ARTÍCULO DE INVESTIGACIÓN

Aprendizaje basado en las preferencias humanas: un estudio piloto sobre la percepción de los estudiantes sobre el uso de la IA y ChatGPT

Dalina Dumitrescu *

Resumen

El estudio examinó la conciencia, comprensión y actitudes de los estudiantes hacia la inteligencia artificial (IA) y su impacto en la gestión del proceso educativo. Se utilizó una encuesta con preguntas abiertas. El objetivo era analizar la percepción de los encuestados sobre la importancia, uso e impacto de la IA, incluyendo ChatGPT, en el ámbito laboral y educativo en el que participan. Se aplicó a 25 cursantes de maestría en la Facultad de Finanzas y Banca de la Universidad de Estudios Económicos de Bucarest. Las conclusiones se basaron en el procesamiento de las respuestas abiertas utilizando una herramienta de IA. Los hallazgos revelaron que todos los encuestados eran conscientes de la presencia de la IA. Las principales fuentes de información sobre la IA fueron el lugar de trabajo, las redes sociales y los amigos. El análisis del sentimiento de las respuestas mostró un coeficiente positivo más alto con respecto al impacto de la IA en la educación. Aunque se reconoce que este estudio piloto tiene limitaciones, las principales conclusiones indican que los estudiantes están receptivos a la sociedad digitalizada. El uso de plataformas como ChatGPT y software de IA en actividades prácticas es limitado. Valoran con cautela la experiencia de trabajar con generadores de texto de IA. El predominio de sentimientos positivos relacionados con el uso de ChatGPT tanto en el lugar de trabajo como en las actividades educativas proporciona una base sólida para la integración formal, coherente, eficiente y participativa de la IA en enfoques y procesos educativos responsables.

Palabras clave: educación superior, IA; impacto de la IA; ChatGPT; Digitalización y gestión educativa.

Abstract

Learning based on human preferences: A pilot study regarding the student's perception of the AI and the use of ChatGPT

The study examined the awareness, understanding, and attitudes of students towards artificial intelligence (AI) and its impact on educational management. A survey with open-ended questions was used for data collection. The objective was to analyze the respondents' perception of the importance, use, and impact of AI, including ChatGPT, in their workplace and educational settings. It was administered to 25 master's students

at the Faculty of Finance and Banking, University of Economic Studies in Bucharest. The conclusions were based on processing the open-ended responses using an AI tool. The findings revealed that all respondents were aware of the presence of AI. The main sources of information about AI were the workplace, social media, and friends. The sentiment analysis of the responses showed a higher positive coefficient regarding the impact of AI on education. While acknowledging the limitations of this pilot study, the main conclusions indicate that students are receptive to the digitalized society. The use of platforms like ChatGPT and AI software in practical activities is limited. They cautiously value the experience of working with AI text generators. The predominance of positive sentiments related to the use of ChatGPT in both the workplace and educational activities provides a solid foundation for the formal, coherent, efficient, and participatory integration of AI into responsible educational approaches and processes.

* Universidad de Estudios Económicos de Bucarest, Rumania, ORCID ID: https://orcid.org/0000-0002-4633-1791   E-mail: dalina.dumitrescu@fin.ase.ro

1. Introduction

In the last 10 years, artificial intelligence (AI) has developed a potentially disruptive impact on all human society. Artificial Intelligence (AI) refers to reproducing human ability to get and use knowledge and skills by machines, particularly computer systems. These include learning (acquiring knowledge and skills through experience), reasoning (concluding available information), problem-solving (finding solutions to complex challenges), and decision-making (selecting the best course of action based on analysis). AI aims to create systems that mimic human cognitive abilities, enabling them to perform activities that typically require human intelligence. Here are some key areas where AI has made and continues to make a significant impact:

TABLE Nro. 1
KEY AREAS WHERE AIHAS A SIGNIFICANT

Application Area	References	Key Points
Industries Revolutionization via AI Automation	Jarret et al. (2021), Sarmah & Shekhar (2019)	Streamlining processes, reducing human intervention, and enhancing efficiency (Automation and Efficiency)
AI in Medicine	Saraswat et al. (2022), Yu et al. (2018)	Assisting in medical diagnosis, drug discovery, personalized treatment plans, and predictive analytics (Healthcare)
AI in Finance	Milana et al. (2021), Shamima et al. (2022)	Analyzing financial data, informing trading decisions, detecting fraud, and predicting market trends (Finance)

AI in Manufacturing	Nti et al. (2022), Yao et al. (2017)	Optimizing production processes, enhancing quality control, and enabling predictive maintenance of machinery (Manufacturing)
AI in Transportation	Prashant et al. (2022), Bharadiya (2023)	Revolutionizing transportation, reducing accidents and congestion, and improving efficiency (Transportation)
AI in Entertainment	Fu et al. (2002), Nader et al. (2022)	Content recommendation, computer-generated graphics, animations, and enhanced video game experiences (Entertainment)
AI in Natural Language Processing	Chowdhary (2020), Raina et al. (2022)	Enabling chatbots, virtual assistants, accurate language translation, and revolutionizing interactions with technology (Natural Language Processing)
AI in Global Connectivity	Leyva-Mayorga et al. (2022), Akhavan et al. (2020)	Facilitating communication across language barriers, fostering global collaboration and understanding (Global Connectivity)
AI in Environmental Sustainability	Tsolakis et al. (2022), Feroz et al. (2021)	Climate modeling, analyzing environmental data, optimizing energy consumption, and managing natural resources efficiently (Environmental Sustainability)
AI in Personalization in Marketing	Chandra et al. (2022), Gao et al. (2022)	Analyzing consumer behavior, offering personalized product recommendations, and executing targeted marketing campaigns (Personalization in Marketing)
AI in Cybersecurity	Ansari et al. (2023), Zhang et al. (2022)	Detecting cyber threats, identifying anomalies, and strengthening security measures against data breaches and attacks (Cybersecurity)
AI in Agriculture	Liu (2020), Sharma (2021)	Precision farming, optimizing irrigation, monitoring crop health, and predicting yield outcomes (Agriculture)
AI in Social Impact	Shangyao et al (2007), Linardos et al. (2022), Lee et al. (2023), Chiou et al. (2022)	Significant contributions in disaster response, analyzing large-scale data during emergencies, and assisting in resource allocation for relief efforts (Social Impact)
AI in Education	Alam (2022) Liu et al. (2023) Sung-Hee et al. (2023)	Transforming education through personalized learning experiences, intelligent tutoring systems, automated grading, and adaptive learning platforms (Education)

Source: constructed by the author in dialog with ChatBPT (2023)

In essence, AI's significance lies in its ability to process and analyze massive volumes of data, make predictions, and perform tasks that were previously considered beyond

the capabilities of machines. It is reshaping industries, enhancing human capabilities, and driving innovation in countless ways.

While the transformative impact of AI has been largely positive, there are also concerns about ethical considerations, job displacement, privacy issues, and biases in AI algorithms. Balancing these challenges while harnessing AI's potential for positive change is a critical ongoing endeavor.

2. Specific background information

In the last 15 years, the main stakeholders and quality accreditation agencies for higher education had a specific objective to assess the introduction of technology in the education process, in general, and at the level of individual courses in special Bakir (2016), Hodges et al. (2022)

Incorporating technology into the classroom has been a positive step forward for education. Using laptops and dedicated sites to store documents, searching the web for resources, and utilizing statistical software such as Excel, Stata, R, and Python have all been beneficial in the social sciences. Additionally, simulations and games can help transfer knowledge in an engaging way. As we move towards in-person learning again, it's important to consider how we can continue to integrate technology effectively and thoughtfully while preserving the value of face-to-face interaction. The adoption and the extent of implementation of education technology were highly related to the resources of the university (approved budget to buy the technological infrastructure in the social fields where the teaching process could have been realized in a classical way without technology). The ability and openness of teachers to identify, design, and adopt new elements of educational technology in the classroom is a great challenge, especially where teachers' area of expertise is not modern technology.

