DIALOGEDUSHIFT

DialogEduShift:
Transforming Higher Education Teaching and Evaluation Approaches in the Era of AI ChatTools

Project No: 2023-1-PL01-KA220-HED-000167212

WP2 – National report
Sumy State University, Ukraine
Phd, Ec. Svitlana Tarasenko & Prof. Yuriy Petrushenko

"Transforming Higher Education Teaching and Evaluation Approaches in the Era of AI Chat Tools" (DialogEduShift)
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Content

Introduction

We are on the verge of the Industrial Revolution 5.0, so it is not surprising that technology is undergoing significant changes. Currently, the most relevant trend is the integration of artificial intelligence into all spheres of public life. Therefore, it is not surprising that artificial intelligence tools are in demand among both students and teachers in higher education.

In today's higher education environment, artificial intelligence (AI) language models are gaining more and more attention and recognition. With their ability to analyze and understand natural language, these models are becoming an integral part of the educational process. In fact, the integration of AI language models into higher education opens up new perspectives for improving learning, research, and interaction between students and teachers. In this context, it is important to consider both the technical aspects of language model development and their potential impact on improving the quality of education and developing the intellectual potential of participants in the educational process. However, it is important to consider this issue not only in the context of technical use but also in terms of academic integrity, ethical use, and privacy protection. Therefore, this topic is extremely important and relevant as it addresses the transformative impact of language models powered by artificial intelligence on higher education.

Thus, this report prepared as part of a project to shape the current possibilities of using AI chat tools in the system of higher education in Ukraine. The findings were derived from the opinions of 10 experts, 10 academics and 5 administrative staff/manager level participants through in-depth interviews.

State-of the-art desk research of current situation in Ukraine

AI language models are a crucial element of natural language processing, a branch of artificial intelligence that concentrates on enabling computers to comprehend and produce human language. Language models and other methods in the field of natural language processing involve the creation of algorithms and models that can process, analyze, and generate text or speech in natural language [1].

In general, the applications of language models are quite diverse, including text completion and editing, translation, chatbots and virtual assistants, and speech recognition components. One of the best examples of a large language model is the GPT series from OpenAI, such as GPT-3.5/GPT-4. In addition, it is currently the most popular tool among students, because it facilitates access to knowledge through its human-like conversation interface. In January 2023, a survey was conducted among Stanford University students. The results showed that out of 4497 respondents, 17% of them used ChatGPT to help with assignments and exams in the fall quarter. Most of the students reported using ChatGPT as a tool for taking notes and brainstorming. However, 5% of the respondents used artificial intelligence unethically by submitting their papers to teachers without editing them (Figure 1) [2].
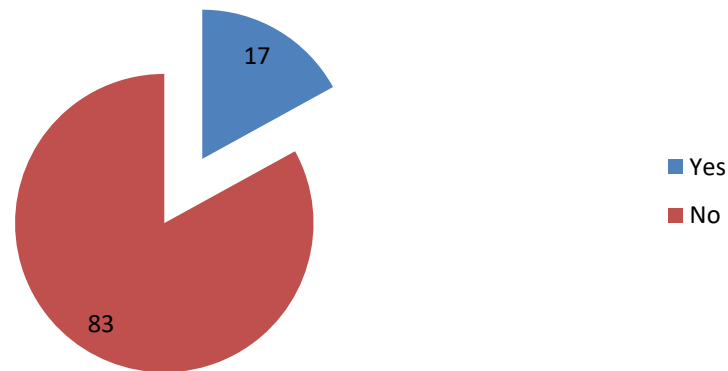
Figure 1. Results of the survey on the use of OST chat in the fall quarter of 2022

Considering that the release of the ChatGPT took place on November 30, 2022, the number of students using it is significant. On one hand, ChatGPT and other language models can be effective aids in teaching. In their paper titled 'ChatGPT and large language models in academia: opportunities and challenges', the authors note that a very important advantage of large language models (LLM) is that they can help with editing academic text. This is especially useful for those students whose native language is not English. In contrast to software tools and online editing services such as Microsoft World, Grammarly, Scribbr, and Quillbot, LLMs offer more flexibility in evaluations. If necessary, the user can request an explanation of certain errors, which allows you to provide users with additional information to assess the accuracy of the report. Researchers note that since LLM uses human texts as the basis for editing, the process is similar to asking a friend to review a text and give recommendations. Using LMM with existing text is unlikely to raise ethical issues, such as plagiarism, which can occur when generating LLM text based on prompts [3].

On opportunities and challenges of large language models for education' emphasize that the use of AI language models can be useful not only for writing academic texts, but also for developing critical thinking and problem-solving skills. In addition, GPTchat can be an effective tool for creating an outline and summary of a text. It helps students focus on the aspects of the topic that have received the least attention in the academic space. This use of the language model allows students to understand the focus of the analysis and better articulate their thoughts [4].

