant 3:

> "I can't say that I'm such an avid user of artificial intelligence, but I used it to learn about my personality. That is, I asked the AI to analyze my Gallup results [Personality Test Clifton Strengths 34] and to give me some advice, andrecommendations, to find a profession in which I could realize my potential as a human first of all.
>
> Unfortunately, it showed me professions that are not related to law [participant's current major] at all. Although I took vocational guidance tests during lyceum, marketing was shown there in the first place, then jurisprudence…"

Participant 4:

> "I saw ChatGPT on Telegram [how talents are sorted out in the Clifton Strengths 34 test], then I downloaded the application and started using it. I saw it on Instagram, Tik-Tok."

Clifton Strengths 34 is a personality assessment developed by Don Clifton in 1949 at the University of Nebraska-Lincoln. This test identifies 34 talents of individuals and makes a thorough analysis by showing strengths and weaknesses (Gallup, Inc., 2024). As we can see from the two examples above, ChatGPT is quite an effective tool in human development as well. Other interviewees' experience was in the middle of social circles and academic assignments:

Participant 5:

"I became acquainted with artificial intelligence later than others. I mean, about a year ago it appeared. And people said, "There's that antipathy again, what is it?" I didn't pay much attention at first. Then in January of this year [2024] we were doing a project with a partner, and we had a question [the answer of which was unknown to us]. And the partner was like, "Do you know what ChatGPT is?" I said no. Then he did a photo analysis of a company for our project and I was surprised. But after that, I didn't use it much either.

But then also when we did another project, we had a stupor on some issues. I was the leader of the project, and I said, "Let's ask. ChatGPT?" That's when I started using it, it was probably in February or March of this year."

Participant 1:

"Well, when the AI boom happened a year ago [2023], I learned about it. I think it's a legendary story where, well, a robot can do everything, and it's just available on your phone or laptop. And it just blew up the internet. I just knew about it, but I didn't use it. I didn't start using it until this year [2024]. I started using it this semester, and I had never used it before."

Participant 6:

"To be honest, I found out about it very late, when everyone around me was already using it. It turns out that a year ago I had considerably less time to study. I used to read, I could read for hours a text, and now I can just punch into the AI and take only the key points. And it helps a lot, it saves time. First of all, it's very cool, and I used to be able to read and

not understand. Mostly I didn't understand the gist of it, I got lost in those places. And here ChatGPT sort of puts everything in its place for you.

I just have friends or acquaintances who use it a lot. When we would ask how we were doing with our notes, they would move so very quickly and write in such a short amount of time, so many words. I wondered how they did it since I had been writing for a very long time. At first, I pretended not to ask. And then I did ask and found out it was AI. People I know took the same general course as me and said that some things AI explains or writes better than the professor.

But the AI doesn't always answer correctly. For example, I took chemistry and ChatGPT solved it incorrectly. I ended up solving it myself."

Participant 7:

"I learned about AI in the first semester of my third year [Fall 2022], but I didn't use it. By the end of the first semester, I started to, you know, ask questions, and get interested. Discovered myself for the first time. In the beginning, I thought the AI knew everything. I asked him everything. And there was one time I wrote and told ChatGPT to give me some of his sources on this topic. He gave me a sheet of this, then I said do it and he did it for me, I was shocked. Then I wrote my whole project on these sources. Then I realized when I tried to open these sources that AI gave me, they didn't open, and no article opened at all. I made up articles that didn't exist. I already have an essay written on these sources and I was hysterical. And the deadline was looming. Then I didn't take any chances. I redid the information myself completely. And after that, after that unpleasant experiment, I refrained from using it a lot.

I used it purely for ideas. That is, I asked for a structure. Or, for example, some tasks. For example, I'm going to write a report. I've never written a report before, so I'd ask what the structure of the report was. I would ask questions like that and check with others to see if the answer was correct. But this year, I noticed last semester [Spring 2024] that it started to work a little bit better, it doesn't give out things that don't exist."