The historical development of AI in education reflects a journey from early theoretical concepts to practical applications that are transforming how learning is delivered, monitored, and personalized. As AI technologies become more sophisticated, the potential for enhancing educational experiences and outcomes continues to expand. Table 2. Summarizes the key developments in AI's role in education across different decades.:

TABLE Nro. 2
AI'S ROLE IN EDUCATION ACROSS DIFFERENT DECADES

Time Period	Key Developments	Examples and Applications
1950s-1960s	Emergence of AI as a field of study, Turing Test proposed by Alan Turing	Early programs: "Logic Theorist," "Geometry Theorem Prover"
1970s-1980s	Development of knowledge-based systems and expert systems, MYCIN aids in diagnosing infectious diseases	Cognitive science and AI research influence intelligent tutoring systems (ITS), e.g., Soar, ACT-R

1990s	Rise of Intelligent Tutoring Systems (ITS), examples like the Geometry Tutor and AutoTutor	World Wide Web emergence facilitates web-based learning, AI used for adaptive e-learning environments
2000s	Advances in machine learning and data analytics enhance ITS capabilities, educational games and simulations with AI integration	Games like "Zoombinis" and "Math Blaster" incorporate AI for engaging learning experiences
2010s	Rise of Massive Open Online Courses (MOOCs) with AI scaling instruction, automated assessments, and personalized recommendations	Introduction of chatbots and virtual assistants like IBM's "Jill Watson" for student assistance
2020s and Beyond	Continued role of AI in education, supporting adaptive learning, learning analytics, and real-time feedback systems	Natural language processing and sentiment analysis gauge student emotions and engagement levels, addressing ethical concerns
2022	November 30, 2022 Chat GPT was launched	ChatGPT employs deep learning, a branch of machine learning, to generate text that closely resembles human language using transformer neural networks. The transformer model anticipates text outcomes, such as the following word, sentence, or paragraph, by leveraging patterns observed in its training data. The training process initiates with general data and progressively transitions to more specialized data aligned with a particular task. ChatGPT initially undergoes training with diverse online text to grasp the nuances of human language. Subsequently, it refines its conversational skills by learning from transcripts, honing its ability to engage in meaningful dialogues.

Source: Constructed based on literature review by the author in dialog with ChatBPT (2023)

The limitations and the new rules imposed by the COVID crisis forced the adoption of technology in the education process to a new level of adoption and implementation. Given the forced and sudden lockdown of the entire social life, to maintain the educational process uninterrupted during the pandemic, the universities looked to the experience of the total online programs as a rescue solution to accomplish their mission.

The aim was to ensure for the graduates the exposure and experience regarding the whole curriculum, the core professional set of knowledge, skills, and attitude as close as possible to normal time. In other words, to attain learning goals and objectives as in the face-to-face educational process. Starting with 2020 a lot of debates were in the main flow of literature related to the pros and cons related to in-person and virtual learning,

As a result, Universities struggled to build strong virtual learning communities as new online education models are going beyond the replication of face-to-face activities, see Webinar: Unlocking the Power of AI: How Tools Like ChatGPT Can Make Teaching Easier and More Effective-HBP, May 2, 2023.

However, the COVID pandemic did not mean only the adoption of online education models with already calibrated technology that coexisted previously with face-to-face ones. Technology has advanced and opened generously to the public with tools, models, and products, especially in the area of artificial intelligence (AI).

The tools and products offered on a large scale and often free of charge by AI, and recently developed Artificial Intelligence Text Generators (AITG), with application for research work and implicitly also in educational activity (reports, essays, finalization works), they represent completely new facilities with profound implications, Bahroun (2023).

Using AI, the online research of information and documentation sources is much simplified the part of conception, structuring and elaboration of research works (essays, final papers doctoral thesis) including the innovation and personalization components is done automatically. Finding automatic answers to the questions to quizzes or field exams including science exams is more and more accurate. Thus, the human factor's contribution and work based on his/her inherent knowledge, skills, and abilities is no longer relevant.

The tasks to be realized by the students such as admission essays, research papers, field essays and reports, innovative code lines writing, and final papers (such as undergraduate, dissertation, and Ph.D. thesis) supposed to the personal contributions based on the accumulated knowledge, skills, and attitudes. The individual contributions and the personal innovative approach were built by educational experiences at courses and trans-curricular levels and were the base for assessing the learning and grading, Holland (2023).

The code of ethics in all the universities states strong rules for the ethics in using online resources and plagiarism (similitude check).

In this aim, in many universities introduced for checking the effective enforcement of integrity rules in the academic intellectual contributions and assessing the knowledge, different systems (such as shields in place to limit the access of the students to the web pages for the in-campus exams) or antiplagiarism softs- similitude check (for the final papers).

In the current period, an extremely important question is to what extent AI should be allowed, adopted, or limited/reduced/prohibited in the process of building and

consolidating the fund of knowledge and skills for young people, in the process of forming the professional bases of independent work.

ChatGPT was released in 2019 by OpenAI, followed by an updated version of this conversational chatbot in late November 2022 based on Reinforcement Learning with Human Feedback (RLHF).

ChatGPT is algorithm-driven and aims to generate human-like text that can be used in conversation. As a functionality, it can answer questions, provide information, and participate in natural language discussions with users. ChatGPT is used as a customer service chatbot, virtual assistant, and conversational interface for websites or mobile applications. It can also be used to generate content for social media or create chatbot scripts for marketing or entertainment purposes. It is a powerful tool for creating chatbots that can have intelligent and engaging conversations with users, - see Webinar-Will AI Replace the Educator- HBP August 10, 2023,

As for educational applications, it is mentioned by (Hwang et al., 2020) that there are several roles of AI in education, such as serving as an intelligent tutor, guidance, learning tool/policy partner, or advisor.

Chen et al. (2020) found that research in the field of Artificial Intelligence in Education AIEd rapidly developed around 2012, and the number of articles, grants, and citations in the field is still increasing. The significant increase in citations received by AIEd studies demonstrates the wider impact and influence of AIEd research in academia. The findings are consistent with those from the main flow of research results (e.g., Chen et al., 2022, Chu et al., 2022, Chiu et al., 2023)

Recent research studies have significantly contributed to the understanding of how AIEd and technology can be effectively integrated into educational settings, fostering personalized learning experiences, improving learning outcomes, and addressing important ethical and practical considerations.

As we transition back to face-to-face learning, it's important for us to consider how we can incorporate the benefits of virtual learning communities into our in-person education. We need to ask ourselves what worked well in the online format and how we can integrate those elements into the traditional classroom experience. At the same time, we should also reflect on what we value about face-to-face learning and make sure we preserve those elements. It's a balancing act, but by taking a thoughtful and intentional approach, we can create a truly dynamic and effective learning environment. Important works in educational data mining and learning analytics contributed to research on using data to understand and improve learning processes (Ryan et al., 2016).

Another important research line is intelligent tutoring systems, affective computing, and human-computer interaction in education, (Woolf et al., 2009), the development of cognitive tutors and intelligent tutoring systems mainly applies cognitive science principles to education (Aleven et al., 2006).