Ramiz Zekaj managed to summarize all the information provided by other authors in his article. In particular, he focuses on the advantages of LLM in terms of teachers' tasks. The creation of an effective assessment and grading infrastructure reflects faculty support, resulting in faster feedback. In addition, artificial intelligence can enhance methods and algorithms for presenting educational information in innovative ways. For instance, the text mentions other research on the creation of a new model (KIEDLKD) that provides diagnostics and assessment of student knowledge for teachers. Additionally, the implementation of the RASA framework to create a better dialog flow is highly effective. The discussion indicates that AI can facilitate pedagogical innovation. However, ethical and algorithmic concerns emphasize the need for responsible integration [5].

In addition, Jairus Bone presented opportunities for teachers using the ChatGPT. In particular, he found that, indeed, the LLM could write a program and assessment framework for a particular discipline if there is a need to update or improve it. He notes that a similar first-year program in biological science, written by an AI tool, would require editing. However, it saves a lot of time to write a similar text format [6].

On the other hand, several drawbacks hinder the complete integration of AI tools in the educational

system. As previously mentioned, it is not ethical to generate a full-fledged text and provide an open answer to a question. This is because the chatbot formulates its answer based on scientific literature. Answers to multiple-choice tests are particularly vulnerable.

Michael Webb, director of technology and analytics, notes that educators have three ways to deal with AI in assessment: avoid it, get ahead of it, or embrace it. The best way would be to embrace LLM, which means developing specific guidelines and rules for use, as well as requiring students to declare their use of the language model [7].

Many universities have established rules and guidelines for students on how to use artificial intelligence tools. The example of Flinders University is a good illustration of the implementation of such practices. In particular, they offer low criteria for evaluating AI tools (Figure 2).

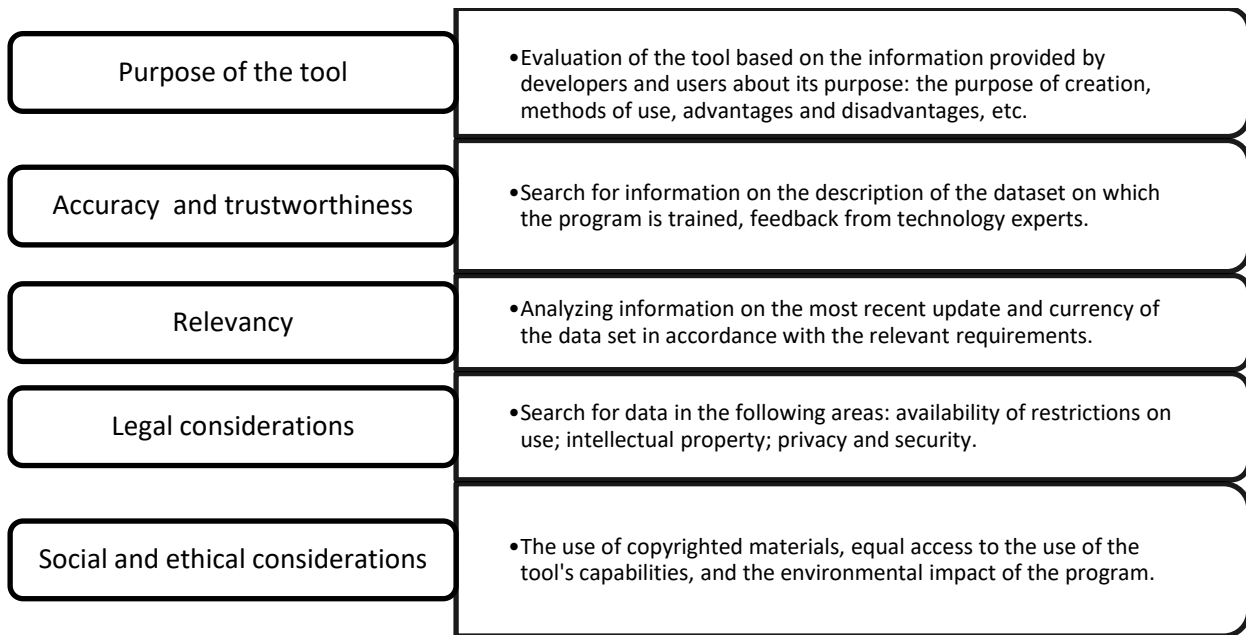| Purpose of the tool | • Evaluation of the tool based on the information provided by developers and users about its purpose: the purpose of creation, methods of use, advantages and disadvantages, etc. |
Accuracy and trustworthiness	• Search for information on the description of the dataset on which the program is trained, feedback from technology experts.
Relevancy	• Analyzing information on the most recent update and currency of the data set in accordance with the relevant requirements.
Legal considerations	• Search for data in the following areas: availability of restrictions on use; intellectual property; privacy and security.
Social and ethical considerations	• The use of copyrighted materials, equal access to the use of the tool's capabilities, and the environmental impact of the program.

Figure 2. Elements of Flinders University students' evaluation of the AI tool [8]

This instruction states that the use of AI is possible only with the permission of the coordinator and proper confirmation of its use at certain stages of the task. Students are encouraged to provide a declaration that will be included in the sources of information or developed in a separate footnote. For example: "I acknowledge the use of ChatGPT in the drafting and proofreading of this assignment." AI language models enable students to clarify intricate concepts for improved comprehension, create flashcards and self-assessment tests, enhance their writing style, and utilize hints to foster critical thinking. At the same time, the university clearly defines the scope of disproportionate academic behavior in its policies [8].