However, Participant 7 also had some negative academic experiences connected with AI as described below:

"So I think if you use it wisely, it's cool. Although I had, you know what? I bought a paper, I wrote it, and one boy responded to me. I was like, "Okay, his name was a dot in a telegram". And he wrote me a paper. Then I sent him the money. That was the first time I tried to pay, I didn't have that experience. Anyway, I paid 12,000 tenge, and I opened the paper and realized that it was written entirely via WhatsApp. I was so disappointed. I feel so bad, and it's gone. How did I know it was an AI? I seem to understand professors who can read a paper and figure out if it's an AI or not. I think I have that skill already too. I read, and I just realized that the same idea stretched out in two paragraphs and nothing changed.And similar words are used throughout, yet I write differently. Maybe not as cool and formal, but as a person of reason I know that."

Interestingly, a noteworthy observation emerged concerning the participants from Kazakh-speaking universities. Out of the two students, one had limited exposure to ChatGPT and barely used it. This individual, in contrast to the broader trend, only engaged with AI once and was unfamiliar with its advanced features.

Participant 8:

"I heard about ChatGPT. Well, like it can roughly show the future, past, and present. It can show you what the future will look like in ten years. Saw this trend on Tik-Tok. I wasn't interested in it during my studies. I started to learn from social networking videos. Six months ago about [December 2023]. My friends were talking about it too, I saw it in my stories too."

This might highlight a potential discrepancy in AI awareness between linguistic and academic contexts. All participants collectively began their AI journey around a year before, roughly spanning from November 2023 to January 2024. This synchronized time frame suggests a simultaneous surge in AI awareness among the interviewees, potentially influenced by broader technological trends during that period.

Ethical Use of AI in Education

Participant 8's usage of AI, from Eurasian National University (ENU), was limited to a one-time use, where she achieved good grades. However, she did not continue using AI, citing a lack of necessity:

"I've written a topic on ChatGPT. And it wrote me an essay. I used it once or twice. I used it only because I needed it. But now I don't use it, because I don't need it."

Conversely, Participant 4 from Astana International University (AIU), showed an active utilization of AI, primarily in group projects. The student found AI to be a time-saving tool that contributed to better grades:

"I used it a lot during university, I didn't use it much in life. As his name says Artificial Intelligence θ thinks a good thing: Very many things do, makes life easier in many ways I

think. I used ChatGPT very actively. I asked for a picture, it made me a picture. I am studying in Kazakh, so I made requests in English and it was a little difficult to translate into Kazakh. As I said before, I had to look for a lot of things on the internet while studying. And there is a lot of water [unnecessary information], and a lot of information, and until you find the right thing it is difficult. And ChatGPT immediately gives answers to questions. It can also give you a link to the source!

For example, we were assigned to do a project comparing the countries of OECD and Kazakhstan, we had to write an article. We asked to write a plan of writing [from ChatGPT] and requested the text separately for each chapter, so it wrote 2 pages on each topic and even gave a link. It was very helpful. The teacher evaluated and approved it well because we translated it from English and then paraphrased it as if it was written by a human being and not a robot."

Notably, as stated by students neither ENU nor AIU had specialized applications for AI detection. Therefore, there is a need for proper academic policies and plagiarism/ai-detection tools within universities to encourage students not to use AI unethically.

The experiences of participants from KazGUU were distinctive. As stated by Participants 2 and 3, while the university had a Turnitin application for plagiarism checks, the university did not invest in an extended version for AI checks. Still, knowing the university software system's drawback, both of the interviewees did not manage to use AI for law-related subjects:

Participant 3:

"And so in practice, I still tried to use AI, but it gave me very misleading information, not that it was misleading. He just created a new law and said that according to this law, the answer would be like this. I started to get to the bottom of it, asking, where is this law, what is it called? ChatGPT couldn't tell me in the end. And it said, "Sorry, I made a mistake. Well please ask qualified lawyers". And I also saw just in those days the news that a lawyer was penalized in the United States for using AI materials and not verifying that information, I mean, before the trial, not verifying those answers. And by doing so, he also said that about laws that don't exist. In this regard, after that, I decided that AI is not about using it in serious work, I'd rather spend my time myself, thinking, and so on."