3. Description of the gap in our knowledge that the study was designed to fill

Mijwil et al. (2020), studied the impact of artificial intelligence applications, their implication in learning, and how they can be employed in the future development of the teaching/learning process. They concluded that artificial intelligence is a key factor of growth in future digital societies and must be properly exploited to build a new world where future graduates must be competitive.

Ömer Osmanoğlu et al. (2020), collected student feedback from a university was utilized to evaluate course materials. The machines were employed to categorize the materials based on positive, negative, or neutral sentiments regarding each teaching resource. Subsequently, the course materials were enhanced by addressing the negative feedback.

Nikolić et al. (2020), started from student course assessment conducted at sentence-level analysis to identify one or more aspects in the sentences and classify their polarity into positive or negative sentiment.

Misuraca et al. (2021), Gkontzis et al. (2020) concluded that in an educational context, Opinion Mining allows processing students' comments and creating powerful analytics.

Shaik et al. (2023), concluded that through advancements in sentiment techniques and AI methodologies, student comments can depict their sentiment orientation with minimal human intervention. The significance of emotional analysis in education was examined across four levels: document level, sentence level, entity level, and aspect level. In conjunction with sentiment annotation techniques, the study delved into the role of AI in sentiment analysis using methodologies such as machine learning, deep learning, and transformers. The findings highlight the influence of sentiment analysis on educational processes, aiming to improve pedagogy, decision-making, and evaluation.

As we transition back to face-to-face learning, it's important for us to consider how we can incorporate the benefits of virtual learning communities into our in-person education. We need to ask ourselves what worked well in the online format and how we can integrate those elements into the traditional classroom experience. At the same time, we should also reflect on what we value about face-to-face learning and make sure we preserve those elements. It's a balancing act, but by taking a thoughtful and intentional approach, we can create a truly dynamic and effective learning environment. How do we educate using responsible the new technology mainly the one generated by AI and AITG specifically? The question is going beyond the simple one what the implications of the use of laptops and smartphones during class will be? It is about accepting or resisting using ChatGPT to do assignments and examinations. If accepted, what to do as responsible educators is not to diminish the quality of the learning process and attain properly the objectives assumed by the missions of our institutions.

In a recent webinar held by HBP were presented the results of a survey from June 2023 applied in multiple countries (UK, US, Germany, Spain, Australia, Nederland,

France) with the question "How is your school using the AI?" The 12 schools that responded formulated the answers at 3 levels of responsibility and implication: discussion, at the faculty level, and the school level. The main conclusion was that most educational institutions are at the early stages of using AI in their activity. Currently, they are in a period of exploration. The initiatives are mainly tactical and incremental, and the main uses of AI are material creation and AI chatbots, see Webinar-Experimenting with AI in the Classroom-Harvard School of Education- September 6, 2023

4. The study objective

The work, a pilot study, investigates to what extent the students in the master programs are aware of artificial intelligence, from which sources they got information about AI, and specifically about ChatGPT. We also investigated their opinion about the impact of AI on jobs and education, if they used ChatGPT, and for what purpose. Those questions are also the research questions of the study and the procession of the answers to them are presented in detail. According to our knowledge, there is no study investigating the perception and the sentiments of students regarding the AI influence at work and in education.

The positive effects of investigating students' opinions and sentiments are supported by research studies. For example, Chakraborty et al. (2020) used as an instrument for research a survey in which undergraduate students in an Indian university expressed their opinions on online education during the pandemic. The conclusions were that the students learn better in physical classrooms (65.9%) than through online education, and they felt that the teachers improved their online teaching. The students gave favorable evaluations to the software and online study materials employed as support. However, they expressed concerns about the stress associated with online education, noting its impact on their health and social life.

The paper is structured as follows: The methodology part will describe the approach and the tools used for the analysis of the answers, the next two parts will present the results and the discussion of the result. The conclusion will close the study.

5. Methodology

As presented in the introduction, most educational institutions are currently in the early stage of incorporating AI into their instructional activities.

From this perspective, the interest arose to investigate, in the form of a pilot study, whether at the level of the faculty where I work, the master's program students - predominantly employees - are familiar with the concept of AI. The study aims to explore from which sources they gather information about AI, and how they perceive the impact of AI on their professional activities, as well as on educational endeavors. Specifically, regarding ChatGPT, the students were questioned about their usage of it, their

experience with working hours involving it, and the specific activities for which they employed it. To the best of our knowledge, there is currently no such study conducted that delves into students' opinions regarding the impact of Artificial Intelligence Text Generators (AITG) on education, research, and the workplace.

At the end of May 2023, a questionnaire was distributed to the master's program students at the Faculty of Finance and Banking. The questionnaire was administered in paper format to the 25 students who were in attendance. Responses to the questionnaire, in English, were anonymous, and the collection process was conducted randomly. The purpose of gathering this information was to communicate to the students, and the response rate was 100%.

The questionnaire comprises 5 questions, out of which 4 are open-ended questions and one is quantitative. Two out of the 5 questions of the survey were inspired by the questions addresses online to the educated participants during the Webinar: Unlocking the Power of AI: How Tools Like ChatGPT Can Make Teaching Easier and More Effective-HBP, May 2, 2023.

The preparation of the survey is based on literature review to ensure that the questions are grounded in existing research and theories as well as the logic in the investigation of the awareness and use of new concepts/products services by individuals, In (2017).

Given the relatively short time after the release of the CHATGDP – only 6 months-the current study was developed as a pilot study, with a small sample of respondents to to identify potential issues with question wording, clarity, ambiguity, or issues with the questions addressed. Conducting the pilot study was intended to save time and to obtain valuable insights in an area where no other information was available. Some validation conditions were observed: (a) Ensure that questions are clear, concise, and easily understood by the target audience; (b) Ensure that questions are neutral and do not lead respondents to a particular answer; (c) Avoid wording that might introduce bias or influence respondents; (d) Gather feedback from respondents after the questionnaire has been administered, Mellinger et al. (2020).

The research questions of the study are aligned with the questions of the survey as follows: If the students are aware of artificial intelligence, and from which sources do they get information about AI (Q1); What is their opinion about the impact of AI on current jobs (Q2); What is their opinion about the impact of AI on education, (Q3); If they used ChatGPT- as working hours (Q4); For what purpose they used ChatGPT (Q5)

Considering the investigated area of interest, the decision was made to utilize open-ended questions.

The option for open-ended questions was determined by the arguments that the free-form gives space to respondents to answer in an open-text format and the freedom to express himself/herself in as much (or as little) detail as they prefer. Open-ended questions help to see the respondent's perspective, as the feedback is in their own words instead of preformatted answers. The free format allows getting more meaningful

answers, accurate responses, and a better way to analyze the sentiments of respondents, Siedlecki, (2022).

The processing of responses for the open-ended questions was carried out using the AI Monkey Learn tool, while the quantitative question was processed by the author using Excel.

AI text analysis employs natural language processing (NLP) to automate the classification and extraction of data from texts. This approach is highly effective, particularly in automatically analyzing open-ended survey responses. From the site Monkey Learn, it was extracted the relevant characteristics of the program. The machine learning models it uses can apply several pre-trained text analysis models that can process the survey responses very rapidly on the next dimensions (from the MonleyLearn site):

"*Sentiment Analyzer*: automatically analyzes text for opinion polarity (positive, negative, neutral).

NPS Feedback Analyzer: automatically sorts NPS responses by Ease of Use, Features, Pricing, and Support.

Keyword Extractor: extracts the most used and most important words from your survey responses.