In addition to updating the rules and protecting the culture of academic integrity, Maastricht University also made recommendations for integrating ChatGPT into the educational process, including the development of analytical and critical thinking skills, and assessment system, which involves avoiding plagiarism in advance (Table 1).

Table 1

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Recommendations for the use of LLM in higher education

Direction of application	Recommendations
Educational process	- - implement practices to improve the content and structure of the text generated by the ChatGPT; - - conduct a discussion with students about critical attitude to different sources of information; - developing tasks with citation of key aspects of the text; - - introduction to the advantages, disadvantages and basic information about GPTchat for students; - discussion of ChatGPT answers to training questions.
Designing PBL-proof assessments	- adding non-written components to tasks; - integration of module content into written assignments and reviewing written assignments based on the content of the module; - students' arguments for disagreeing with the original source of information; - - analysis requirements based on class discussion and details of visual, audio and video material; - tasks that involve analyzing recent events that are not in the AI tool's database; - - the organization of a greater number of on-site examinations in a controlled environment; - proof of authorship by the students.

Created by [9]

Upon scrutinizing the landscape of international education, it is equally crucial to delve into the ramifications of AI tools on the Ukrainian higher education system. The conditions of quarantine measures, and later the war, forced educational institutions to switch to distance learning. In such circumstances, the process of monitoring students' academic integrity is quite complicated.

In June 2023, Artur Gilka and the 'SALT' editorial team conducted a survey on the Telegram platform among student chats, asking the question 'Do you use AI for learning?'. The number of respondents reached 808 during the week of the survey. The results are as follows: "Yes" - 314 votes, "No" - 187 votes, "It does everything for me" - 160 votes, "I use it for idea generation without plagiarism" - 147 responses (Figure 3). The results show that a significant proportion of respondents use LLMs during their studies, which emphasizes the importance of introducing the useful use of AI tools in domestic higher education institutions. Furthermore, it suggests the imperative need for an immediate update of universities' academic integrity policies.
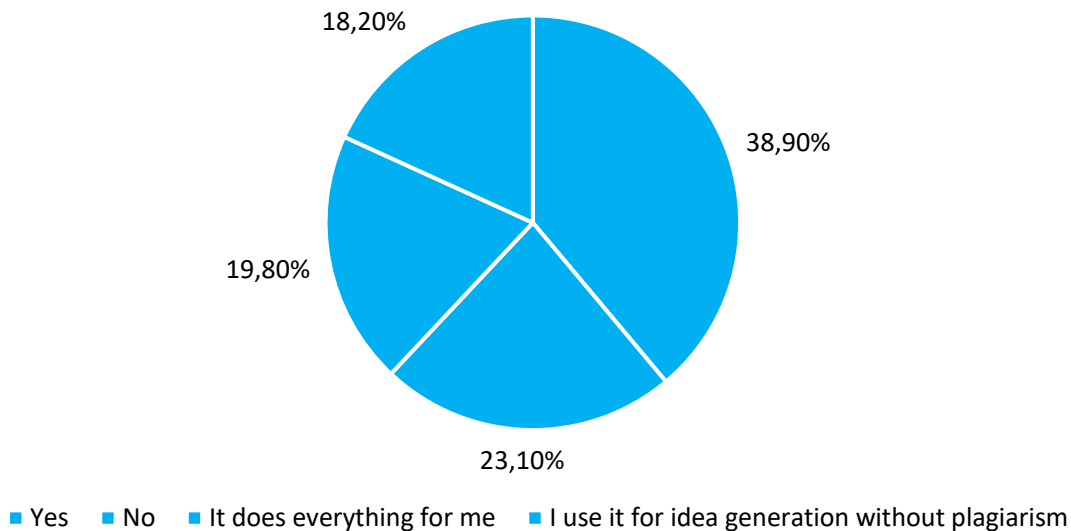
Figure 3. Results of a survey of Ukrainian students on the use of AI as of June 2023 [10]

The biggest problems that make Ukrainian students misuse AI tools are the following:
- Uninteresting and useless tasks in the education system that do not provide useful skills to students;
- Lack of student motivation;
- A large number of primitive tasks and a relatively small amount of practice [11].

On the positive side, there are currently few in-service training programs for teachers offered by state institutions. In particular, on 7 November, a series of training events for academic staff of higher education institutions "Artificial Intelligence and the Future of Education" was launched by the Expert Committee on the Development of Artificial Intelligence with the support of the Ministry of Digital Transformation of Ukraine. More than 1100 teachers registered for the event [12].

Modern higher education institutions are not only custodians of academic traditions and characterized by overall efficiency, but also have significant potential for innovation and original initiatives [13]. Awareness of this fact is important for unlocking opportunities for transformation in higher education. Currently, Ukrainian universities have only just begun the process of transforming educational methods, as evidenced by the large number of webinars aimed at raising awareness among educators and teachers.