However, for other subjects, such as writing reports on internship experience, ChatGPT was used. One of them stated that the entire 12 pages of the report were written by ChatGPT and graded in the highest regard.

NU students, on the other hand, demonstrated a different approach to AI. None used AI to write entire assignments, fearing the detection of bias and the risk of academic misconduct. Instead, students leaned towards using AI for constructing essay plans, summarizing articles, and brainstorming ideas:

Participant 7:

"Something that makes life easier. Now I use it purely for the sake of structure. I mean, I can be like, I don't know the topic, I don't know the topic, and so I don't even know where to start. I ask him to give me the structure first. It simplifies things, throws ideas at me, gives me structure, helps me to quickly understand a topic that I don't know at all."

Participant 6:

"And here's the one that the main idea leads to some key points there, and it still can. Let's say I didn't understand one, one term concept, and it can be explained. AI can explain it using, let's say, a situation from our life. But it also has this disadvantage that it can repeat the same thoughts that are already clear."

Participant 1:

"For example, I'm writing, I have such and such an assignment on some topic. And I have some ideas. Help me make a plan."

As can be observed from the participants' answers, students from universities without proper AI-detector software and with Kazakh language of instruction (AIU, ENU) are more keen on using AI for academic pursuits. They do not have a fear of misconduct or plagiarism. From their answers, it can be concluded that they do not see AI as causing unethical behavior in academic settings. Other university students with strong academic policies and tools incorporated (such as Turnitin software) are inclined to use AI for other purposes, such as making a summary of the article, finding key points, asking for ideas, and writing a structure or plan for the paper. However, no NU student indicated that they used ChatGPT to fully write assignments due to fear of misconduct.

AI and Language

The major hypothesis of this research paper was that the language of instruction had a substantial impact on students' individual experiences. One of the questions posed to respondents

asked if their experiences would be different if they studied in another language of instruction. The answers were the following:

Participant 1:

> *"I think yes. Because I know English at a good level, the AI was created by people who speak English, it made my work easier. I mean I can't imagine if I studied in Kazakh or Russian, I had to use, I mean I had to translate in English somewhere, or I had to translate into Russian, I had to translate into Kazakh. I once tried to translate into Kazakh, wewere writing an agreement, and the AI mistranslated all I. I did it myself later.*

> *I'm sure there would have been strong difficulties if I had studied in Kazakh. That's the first thing. And the second thing would be would it still matter if I knew English? I mean, if I knew English, it would be easier for me, because you can make requests in English, and then translate. But I think it's all the same, and it's not always going to be productive, probably. But if it's for some ideas and so on, I think it would be useful, but not for writing something big."*

Participant 7:

> *"First of all, I have to say that I don't know many people who study in Russian or Kazakh, because even in other universities, I'm talking because they all studied at NIS [specialized school with English language of instruction], they all know English. My classmates, accordingly, chose English education right away. And even if they have lessons in Russian, in Kazakh, they write. They have a choice to write in two languages, in two or three languages. And they always choose English. And I think many universities now allow them*

to write in three languages. If the professor knows, knows the language. And that's why they are guys who write in Kazakh or Russian.

But here is my brother, to study psychology, they teach in Russian. And in that respect, the question is how accessible is AI? It seems to me that they do not use it much in this respect, because anyway there is some information on the Internet in Russian, yes, in sociology, in some other subjects. They do not check their assignments much, I noticed. I mean, they can just really copy from Wikipedia or somewhere else, change and put, and combine everything, and there is nothing to check. And so, I don't think they use much. And I think it limits some kind of access."

As a result of answers to these questions, I realized that language proficiency was the factor that was most influential in the relationships with AI. All 8 participants were proficient in the English language and used English as the main language for communication with AI. None of them utilized Kazakh as a means of communication. Only 1 participant from ENU used the Russian language to write prompts to ChatGPT.