Company Extractor: automatically extracts the names of businesses and organizations from surveys or any text."- *Excerpt from Monkey Learn site.* https://monkeylearn.com/blog/survey-analysis/

Given the purpose of the pilot study and the reduced complexity of the data collected, the survey answers were analyzed with a Sentiment Analyzer and keyword extractor.

For each open question processed with Monkey Learn, the paper presents the overall picture of the processing of the answers as well as the graphic representation of the focused subsections. For the quantitative question- question 4-, the graph of the results processed by the author manually is also presented.

6. Results

The main results of the analysis of survey answers are presented in line with the research question of the paper investigated by the survey questions. For question 1 will be presented all the elements obtained from the AI processing: The synthesis image (dashboard), the result from the keywords extractor (aspect count and Keywords cloud), the result for sentiment analyzer (positive-green, neutral orange, and negative–red) and the overall sentiment. The results of questions 2, 3 and 5 will be presented as the results of processing for the two dimensions- keywords extractor and sentiment analyzer. The answers for question 4, quantitative, manually processed, are presented in Fig. 10.

The awareness of the students about AI and from where they got the information about AI was measured by question 1.

The synthesis of AI procession for the answers to question 1 is presented in Fig. 1 as for the reader to see the entire page available after AI processing of the answers.

Fig Nro.1
Q1-The Synthesis of The Result of AI Procession for Answers Using Monkey Learn (Dashboard), Accessed on the 8th of august 2023
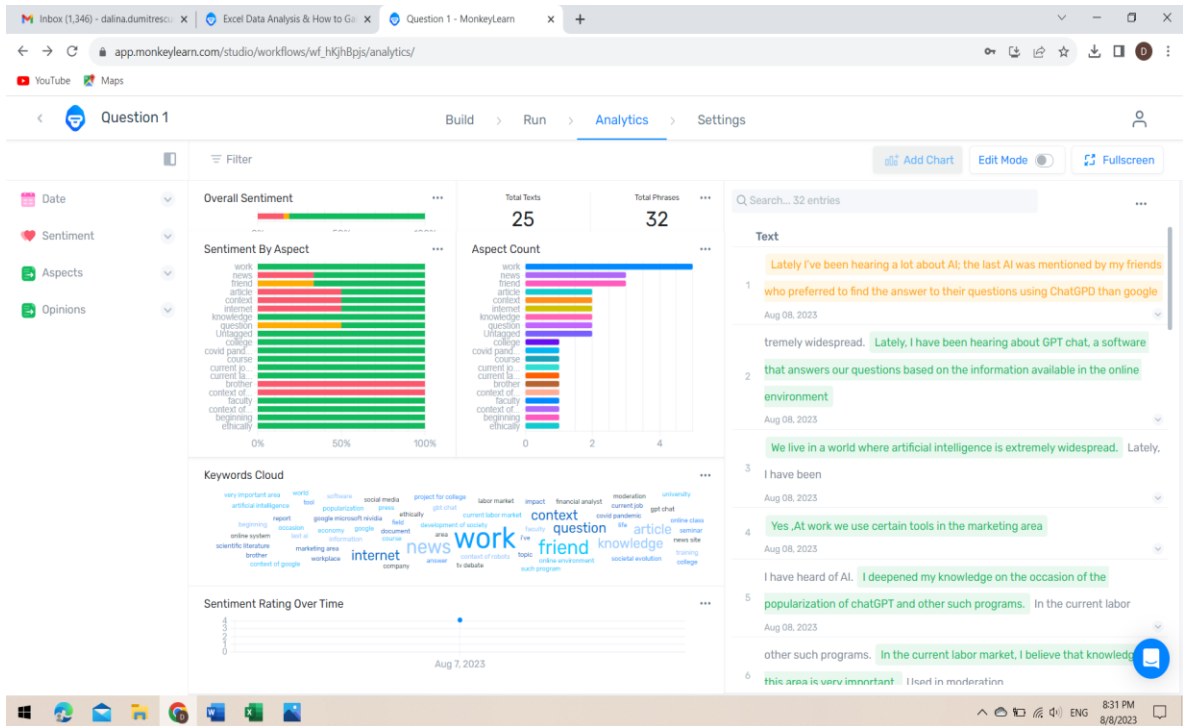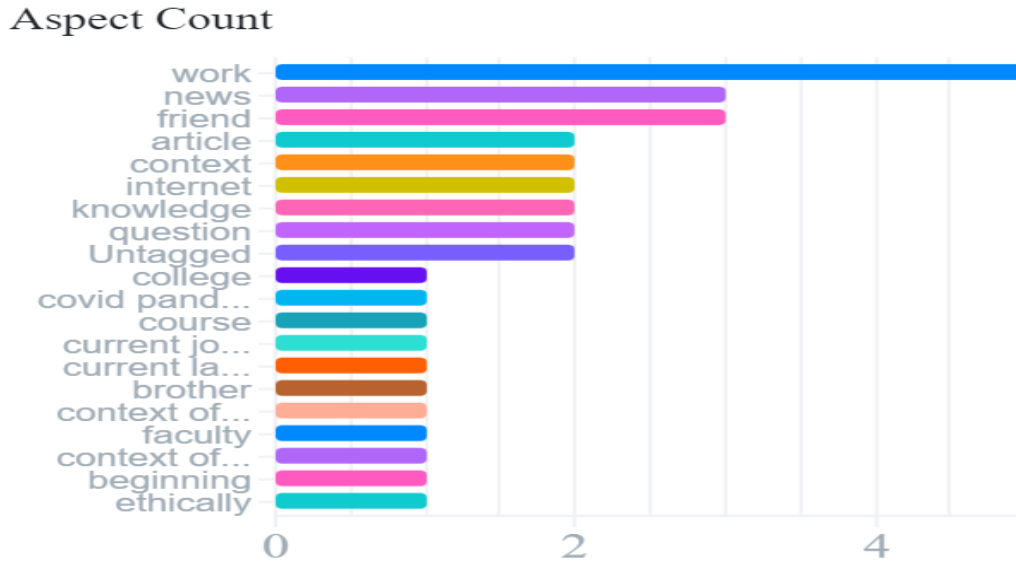

Source: Realized by author using the AI soft Monkey Learn

One can see that the 25 answers were introduced but the number of sentences is greater (32) given the fact that some answers were composed of multiple sentences. On the right column are represented the uploaded answers for Q1, in the corresponding color (green, orange, or red) according to the trained learning machine algorithm to detect the sentiment from each answer.
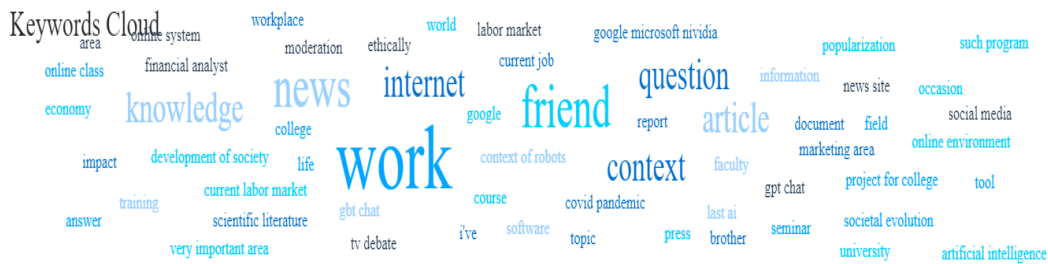
AI processing results of the answers to question 1 1, based on the keywords are presented correlated under two formats of presentation, aspect count and keyword cloud.