Scientists in Ukraine concur with their international counterparts that the appropriate use of artificial intelligence tools can save time and enhance skills. In addition to the previously mentioned aspects, Olena Panukhnyk emphasizes the benefits of AI such as automating routine selection and admission processes, the potential for virtual mentoring, fast processing of large amounts of information, interpreting gained knowledge to generate new ideas and meet the needs of distance education. In her opinion, the ethical scalability of artificial intelligence tools should be accompanied by the responsibility of educational institutions to ensure and implement the process. Educational institutions should analyze and reveal the problems of dishonesty, unethical behavior, and fraud in academia to future generations. They should also provide conditions that do not require resorting to academic dishonesty [14].

When examining the integration of AI tools in the educational space, using Sumy State University as an example, it is evident that the university has not updated the provisions of the Code of Academic Integrity. However, upon reviewing the publicly available discipline regulations, it is clear that each teacher independently chooses their policy on using AI tools and announces it at the beginning of the course.

Other Ukrainian university, Kherson State University has a policy regarding the use of artificial intelligence. The purpose of this document is to inform students about the potential benefits of AI as an assistant. It includes recommendations for AI tools to aid in learning, research, and teaching, as well as guidelines for their use. The document recommends using AI tools to translate text and learn foreign languages, review program code, analyze AI-generated text and develop critical thinking, self-check by generating tasks, search for information on demand, restore documents, etc. Due to numerous logical errors and contradictions, it is not recommended to use it for calculation tasks, essays and tests [15].

So, having comprehensively examined the various potentials and drawbacks associated with the incorporation of language models in higher education, as elucidated by diverse scholars, it is evident that their integration constitutes an ongoing phenomenon. Nonetheless, it is imperative to underscore that the efficacy of AI tools will be realized only through the concerted efforts of higher education institutions in formulating judicious practices for their implementation, as expounded in the aforementioned examples. This necessitates a commitment to upholding academic integrity and fostering the cultivation of critical thinking and analytical skills.

Analysis of survey results

Survey Development

The survey design was developed through a collective work package collaboration, and the process was initiated with a joint WP virtual meeting where the overall design was discussed. In order to carry out the survey, firstly, the partners conducted a literature review on transforming higher education teaching and evaluation approaches through AI Chat tools usage in their countries and identified the state of the art in which issues are addressed, practices and policies in the education processes of each country. Then, the findings in 6 countries were evaluated and the questions to be used in conducting the survey were clarified based on the common elements for 6 countries. The responses collected from 6 countries regarding the common questions used in the data collection process are presented in detail in the following sections.

Research Questions

The research study was designed to address the following research questions:
- **Demographic questions:** Country, age, gender, education level and position.
- **Area 1:** Are you familiar with the concepts such as Artificial Intelligence (AI), Generative AI, data science,machine learning and AI chatbot? Besides one more open-ended question about to collect detail information on Artificial Intelligence knowledge and understanding.
- **Area 2:** Have you used or encountered these AI tools in your daily life such as AI chatbots, Image generator, Image/ video editor, Video generator, Sound and music generator and Computer vision? Besides one more open-ended question in order to gather information about the usage situations and ways.
- **Area 3:** What AI chatbots do you use such as ChatGPT https://chat.openai.com/, Google Bard https://bard.google.com/ and Bing Chat?
- **Area 4:** Do you think AI technologies could help improve the study process in higher education? Besidestwo more open-ended questions 1) How could AI technologies, in your opinion, help improve the study process in higher education? 2) Could you provide examples or share experiences when AI tools were helpful or necessary in study process? (Only for academicians)
- **Area 5:** There are six statements regarding AI in the education process with 5 Likert scale which are

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below:

Do you use AI tools in the assessment process? (Only for academician)
Do you use AI tools to create personalized learning approaches? (Only for academician)
Do you have sufficient knowledge and skills for the use of AI technologies in the study process? (Only for academician)
Do you feel the need to enhance your knowledge and skills in using AI technologies in the study process if they were available? (Only for academician)
Do you agree that AI creates **opportunities** for the improvement of the education/study process?
Do you agree that AI poses **challenges** to the education/study process?

- **Area 6:** There is a SWOT analysis in order to analyse the strengths, weaknesses, opportunities, and threats that the participants believe AI can create in the higher education studying process. To collect data, the SWOT analysis includes 4 main topics regarding strengths, weaknesses, opportunities, and threats.

Description of Data Collection
The Ukraine research was conducted by Sumy State University which consisted of 10 in depth interviews (IDIs) with experts in the field and 10 IDIs with academicians and 5 university administrators from Sumy State University and private companies deals with AI programming. The total number of participants is 25 from Ukraine.

The interviews were conducted between December 2023- January 2024. 80% interviews were carried out face-to-face as planned, whereas 20% interviews had to be performed online. All interviews were performed in national languages.

Findings
The findings of the study are categorised under three main headings according to the positions of the participants in higher education institutions. The results for the three main groups of participants are as follows.