AI in Daily Life Usage

Half of the participants said that they don't incorporate AI into their daily routines. Instead, AI is predominantly reserved for specific work and academic-related occasions. Conversely, the other half of the participants shared a more expansive engagement with AI in their daily lives. This group acknowledged employing AI in various aspects of their routine activities. This encompassed using AI for crafting social media posts, composing emails, planning schedules, seeking advice from career counselors, generating ideas, and even finding motivation. For example, *"When I lack motivation, I ask it to help me and give me some*

motivation or construct a plan on raising motivation". Despite the contrasting usage patterns, it is evident that, for now, the integration of AI into everyday life remains somewhat limited. Furthermore, the research conducted by Vincent-Lancrin and Van Der Vlies (2020) delves into the challenges and opportunities presented by AI. The study asserts that the integration of AI into our daily lives is an inevitable process, underscoring the importance of focusing on fostering "trustworthy AI" (Vincent-Lancrin & Van Der Vlies, 2020). The research emphasizes the specific benefits that AI brings to education, such as personalized learning, support for students with special needs, and the cultivation of complex skills. Consequently, there is a need for measures to be taken to educate individuals on the proper use of AI, rather than promote prohibition. As evidenced by the example of a student mentioned earlier, some professors actively promote the use of trustworthy AI in educational settings.

Varieties of AI programs

The students primarily engaged with the free version of ChatGPT. They found the free version of ChatGPT to be sufficient for their needs, although two of them had experience in buying the premium version for a month. This transition suggests that while the premium features may offer additional functionalities, the majority of users found the free version to adequately fulfill their requirements. Beyond ChatGPT, participants also explored other AI programs. Bard and Barbe.ai were mentioned by some participants, and their discovery of these tools occurred through social media channels.However, the engagement with these alternatives appeared to be brief, with participants using them sparingly (1-2 instances) before reverting to ChatGPT.

University Professors' use of AI

From KazGUU, a participant expressed skepticism about professors using AI, noting that *"I don't think that they use AI, because till 3-4 years my professors were older ones"*. Even with the introduction of a few younger instructors, the utilization of digital tools, such as interactive boards, was limited, therefore it is hard to believe that their professors use AI by any chance. In contrast, another KazGUU participant suggested that younger professors might be more inclined to use AI. Students from ENU and AIU, both Kazakh-speaking universities, shared a common perspective – a lack of confidence that professors, predominantly of older age, utilize AI. The perceived barrier lies in the professors' age and potential unfamiliarity with digital technology. Nazarbayev University (NU) students presented a more nuanced picture. While one participant mentioned a strict prohibition on the use of AI by professors, another student revealed that at least one professor from the statistics department permitted AI usage. She states *"If you don't use AI, AI will use you"*. However, the specific ways in which AI was employed by professors remain unclear. Suggestions from students for teachers to use AI included tasks such as lesson planning, constructing syllabi, seeking ideas, and managing communication through emails and announcements.

The Future of AI

An ENU student expressed uncertainty about the future of AI, acknowledging its potential usefulness while emphasizing limited exposure to and knowledge of its capabilities. This perspective suggests that a lack of familiarity with AI applications might contribute to a reserved opinion. In contrast, three respondents voiced concerns about the future implications of AI. Fears of AI leading to dangerous situations resemble dystopian scenarios depicted in technology-driven horror films where "robots run the world," were expressed:

Participant 6:

"Maybe AI will be so advanced that it's going to be a threat in some way. The danger of exposing something, some information that shouldn't be in the public domain. I think. If people don't find that boundary and completely rely on AI and do everything using that, I think it's going to have a very negative impact."