Fig Nro.2:
Q1-The keywords (aspect count)

***Source: Realized by author using the AI soft Monkey Learn** accessed on the 8th of August 2023*

Fig Nro. 3
Q1- Key words cloud

Source: Realized by author using the AI soft Monkey Learn accessed on the 8th of August 2023

The keyword analysis or topic analysis models applied, detected 20 relevant key keywords in the text uploaded on the Monkey Learn author's account. Out of the answers advanced machine learning algorithms counted words and found and grouped similar word patterns. After the processing, in the available associated CVS file, are presented

the details of the analysis: for each answer the length, the keywords detected, and the sentiment.

In the case of Q1 the first five keywords by frequency are *work, news, friends, article, and context* (Fig 2 and Fig 3.)

The representation of the result processing of the answers to question 1, based on sentiment analysis, the trained learning machine detected the sentence of the keyword the sentiment-positive, neutral, or negative (Fig. 4).

Fig. Nro. 4
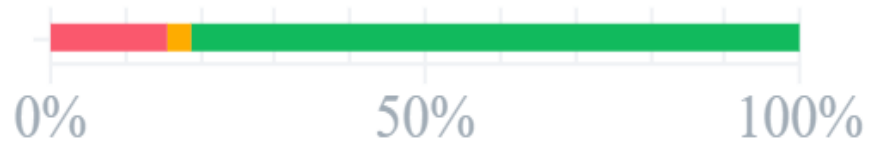**Q1- The sentiment by aspect**

***Source: Realized by author using the AI soft MonkeyLearn* accessed on the 8th of August 2023**

If for the keyword work all the contexts were positive, for news, article, and context, half of the contexts were negative. For the keyword's context of robots and brother, the sentiment by category was negative.

The total answers to question 1, from the perspective of overall sentiment, as analyzed by AI reflect the predominance of the positive sentiment (green) -Fig 5

Fig. Nro.5
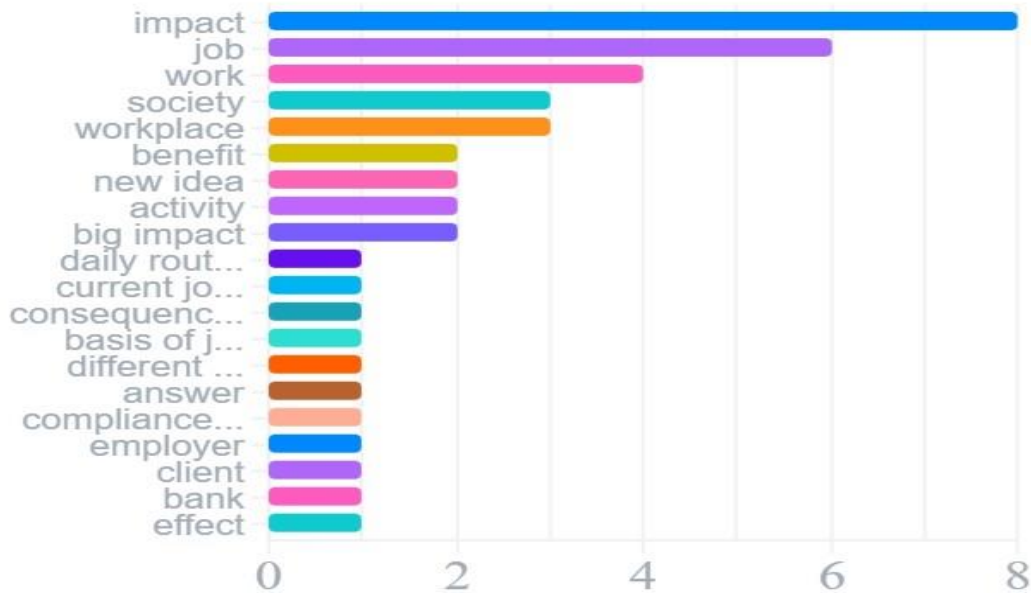**Q1- The Overall Sentiment**

Overall Sentiment

Source: Realized by author using the AI soft Monkey Learn accessed on the 8th of August 2023

As interpretation, regarding the corresponding information provided in the available post-processing CVS document, the answers for question 1, 76% expressed positive sentiments, 3% neutral, and 15% negative.

Question 2 of the survey investigated the perception of the students regarding the impact of AI on their actual jobs.

Fig. Nro. 6
Q2- The Result of AI Procession for Answers Regarding the Key Words Using Monkey Learn (Dashboard), Accessed on the 8th of ougust 2023

In the case of Q2, were identified 17 representative keywords and the first 5 ones identified by aspect count and keywords cloud are: *impact, job, work, society, and workplace* (Fig 6).

Fig. Nro. 7
Q2- The Sentiment by Aspect

Source: realized by author using the AI soft Monkey Learn accessed on the 8th of August 2023

For the keywords impact, job, and society the sentiments of the sentences were neutral or positive- in majority positive, for the keywords work and workplace the sentiments by category were more polarized -negative or positive (Fig.7).

Regarding the overall sentiment regarding the answers to question 2, as provided in the available post-processing CVS document, from the total formulated answers, 69% were positive sentiments, 22% neutral, and 8% negative.

The survey investigates the perception of the students regarding the impact of AI on education by the answers to *question 3*.

Regarding the keywords, the Monkey Learn word cloud is as presented in the following figure:

Fig. Nro. 8
Q3 World Cloud - <u>https://monkeylearn.com/word-cloud</u> , accessed on the 28th of august 2023
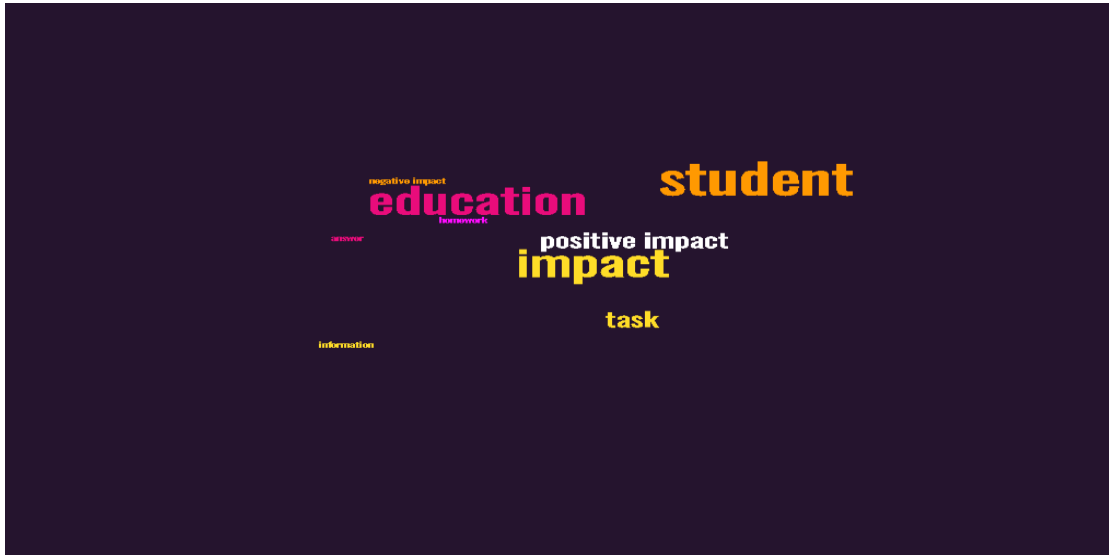
The first five keywords identified by MonkeyLearn Worldcloud for the category analysis are: *student, education, impact, positive impact, and task*. (Fig 8). The same text uploaded on Worldcloud (non-AI platform- Fig.9) identified as keywords in the first-place verbs (*will, can, use/used, finding, think, helps*) but also substantives and adjectives (*education, impact, information, student, and positive, faster, easier, correct*).
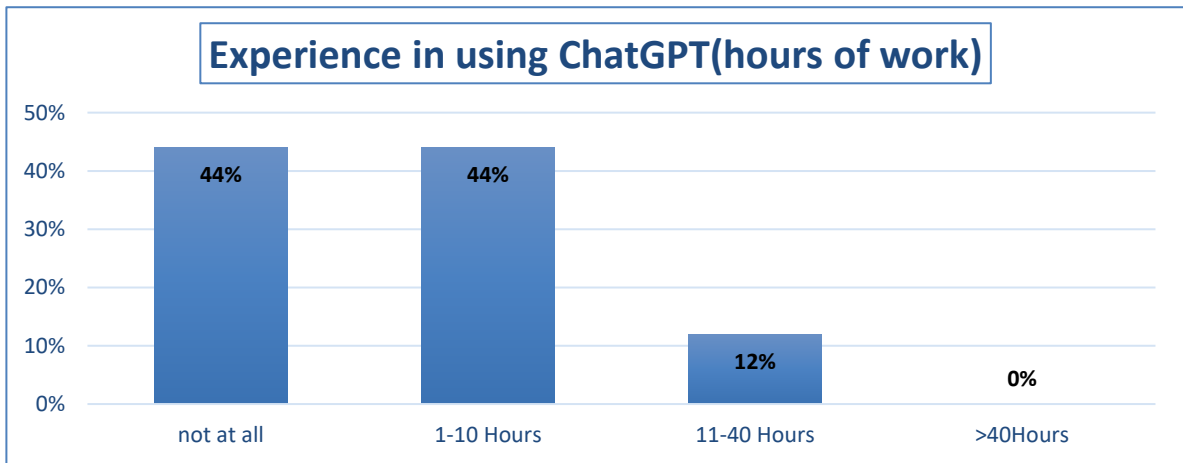
Fig. Nro. 9
Q3 world cloud -https://www.wordclouds.com/ (non-ai instrument) accessed by the author on the 29 of august 2023