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➢   **Findings of Experts in the field**
Demographics:

The survey included 10 experts from Ukraine, mainly from the programming, AI sector. The age range of participants varied from 23 to 55 years old. Both male and female experts participated (Figure 4), mostly with doctoral degrees (Figure 5).
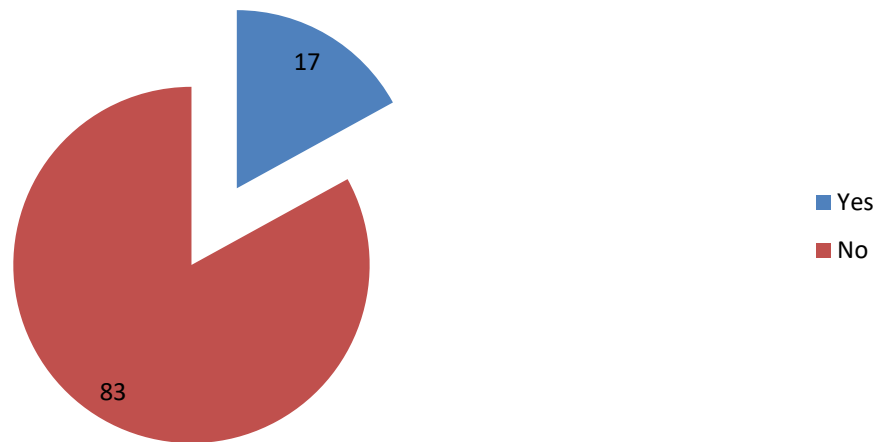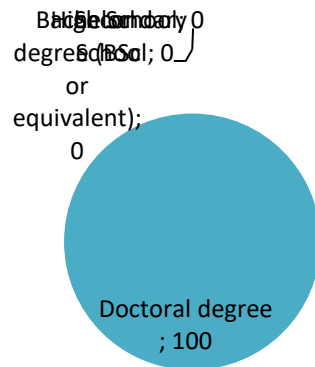

Figure 4. Gender of Participants, %

Figure 5. Education Degree of Participants, %

Area 1: Awareness and Understanding of AI:
100 % of participants confirmed that they are familiar with concepts AI, Generative AI, Data science, Machine learning, AI chatbot. Experts defined AI as: "Artificial intelligence (AI) is the ability of artificial

information programs and systems to understand, analyze, learn, and solve problems that typically require human intelligence", "AI is a field of computer science that focuses on creating programs and systems that demonstrate intellectual capabilities similar to those of humans", "Artificial intelligence is a "smart" digital system that can make decisions and act on the best human practices it knows and has learned" and other. Experts emphasize some main AI opportunities: gathering and systematization information, define trends among data from different sources. Also several respondents argue effective decision making with AI tools.

Thus mostly experts estimate AI as effective tool for education for today education and prognoses future wide opportunities AI tools for higher education in aspect of automatisation formal content part of education.

Area 2: Utilization of AI Tools:

Respondents' answers about AI tools show t AI chatbots are most useful and wider involving in daily life activity of experts. Also image/ video editor is important tool for experts in Ukraine (Figure 6):

- 100 % used AI chatbots;
- Image generator is used by 40% of respondents;
- Image/ video editor is used by 90% of participants;
- Video generator is often added to their daily life only 50% of experts;
- Sound and music generator is useful tools for 40% of participants;
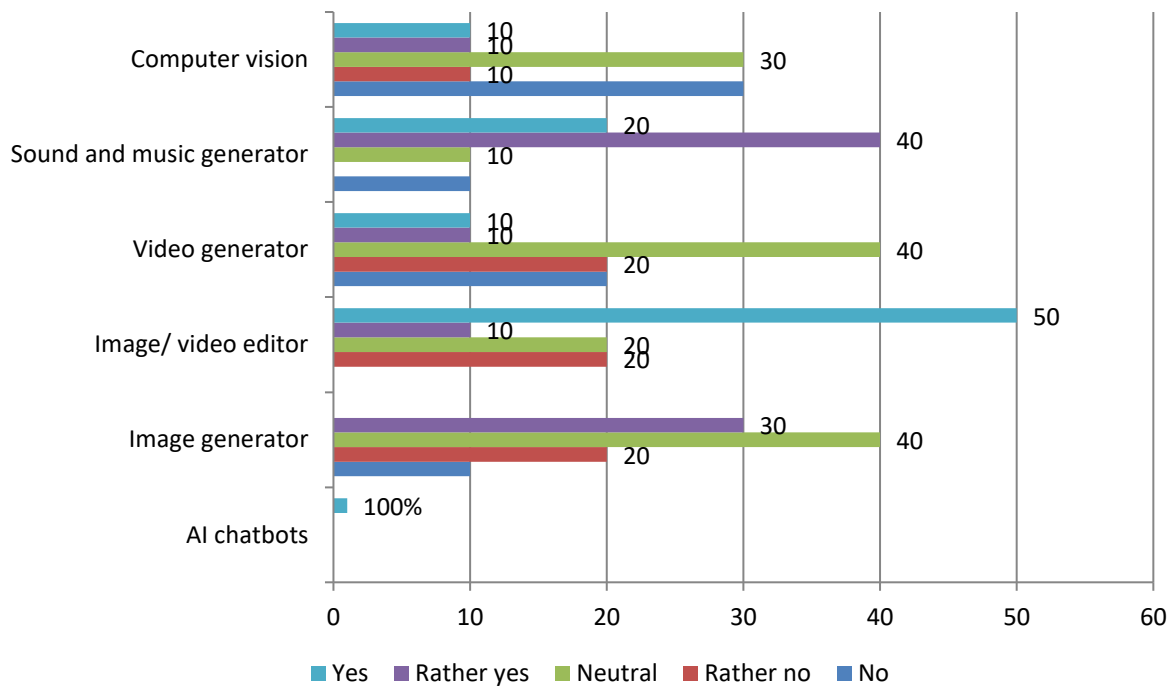- Computer vision is used by only 40% of experts.