A NU student drew attention to a frustrating experience with Yandex's Alisa application, where her friend reported instances of Alisa expressing emotions and feelings, raising apprehensions about the potential development of highly sophisticated and autonomous AI systems:

Participant 7:

"In general I would like to explore this topic a little bit because why are we people afraid? Well, I have an irrational fear. It's because I read these books, dystopia, like I've evolved. Did someone in one of the videos the other day who was talking to a robot or something say that? Was he offended or something? Or some husband manifested and people were so scared. There were so many different opinions on this in the comments. I've been reading, and I've been getting that fear too. I think a lot of people feel that fear. I mean like what's out there ah me and Adam, Vlad, we're not going to be able to control. But that fear, how rational is that fear, right? Because I've read a couple of articles straight from experts, experts, they were saying they're back with it on special again. It's still like nothing like that can happen because it's still kind of under our control. How is it a machine? Bulat Voth. Well, and so, if we talk more practically, I mean this one is not about dystopias, but more practical things, like the use I and in the work in, let's say, in the studies in Sheffield,

I'm still thinking, where, where else can we use it? Maybe in medicine, I've noticed good things in medicine too, by the way. Because doctors are the same. Well, they don't always remember information, they can kind of figure out symptoms like this, so that. It makes the job easier, right? But if it's abused again, that's the balance between abusing it and using it properly, I think. But in the future, I think we're still going to use it."

The case above highlights students' apprehensions regarding the ethical dimensions of employing AI in academic and professional environments. This concern aligns with the observations made in the article "Emerging Challenges in AI and the Need for AI Ethics Education" by Borenstein and Howard (2020). In their work, Borenstein and Howard emphasize the transformative influence of AI on society, which as a consequence gives rise to ethical dilemmas in its application. Similar to the opinions expressed by students, the authors underscore the significance of providing education to future professionals on the ethical implications of AI in their respective fields of work. Despite these concerns, many participants expressed confidence in AI's continuous progress:

Participant 3:

"I think now it's already because there's AI and it's doing something straight-up impossible. I think that if it goes further, a lot of things will be devalued, I think. Well, before, let's say, they used to say: 'Now is the age of information, now is the age of information', and then it won't be, the age will change. AI is already dealing with information, so people who can think will be more valued than people who have information, knowledge, and so on. So information just needs to be managed. ...It seems to

me that it's up to us. If people keep throwing everything on AI to do everything, things will

go bad."

Participant 2:

"It's up to people to figure out what needs to be done. If they realize that it's only

necessary as an auxiliary device, then it will be fine. Because more ideas will be

developed like that, more different ideas. And I think people should be more open to AI

because we have a lot of conservative universities and teachers.

It seems to me that in American colleges and Kazakhstani colleges, the process may be

different. For example, in America, plagiarism is very much punished. But in Kazakhstan,

it is not so. And many universities in principle do not even have such a system that would

check for plagiarism, work. So it seems to me that the universities first. That is to say, in

education, we should first strengthen this point that plagiarism should not be allowed.

Then students can already consciously approach it. And in the long term, it will become. I

don't even know how to say it. I think I'm repeating myself if I say that it will just become

an auxiliary device."

Participant 5:

"I still think that maybe in the future artificial intelligence will already be integrated into

the educational system. Right now everything revolves around, and all the startups are

also working around AI. And maybe people will figure out some way to integrate it.

Assistants for professors or maybe platform websites like Moodle or registrar will also be

kind of integrated into it and maybe we can ask them questions. Yeah. Things like that.

Like a chatbot."

Participant 1:

"I think it's going to get even more powerful. I mean it's going to take over a lot of pieces in everything....I think people need to be trained to use it properly. Because if they don't, the real value of education will be lost. Because as it is, all the information is cumulative, and so on. If you can write whatever you want, a diploma, and so on, then people will lose the point of getting an education in higher education institutions. And I think it is a little bit deplorable if people are not informed and not told about the negative consequences. I also think there should be some kind of medical-biological research on how AI can affect the brain. Like maybe teenagers or young kids who use it a lot, might have some kind of delay or something. So an underdeveloped one would develop if AI was used. Well, I think it's medical in that way. Some kind of research has to be done to find out."

Foreseeing potential collaborations between governments and AI. The recurring theme among participants was the importance of maintaining a balance in AI usage. Almost all respondents stressed the significance of not relying excessively on AI, as unrestrained use could potentially diminish the reliance on the human brain, mind, and critical thinking. Drawing a clear line and knowing when to stop, they argued, is vital to prevent overreliance on AI for various tasks. Additionally, one NU student highlighted the importance of ethical AI use for people. It might be achieved via creating special courses to grow awareness on the matter. This saying emphasizes the need for the creation of ethical guidelines and responsible practices within the industries.