In terms of sentiment analysis regarding the overall sentiment for the answers to question 3, the positive attitude is also high at 76.6%.

Question 4 was addressed in the survey to investigate how experienced the students were to use ChatGPT or in some other words the experience they have to work with it. (Fig.10)

Fig. Nro.10
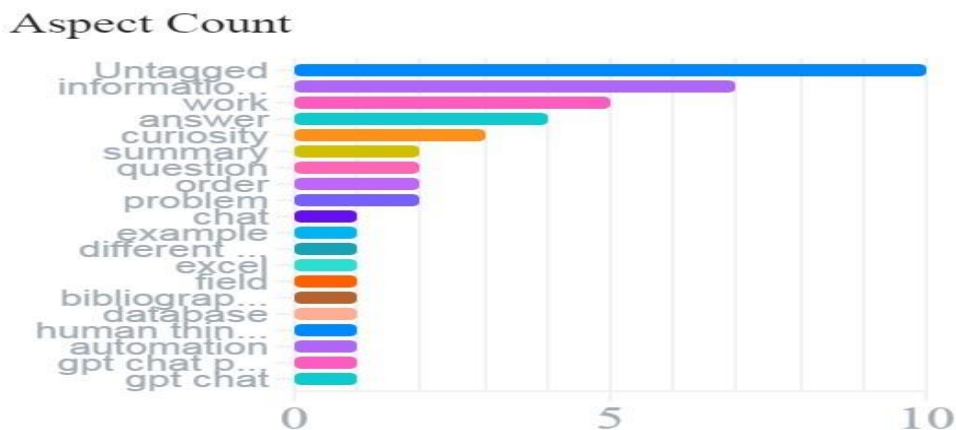**Experience In Using ChatGPT (In Hours Of Work)**

Source: Realized by the author using excel

Question 5 of the survey investigated for what purpose the student used ChatGPT, and for what type of activities ChatGPT was used.

Fig. Nro. 11
Q5-The Result of AI Procession for Answers Regarding the Key Words Using Monkey learn (Dashboard) Accessed on The 9th of august 2023.

In the context of question 5 were identified 19 relevant keywords, the first five by aspect count and keywords cloud are: *information, work, answer, curiosity, and summary* (Fig11). It is to notice the high proportion of untagged keywords from the perspective of machine learning analysis.

Fig. Nro. 12
Q5- The sentiment by aspect

Source: realized by author using the AI soft MonkeyLearn accessed on the 9th of August 2023.

From the sentiment by aspect analysis by category all untagged words were presented by AI analysis in negative contexts, the words curiosity and summary were expressed in positive contexts, information and answers were expressed in all three contexts of sentiment analysis and work in neutral and positive contexts (Fig.12).

The untagged category corresponds to the answer "I did not use it" and obviously, is detected as negative in the perspective of sentiment analysis.

As provided in the available post-processing CVS document, for question 5, corresponding to the total answers in overall sentiment analysis, 46% were positive sentiments, 14% were neutral and 40% were negative.

7. Discussion

The pilot study aimed to investigate to what extent the master's program students at the Faculty of Finance and Banking at the university are concerned about AI and their level of experience in working with Artificial Intelligence text generators (AITG).

The author is fully aware that the number of respondents, the method of their selection, as well as the complexity of the questionnaire, do not allow the results of the processing to serve as a sufficient basis, by scientific requirements, for the extrapolation and generalization of conclusions.

However, in a society undergoing profound and extremely rapid change in this regard, we believe that the results obtained, with a 100% response rate, can serve as at least an encouraging starting point for the development and expansion of the study. In conditions where even in a preliminary and somewhat less scientifically rigorous form, querying students' opinions about AI and investigating their level of experience with text generators is lacking, these results can be indicative of students' openness, support, and experience in working with AI. Academic institutions must prioritize implementing programs that offer all stakeholders, such as students, professors, and doctoral researchers, comprehensive education, and training on AI. This will ensure responsible integration of various AI applications into the educational process and promote continuous and formal reflection on the ethical use of Artificial Intelligence. On September 6, 2023, the Harvard School of Education hosted a webinar titled "Experimenting with AI in the Classroom" to explore this subject further.

The results of the pilot study obtained using AI and non-AI techniques in processing reveal several aspects that can themselves be points of discussion and further exploration.

It is important to note that respondents are familiar with and knowledgeable about AI technology.

Regarding the source of information, the top 5 mentioned sources include the workplace (exclusively in a positive context), news, friends, and scientific articles. The university as an educational institution is mentioned less frequently but also in a positive context (see Fig. 2 and Fig. 3). The results show that all the students were aware of the AI and the main source to find out about it was at work, from news, from friends and articles.

Concerning the overall sentiment, 76% of responses related to the context in which they learned about AI were expressed positively, based on sentiment analysis (see Fig. 5).

The perception of AI's influence in the workplace has focused on keywords like impact, job, work, society, and workplace. The answers express the fact that the respondents were aware of the impact of AI at work, for their jobs, and in the workplace.

It's noteworthy that sentiment analysis by category highlighted that these keywords were mostly formulated in positive, but also in negative or neutral contexts. The keyword "workplace" was expressed 50% in a positive context and 50% in a neutral context (see Fig. 7).

Regarding the overall sentiment, 69% of responses related to AI's impact on the current job were expressed positively, according to sentiment analysis.