Figure 6. Have you used or encountered these AI tools in your daily life?, %

Area 3: The Most Used AI chatbots:

All participants define ChatGPT as most common used AI chatbots.

Area 4: Perceptions on AI in Higher Education:

Experts agree that artificial intelligence can be an effective assistant in organizing the educational process and broadcasting information. They consider the disadvantages of the use of artificial intelligence in higher

education to be the limited access of universities to these technologies, a decrease in the motivation of students to produce new knowledge, and the uncertainty of the ethical aspects of the use of technologies, especially in the field of artistic activity.

However, concerns have been raised about the technical capacity of universities, accessibility issues for students, and the ethical implications of implementing AI in education.

Area 5: AI in The Education Process:

Experts conclude that AI technologies hold immense promise for fostering a more humane and inclusive higher education experience. By tailoring learning experiences to individual needs through personalized tutoring and automated grading, AI cultivates an environment where students receive timely support and feedback. The integration of language translation tools ensures that diverse voices can be heard, fostering collaboration among students from different linguistic backgrounds. Moreover, the predictive analytics offered by AI not only identify students at risk but also enable early intervention, emphasizing a compassionate approach to education. Virtual labs and simulations, guided by AI, democratize access to practical experiences, creating a more equitable learning environment.

Also AI technologies help both teachers to create a lesson plan, prepare teaching material, and students themselves to prepare for solving educational problems, create their own plan for self-study.

In general, in opinion of respondents AI technologies can create a more adaptive, interactive and efficient learning environment in higher education.

Area 6: Strengths, Weaknesses, Opportunities, and Threats (SWOT) Analysis:

Strengths: AI contributes to the transformation of the economy and symbolises a new stage not only in the history of digital technologies, but also in the global development of modern civilization.

Weaknesses:

- Not enough high-quality training on using AI;

- Security and ethical aspects, social and psychological consequences, loss of the sense of "being human", a kind of dissolution in fear of people as social beings;

- AI is used in critical infrastructures, education and training, product safety components, employment, employee management and access to self-employment, basic private and public services, law enforcement, law enforcement that may interfere with fundamental human rights, asylum and border control law enforcement that may interfere with fundamental human rights, migration management, asylum and border control, administration of justice and democratic processes.

Opportunities:

- Assessment (including automatic assessment and assessment of learning progress and students' attitudes to learning, individual and group assessment, etc.);

- Learning management (learning analytics, sequencing of educational plans and programmes, instructional design and student placement).

Threats:

- Tool for disinformation; filling with unreliable texts, photos, videos, which can lead to the inability of a person to establish the truthful information;

- Impact of AI on the labour market, the loss of jobs due to the lack of need for professions that involve performing, in particular, technical tasks (translators, assistants, etc.;

- Using huge amounts of analysed data, it can build unexpected behaviour in particular, generate and run own computer code, which can lead to the use of AI as "robot soldiers";

- Ethical problems in using;

-Mindless copying of information be students, lack of verification of the information that is issued by GPT chat.

➢ **Findings of Academicians**

Demographics:

The structure of respondents is 30% of women, 70% of men . The age distribution varies, with a majority falling between the ages of 30 and 60. The educational background is primarily at the doctoral level (Figure 7 and Figure 8).
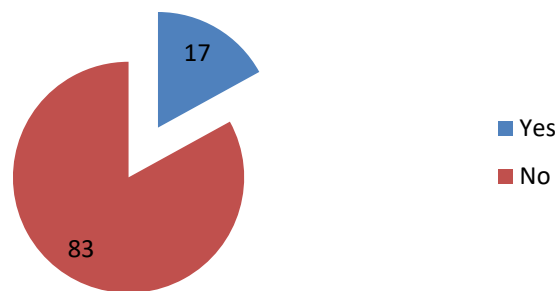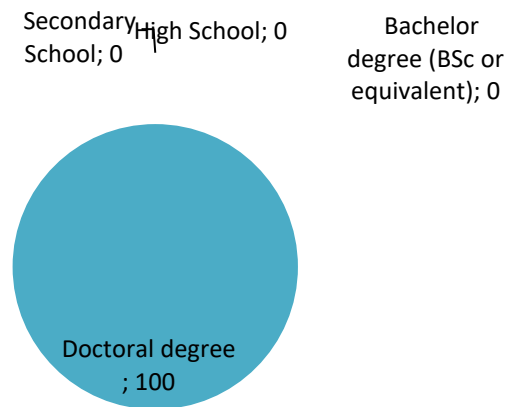

Figure 7. Gender of Participants, %

Figure 8. Education Degree of Participants, %

Area 1: Awareness and Understanding of AI:

Respondents have mostly the similar level of understanding the basic concepts of artificial intelligence. All of them know AI concept and AI chatbot, 8 from 10 participants are good in explanation features and difference in Data Science and Machine learning, 5 from 10 respondent understand concept of Generative AI.