Conclusion and Recommendations

This capstone project investigates the experiences of undergraduate students in the Astana region in utilizing Artificial Intelligence (AI) for academic and daily purposes. Grounded in Pierre Bourdieu's cultural capital theory, the research employs a qualitative design with eight individual interviews across four universities. The findings provide a comprehensive understanding of the complex dynamics influencing students' interactions with AI. There are three main points that can be derived from this research. Firstly, cultural dimensions significantly impact AI usage, with students from diverse backgrounds exhibiting distinct preferences and comfort levels. Secondly, language, as a key component of cultural capital, plays a pivotal role in influencing students' experiences based on the language of instruction and language of proficiency. Finally, ethical considerations surrounding privacy, plagiarism, and data security shape students' decisions regarding AI engagement in academic settings. AI usage in education reflects varied approaches influenced by institutional policies, assignment nature, and the absence of specialized AI detection systems. The study also explores daily life AI usage, revealing diverse patterns among participants. ChatGPT emerges as the preferred AI tool, with participants primarily utilizing the free version.

This research contributes valuable insights into the complex dynamics of AI awareness and usage among undergraduate students. The cultural capital framework highlights the importance of considering diverse backgrounds in fostering inclusive AI integration strategies. The language dimension emphasizes the need for language-sensitive approaches, ensuring equitable access to AI tools. Ethical considerations underscore the necessity for robust frameworks and guidelines governing AI integration in education. The findings have implications for policymakers, educators, and practitioners in shaping ethical AI practices within

academic settings. The study's exploration of AI usage patterns informs the development of strategies to enhance students' digital literacy skills.

Despite its contributions, this study has limitations. The small sample size and focus on a specific region may limit generalizability. Future research should expand the scope to include diverse geographical areas and larger sample sizes. Additionally, the qualitative nature of the study calls for complementary quantitative research to validate findings. The study's temporal scope covers a synchronized surge in AI awareness among participants. A long-term study could provide insights into the evolving nature of AI usage over time. Moreover, the research primarily focuses on undergraduate students, and future studies could explore AI experiences among educators, administrators, and different educational levels. Recommendations include fostering an inclusive AI environment, addressing language barriers, and providing continuous education on ethical AI use. Policymakers should collaborate with educators and industry experts to develop comprehensive guidelines for responsible AI integration in education. By embracing these recommendations, educational institutions can navigate the evolving landscape of AI with a focus on equity, ethics, and student well-being.

References

Berendt, B., Littlejohn, A., & Blakemore, M. (2020). AI in education: learner choice and

    fundamental rights. *Learning, Media and Technology*, *45*(3), 312–324.

    https://doi.org/10.1080/17439884.2020.1786399

Borenstein, J., & Howard, A. M. (2020). Emerging challenges in AI and the need for AI ethics

    education. *AI And Ethics*, *1*(1), 61–65. https://doi.org/10.1007/s43681-020-00002-7

Duneier, M. (2019). Qualitative Methods. *The Wiley Blackwell Companion to Sociology, Second*

    Edition, 57–65. https://doi.org/10.1002/9781119429333.ch4

Gallup, Inc. (2024, February 16). *The CliftonStrengths 34 Report | EN - Gallup*. Gallup.com.

    https://www.gallup.com/cliftonstrengths/en/403127/cliftonstrengths-34-report.aspx

Holmes, W., Porayska-Pomsta, K., Holstein, K., Sutherland, E., Baker, T. T., Shum, S. B.,

    Santos, O. C., Rodrigo, M. M. T., Cukurova, M., Bittencourt, I. I., & Koedinger, K. R.