The students' perception of AI's influence on education was synthesized by both machine learning models and non-AI techniques. It's interesting to note the similarity in results, regardless of the analysis model used, with keywords such as students, education, impact, positive impact, and task. The non-AI processing model also highlighted verbs and adjectives describing the actionable and effective aspects of using AI, such as "will," "can," "use/used," "finding," "think," "helps," or "positive," "faster," "easier," and "correct" (see Fig. 8 and Fig. 9).

76.6% of responses regarding the impact of AI on education were expressed positively from a sentiment analysis perspective), representing the highest percentage of positive statements in the questionnaire.

The experience of surveyed students in using ChatGPT, Q4, during working hours, as depicted in Fig.10, reflects a very limited level of experience, mainly at the exploratory and testing stages. Therefore, 44% of students did not use it at all, which is equal to the number of those who used it for intervals of time between one hour and 10 hours, with no student admitting to using it for more than 40 hours.

In terms of usage, the primary activities were information retrieval at the workplace, finding answers to questions, curiosity about how it works, and generating summaries (see Fig.11). It's interesting to note the categories detected from responses expressing only positive sentiments, including order, example, excel, field, database, and automation of ChatGPT.

Regarding the post-processing CSV document by MonkeyLearn for question 5, 46% of responses were positive.

8. Conclusion

Despite significant limitations regarding the database used, the pilot study represents a groundbreaking investigation into awareness of AI's impact on the workplace and education, as well as the experience in using ChatGPT and the purposes for which it was used.

The use of AI in processing the questionnaire aimed to ensure consistency between the investigated subject and the processing tool.

We appreciate that the predominance of positive sentiments regarding the influence and usage effects of ChatGPT by master's students, both in the workplace and in educational activities, provides a solid basis for the formal, coherent, efficient, and responsible integration of AI into the educational process.

Bibliographic references

- Akhavan, M., Ghiara, H., Mariotti, I., & Sillig, C. (2020). "Logistics global network connectivity and its determinants. A European City network analysis." **Journal of Transport Geography,** *82*, 102624. https://doi.org/10.1016/j.jtrangeo.2019.102624

- Alam, A. (2022). "Employing Adaptive Learning and Intelligent Tutoring Robots for Virtual Classrooms and Smart Campuses: Reforming Education in the Age of Artificial Intelligence". In: Shaw, R.N., Das, S., Piuri, V., Bianchini, M. (eds) Advanced Computing and Intelligent Technologies. Lecture Notes in *Electrical Engineering*, vol 914. Springer, Singapore. https://doi.org/10.1007/978-981-19-2980-9_32

- Aleven, V., McLaren, B. M., Roll, I., & Koedinger, K. R. (2006). "Toward Meta-cognitive Tutoring: A Model of help seeking with a Cognitive Tutor". **International Journal of Artificial Intelligence in Education***, 16*(2), 101-128.

- Ansari, M. F., Dash, B., Sharma, P., & Yathiraju, N. (2023). "The Impact and Limitations of Artificial Intelligence in Cybersecurity: A Literature Review." **International Journal of Advanced Research in Computer and Communication Engineering-SSR**. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4323317

- Bahroun, Z., Anane, C., Ahmed, V., & Zacca, A. (2023). **"**Transforming Education: A Comprehensive Review of Generative Artificial Intelligence in Educational Settings through Bibliometric and Content Analysis." **Sustainability***, 15*, 12983. https://doi.org/10.3390/su151712983

- Bakir, N. (2016). "Technology and Teacher Education: A Brief Glimpse of the Research and Practice that Have Shaped the Field". **TechTrends***, 60*, 21-29. https://doi.org/10.1007/s11528-015-0013-4

- Bharadiya, J. (2023)." Artificial Intelligence in Transportation Systems A Critical Review." **American Journal of Computing and Engineering***, 6*(1), 34-45. https://doi.org/10.47672/ajce.1487

- Chakraborty, P., Mittal, P., Gupta, M. S., Yadav, S., & Arora, A. (2020). "Opinion of students on online education during the COVID-19 pandemic." **Human Behavior and Emerging Technologies,** *3*(1). https://doi.org/10.1002/hbe2.240

- Chandra, S., Verma, S., Lim, W. M., Kumar, S., & Donthu, N. (2022). "Personalization in personalized marketing: Trends and ways forward". **Psychology & Marketing**, 39, 1529-1562. https://doi.org/10.1002/mar.21670

- Chen, X., Xie, H., & Hwang, G. J. (2020*).* "A multi-perspective study on Artificial Intelligence in Education: grants, conferences, journals, software tools,

institutions, and researchers." **Computers and Education: Artificial Intelligence***, 1*(3),100005. http://dx.doi.org/10.1016/j.caeai.2020.100005

- Chen, X., Zou, D., Xie, H., Cheng, G., & Liu, C. (2022). "Two Decades of Artificial Intelligence in Education: Contributors, Collaborations, Research Topics, Challenges, and Future Directions: **Educational Technology & Society**, *25*(1), 28-47. https://www.jstor.org/stable/48647028

- Chiou, M., Epsimos, G. T., Nikolaou, G., Pappas, P., Petousakis, G., Mühl, S., & Stolkin, R. (2022). Robot-Assisted Nuclear Disaster Response: "Report and Insights from a Field Exercise*". **IEEE/RSJ International Conference on Intelligent Robots and Systems** *(IROS)*, 4545-4552. https://doi.org/10.1109/IROS47612.2022.9981881

- Chiu, T. K. F., Xia, Q., Zhou, X., & Chai, C. S., & Cheng, M. (2023). **"**Systematic literature review on opportunities, challenges, and future research recommendations of artificial intelligence in education". **Computers and Education: Artificial Intelligence***, 4*(3), 100118. https://doi.org/10.1016/j.caeai.2022.100118.

- Chowdhary, K. R. (2020). "Natural Language Processing." **In Fundamentals of Artificial Intelligence.** *Springer.* New Delhi. https://doi.org/10.1007/978-81-322-3972-7_19

- Chu, H. C., Hwang, G. H., Tu, Y. F., & Yang, K. H. (2022). "Roles and research trends of artificial intelligence in higher education: A systematic review of the top 50 most-cited articles". **Australasian Journal of Educational Technology***, 38*(3), 22-42. https://doi.org/10.14742/ajet.7526

- Feroz, A. K., Zo, H., & Chiravuri, A. (2021). "Digital Transformation and Environmental Sustainability: A Review and Research Agenda". **Sustainability***, 13*, 1530. https://doi.org/10.3390/su13031530

- Fu, D., & Houlette, R. (2002). "Putting AI in entertainment: an AI authoring tool for simulation and games." **IEEE Intelligent Systems***, 17*(4), 81-84. https://doi.org/10.1109/MIS.2002.1024756

- Gao, Y., & Liu, H. (2022). "Artificial intelligence-enabled personalization in interactive marketing: a customer journey perspective." **Journal of Research in Interactive Marketing**, 1-18. https://doi.org/10.1108/JRIM-01-2022-0023

- Gkontzis, A.   F., Kotsiantis, S., Kalles, D., Panagiotakopoulos, C.   T., & Verykios, V. S. (2020)." Polarity, emotions and online activity of students and tutors as features in predicting grades." **Intell. Decis. Technol.,** *14*(3), 409-436. https://doi.org/10.3233/idt-190137

- Hodges, C. B., Barbour, M., & Ferdig, R. E. (2022). "A 2025 Vision for Building Access to K-12 Online and Blended Learning in Pre-service Teacher Education." ***Journal of Technology and Teacher Education****, 30(2), 201-216.*

Waynesville, NC USA: Society for Information Technology & Teacher Education. https://www.learntechlib.org/primary/p/221153/

- Holland, B. J. (2023). "ChatGPT 3.5 and 4: Bits Ramifications on Librarianship, Academia, Education, Publishing, and the Workplace." In **B. Holland (ed.), Handbook of Research on Advancements of Contactless Technology and Service Innovation in Library and Information Science** (pp. 316-340). IGI Global. https://doi.org/10.4018/978-1-6684-7693-2.ch016

- Hwang, G. J., Xie, H., Wah, B. W., & Gašević-Vision, D. (2020). *"Challenges, Roles and Research Issues of Artificial Intelligence in Education*-Computers and Education." **Artificial Intelligence**, *1,* 100001.