Thus, academicians have basic understand of AI concepts. The same time there is some problem to identify difference among concepts of AI.

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Area 2: Utilization of AI Tools:

Respondents' answers about AI tools show that academicians as experts too use AI chatbots g in daily life activity. Also image/ video editor is important tool for experts in Ukraine (Figure 9):
- 100 % used AI chatbots;
- Image generator is used by 40% of respondents;
- Image/ video editor is used by 60% of participants;
- Video generator is often added to their daily life only 20% of academicians;
- Sound and music generator is useful tools for 40% of participants;
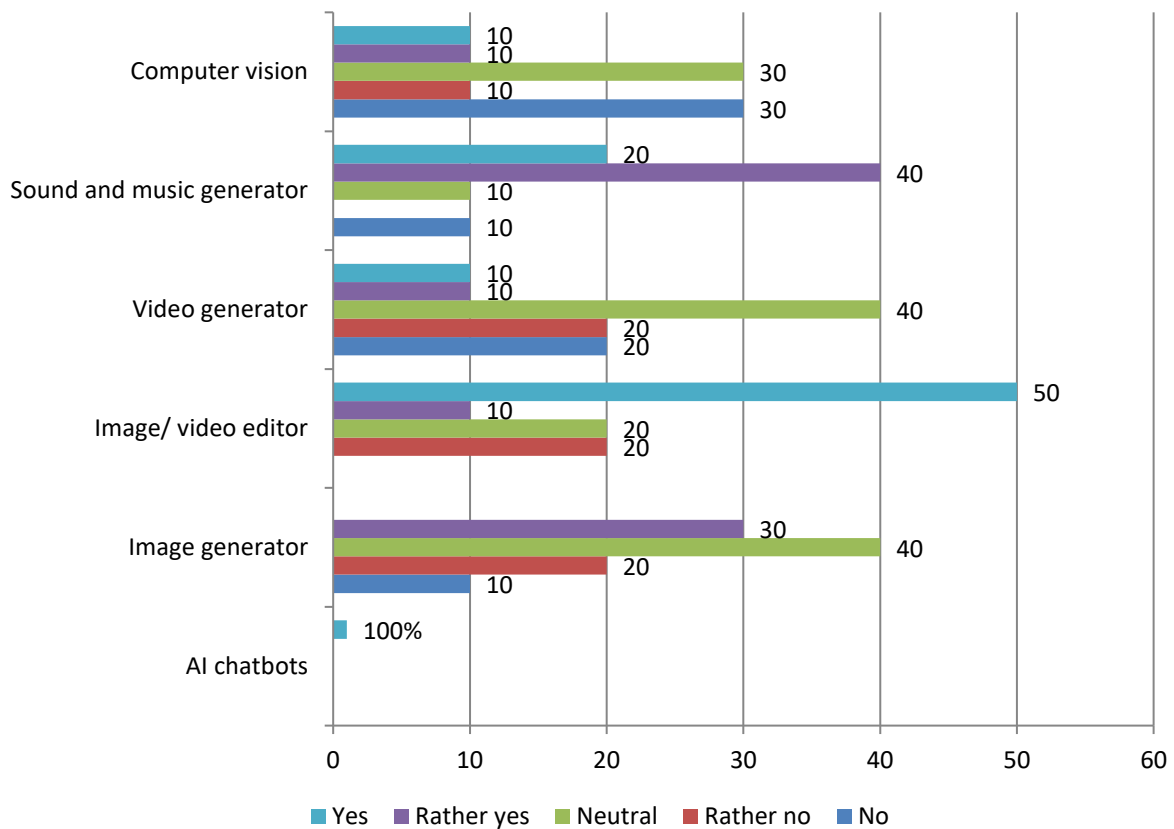- Computer vision is used by only 60% of academicians.

Figure 9. Have you used or encountered these AI tools in your daily life?, %

Area 3: The Most Used AI chatbots:

All participants confirmed that ChatGpt is most uses AI tool.

Area 4: Perceptions on AI in Higher Education:

All participants define that involving AI technologies in higher education can give educational effects. Among them:

- Increasing interactions among students;
- Distribute more effectively time between formal and creative tasks$
- Effect of selfchecking;
- Increasing effects of selflerning.

Area 5: AI in The Education Process:

Respondents emphasize that AI can play a key role in enhancing the educational process in higher education across various aspects. Chatbots can provide informational and educational support to students by answering their questions and assisting in problem-solving. Virtual assistants can aid teachers in performing routine tasks, such as responding to questions or organizing schedules. Technologies like virtual reality can create realistic virtual environments to deepen the study of specific subjects

Also academicians confirm that AI can analyze data about students, taking into account their individual abilities, learning pace and strengths. Based on this data, personalized training programs are created that contribute to more effective learning of the material.

Other possibility of AI that determined by academicians is automated grading and reporting. AI can automate the process of grading student work, allowing teachers to devote more time to individualized instruction. Also, the systems can provide fast and objective reporting.