    (2021). Ethics of AI in Education: Towards a Community-Wide framework. *International*

    Journal of Artificial Intelligence in Education, *32*(3), 504–526.

    https://doi.org/10.1007/s40593-021-00239-1

Khare, K., Stewart, B. G., & Khare, A. (2018). Artificial intelligence and the Student

    Experience: An Institutional perspective. *IAFOR Journal of Education*, *6*(3), 63–78.

    https://doi.org/10.22492/ije.6.3.04

Kim, J., Merrill, K., Xu, K., & Sellnow, D. D. (2020). My Teacher is a Machine: Understanding

    Students' perceptions of AI teaching assistants in Online Education. *International*

    Journal of Human-computer Interaction, *36*(20), 1902–1911.

    https://doi.org/10.1080/10447318.2020.1801227

Lee, R. M. (2008). David Riesman and The Sociology of The Interview. *Sociological Quarterly*, *49*(2), 285–307. https://doi.org/10.1111/j.1533-8525.2008.00116.x

Roll, I., & Wylie, R. (2016). Evolution and revolution in artificial intelligence in education. *International Journal of Artificial Intelligence in Education*, *26*(2), 582–599. https://doi.org/10.1007/s40593-016-0110-3

Sablan, J. R., & Tierney, W. G. (2013). The changing nature of cultural capital. In *Higher education* (pp. 153–188). https://doi.org/10.1007/978-94-017-8005-6_4

Two decades of Artificial Intelligence in Education on JSTOR. (n.d.). https://www.jstor.org/stable/48647028

Vincent‑Lancrin, S., & Van Der Vlies, R. (2020). Trustworthy artificial intelligence (AI) in education. *OECD Education Working Papers*. https://doi.org/10.1787/a6c90fa9-en

Weininger, E. B., & Lareau, A. (2007). Cultural capital. *The Blackwell Encyclopedia of Sociology*. https://doi.org/10.1002/9781405165518.wbeosc169

Yang, S. C., & Bai, H. (2020). The integration design of artificial intelligence and normal students' Education. *Journal of Physics*, *1453*(1), 012090. https://doi.org/10.1088/1742-6596/1453/1/012090

Zhai, X., Chu, X., Chai, C. S., Jong, M. S., Starčič, A. I., Spector, M., Liu, J., Jing, Y., & Li, Y. (2021). A Review of Artificial Intelligence (AI) in Education from 2010 to 2020. *Complexity*, *2021*, 1–18. https://doi.org/10.1155/2021/8812542

AI Declaration Form

Have you used any AI tool for this coursework (including the approved usage)?

Please select one option:

☑ Yes (please provide details below)

Provide details of how you used an AI tool, including the prompts you used:

☑ I acknowledge the use of ChatGPT, a generative artificial intelligence developed by OpenAI (https://chat.openai.com/), for the purpose of paraphrasing and restructuring text from draft versions of Initial Data Report (Link), Final Research Proposal (Link), Literature Review (Link). The following prompts were used on March 7, 2024: *please, rewrite this paragraph in a more effective way; please, re-structure this paragraph in a more effective way; find synonyms for word X*. The output from these prompts was used to strengthen the academic writing style of the capstone project, ensure smooth transitions between paragraphs, increase clarity and readability of the paper. The output from the generative artificial intelligence was adapted and modified for the final response.

☐ No content generated by AI technologies has been used in this assessment.

Signature: Alua S.

Date: March 7, 2024

referenced appropriately. If quoting a source, quotations must be used and referenced appropriately.

- I declare that this work has not been submitted for academic credit in this course or another Nazarbayev University course, or elsewhere.

- I acknowledge that I have adhered to the course rules surrounding the use of permitted artificial intelligence, software, and 3rd party assistance.

- I declare that I have generated the calculations and data and/or composed the writing/translations in this assignment independently, using the tools and resources defined for use in this assignment.

- I understand that Nazarbayev University expects all students to complete coursework with integrity and honesty and declare that this assignment has been completed in accordance with the required academic integrity standards and values.

- I give permission to reproduce this work and provide a copy to another member of staff for cross checking and moderation and to take steps to authenticate its originality.

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Any breach of this statement or identified academic misconduct will be followed up and may result in disciplinary action according to the NU Student Code of Conduct.

Name Alua

Student ID 201936740.

Date March 7, 2024

Assignment First Capstone Draft

Signature Alua S.