Area 6: Strengths, Weaknesses, Opportunities, and Threats (SWOT) Analysis:

Strengths:
- AI enables personalized learning experiences;
- Automated grading, feedback, and administrative tasks;
- It enhances accessibility for students with diverse backgrounds and abilities;
- Quick access to information;
- Quick collection and analysis of data
- Optimization of the educational and cognitive process in the field of information search and data processing
- AI can create interactive lessons and platforms that increase student engagement and engagement.

Weaknesses:
- AI algorithms may perpetuate biases present in training data (unfair outcomes);
- Privacy risk;
- Displacement of jobs;
- Ethical problems;
- Lack of human factor;
- Ethical and confidentiality issues arise when implementing AI technologies;
- Unreliability and inaccuracy of the received data;
- Possibility of received erroneous data according to the request.

Opportunities:
- Innovative teaching approaches;
- AI enables institutions to continuously improve curriculum;
- It can dynamically adjust learning paths based on customized and relevant content;
- Operational communication (chat-bots);
- Processing of input information;
- Data analytics and business analytics;
- Search for alternative information;
- Generation of ideas according to the given parameters.

Threats:
- Excessive dependence on AI;
- Could potentially lead to job displacement for educators;
- Ethical considerations, including issues related to privacy, accountability, and bias;
- Resistance from educators or institutions to embrace AI-driven changes in teaching methods;
- Loss of jobs;
- Violation of privacy;
- Automated weapons;
- Ethical problems;
- Presence of plagiarism;
- Dishonesty;
- Reduction of scientific abilities of students.

➢ **Findings of University Administrations or Representatives of HEIs**
Demographics:

The survey included 5 respondents from Ukraine from the university administration sector. The age range of participants varied from 45 to 70 years old. Both male and female experts participated (Figure 10), all with doctoral degree.

Figure 10. Gender of Participants, %

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Area 1: Awareness and Understanding of AI:

University administrations participants mostly work with decision making. That why they emphasize that they know more less understanding of AI concepts, but don't use AI tools.

Area 2: Utilization of AI Tools:

Thus in average university administrations participants don't use AI tools in the work, but they use it in personal life for:
- Search, clarification of information;
- Generation of images/icons for content
- Entertainment.

Area 3: The Most Used AI chatbots:

Respondents give answers, that sometimes they used ChatGpt, AI chatbot.

Area 4: Perceptions on AI in Higher Education:

Administration staff agree that artificial intelligence can be an effective assistant in organizing the educational process and management. AI-driven language learning platform (or chats) can be used for virtual language exchanges. Through natural language processing, the AI can facilitates conversations, corrects pronunciation, and offers cultural insights. Also its possible to create any educational course using exclusively Chat GPT.

Area 5: AI in The Education Process:

Respondents formulate such main advantages of using AI in higher education
- Education modernization (updating);
- Individualization of approach to learning;
- Improvement of personal students development trajectory;
- Increasing in learning speed.

Area 6: Strengths, Weaknesses, Opportunities, and Threats (SWOT) Analysis:

Strengths:
- accessibility to the knowledge;
- personalize and adaptive learning;
- independence from feelings.

Weaknesses:
- dependence on initial data;
- need to study new technologies;
- need for special skills.

Opportunities:

- task automation;
- creating individual learning plan;
- help in search and generated ideas;
- adaptive knowledge delivery.

Threats:
- ethical;
- plagiarism, fake data, cheating;
- data security, transparency etc.

Therefore, the results of the study indicate that the respondents note the potential of positive influence of artificial intelligence on the results and process of education. At the same time, respondents emphasize the lack of developed mechanisms for the organizational and technical implementation of artificial intelligence in educational processes.

Conclusions

The study examines current state of understanding and potential of using AI in higher education in Ukraine. Respondents belong to 3 groups: experts, academicians, administrative staff.

Conclusion for Experts in the Field:

Experts define opportunities of AI in aspects of personalized learning (AI can tailor educational materials and experiences to individual student needs, allowing for personalized learning paths); efficiency (AI can automate administrative tasks, grading, and even provide instant feedback, saving time for both educators and students); accessibility (AI-powered tools can make education more accessible to students with disabilities by offering alternative formats and adaptive learning experiences); data analysis (AI can analyze vast amounts of student data to identify trends, patterns, and areas for improvement, enabling educators to make data-driven decisions) innovation (AI technologies can foster innovation in teaching methods, curriculum design, and educational research).
The same time it is difficult for them predict what is potential level of change affected by AI and what is staffs skills need to be improved.

Conclusion for Academicians:

Academicians has idea about replacement AI most of their job. They emphasize advantages of using AI in higher education: support lifelong learning initiatives by offering flexible, accessible, and personalized educational experiences; facilitation collaboration among students and educator; development essential skills such as problem-solving, critical thinking, and digital literacy through interactive learning experiences.
But the same time they are afraid of loss human factor in education, and thus human diversity.
Also important issue that a half of academicians doesn't know and don't feel necessity to use AI tools in education.

➢ **University Administrations or Representatives of HEIs**

In the opinion of administrative staff it needs to be ready for AI technologies costs and involving AI in higher education architecture. But implementing AI technologies in education can be expensive, potentially exacerbating existing disparities between well-funded and under-funded institutions. Also they emphasize that their managerial work can be improve with AI as assistant.

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