- In J. "Introduction of a pilot study." **Korean J Anesthesiol**. 2017 Dec;70(6):601-605. doi: 10.4097/kjae.2017.70.6.601. Epub 2017 Nov 14. PMID: 29225742; PMCID: PMC5716817.

- Jarret, A., Kwang, K., & Choo, R. (2021). "The impact of automation and artificial intelligence on digital forensics-Wires Forensic Science." **Wiley Interdisciplinary Reviews.** https://doi.org/10.1002/wfs2.1418

- Lee, M., Mesicek, L., Bae, K., & Ko, H. (2023). "AI advisor platform for disaster response based on big data." **Concurrency and Computation Practice and Experience,** 35(16), e6215. https://doi.org/10.1002/cpe.6215

- Leyva-Mayorga, I., Soret, B., Matthiesen, B., Röper, M., Wübben, D., Dekorsy, A., & Popovski, P. (2022). "*NGSO Constellation Design for Global Connectivity-Computer Science"* **Networking and Internet Architecture, Book chapter Cornel University**. https://doi.org/10.1049/PBTE105E

- Linardos, V., Drakaki, M., Tzionas, P., & Karnavas, Y. L. (2022). "Machine Learning in Disaster Management: Recent Developments in Methods and Applications." **Machine Learning and Knowledge Extraction**, *4*(2), 446-473. https://doi.org/10.3390/make4020020

- Liu S. Y. (2020). "Artificial Intelligence (AI) in Agriculture." **IT Professional**, *22*(3), 14-15. https://doi.org/10.1109/MITP.2020.2986121

- Liu, M., Yu, D. "Towards intelligent E-learning systems." **Educ Inf Technol** 28, 7845–7876 (2023). https://doi.org/10.1007/s10639-022-11479-6

- Marcello, M. M., Machado, I., Magrelli, V., & Dwivedi, Y. K. (2023). "Artificial intelligence in innovation research: A systematic review, conceptual framework, and future research directions." **Technovation**, *122*, 102623. https://doi.org/10.1016/j.technovation.2022.102623.

- Mijwil, M. M., Aggarwal, K., Mutar, D. S., Mansour, N., & Singh, R. S. S. (2022). "The Position of Artificial Intelligence in the Future of Education: An Overview." **Asian Journal of Applied Sciences**, *10*(2). https://doi.org/10.24203/ajas.v10i2.6956

- Mellinger, C. D., & Hanson, T. A. (2020). "Methodological considerations for survey research:Validity, reliability, and quantitative analysis." **Linguistica Antverpiensia, New Series**: Themes in Translation Studies, 19, 172–190. DOI: https://doi.org/10.52034/lanstts.v19i0.549

- Milana C, Ashta A." Artificial intelligence techniques in finance and financial markets: A survey of the literature." **Strategic Change**. 2021; 30: 189–209 Mellinger, https://doi.org/10.1002/jsc.2403

- Misuraca, M., Scepi, G., & Spano, M. (2021). "Using Opinion Mining as an educational analytic: An integrated strategy for the analysis of students' feedback." **Studies in Educational Evaluation,** *68*, 100979. https://doi.org/10.1016/j.stueduc.2021.100979

- Nader, K., Toprac, P., Scott, S., & Baker, S. (2022)." Public understanding of artificial intelligence through entertainment media." **AI & Soc**. https://doi.org/10.1007/s00146-022-01427-w

- Nikolić N., Grljević O., & Kovačević A. (2020). **"**Aspect-based sentiment analysis of reviews in the domain of higher education," **Electron.** *Libr., 38*(1), 44-64. https://doi.org/10.1108/el-06-2019-0140

- Nti, I. K., Adekoya, A. F., Weyori, B. A., & Owusu, N. B. (2022). "Applications of artificial intelligence in engineering and manufacturing: a systematic review**."** *Journal of Intelligent Manufacturing, 33*(6), 1581-1601. https://doi.org/10.1007/s10845-021-01771-6

- Ömer Osmanoğlu, U., Atak O. N., Çağlar K., Kayhan, H., & Can, T. (2020). **"**Sentiment analysis for distance education course materials: A machine learning approach." **Journal of Education Technology and Online Learning***, 3*(1), 31-48. https://doi.org/10.31681/jetol.663733

- Prashant, S., Zeinab, E., Yui-yip, L., Borowska-Stefańska, M., Wiśniewski, S., & Maxim, A. (2022). "Dulebenets, Blockchain and AI technology convergence: Applications in transportation systems," **Vehicular Communications***, 38*, 00521, ISSN 2214-2096, https://doi.org/10.1016/j.vehcom.2022.100521

- Raina, V., & Krishnamurthy, S. (2022)." Natural Language Processing. In *Building an Effective Data Science Practice*." **Apress, Berkeley,** CA. https://doi.org/10.1007/978-1-4842-7419-4_6

- Ryan, S. B., Martin, T., & Rossi, L. M. (2016). "Educational Data Mining and Learning" **Analytics-** 16 November. https://doi.org/10.1002/9781118956588.ch16-

- Saraswat, D., Bhattacharya, P., Verma, A., Prasad, V. K., Tanwar, S., & Sharma, G. (2022). "Explainable AI for Healthcare 5.0: Opportunities and Challenges." **IEEE Access***, 10*, 84486-84517. https://doi.org/10.1109/ACCESS.2022.3197671

- Sarmah, S. S. (2019). "Artificial Intelligence in Automation"- RESEARCH REVIEW. **International Journal of Multidisciplinary***, 04*(06).

- Shamima, A., Alshater, M. M., Ammari, A. E., & Hammami, H. (2022). "Artificial intelligence and machine learning in finance: A bibliometric review". *Research in* **International Business and Finance***, 61*, 101646. https://doi.org/10.1016/j.ribaf.2022.101646

- Shangyao, Y., & Yu-Lin, S. (2007). "A time-space network model for work team scheduling after a major disaster." **Journal of the Chinese Institute of Engineers***, 30*(1), 63-75. https://doi.org/10.1080/02533839.2007.9671231

- Sharma, R. (2021). "Artificial Intelligence in Agriculture: A Review. **"** *5th International Conference on Intelligent Computing and Control Systems (ICICCS)*, 937-942, https://doi.org/10.1109/ICICCS51141.2021.9432187

- Shaik, T., Tao, X., Dann, C., Xie, H., Li, Y., & Galligan, L. (2023). "Sentiment analysis and opinion mining on educational data: A survey." **Natural Language Processing Journal,** *2,* 100003. https://doi.org/10.1016/j.nlp.2022.100003

- Siedlecki, Sandra *L,(2022) PhD, RN, APRN-CNS, FAAN. "Conducting Interviews for Qualitative Research Studies."* **Clinical Nurse Specialist** *36(2):p 78-80, 3/4 2022. | DOI: 10.1097/NUR.0000000000000653*

- Stahl, B. S. (2022). "Responsible innovation ecosystems: Ethical implications of the application of the ecosystem concept to artificial intelligence." **International Journal of Information Management,** *62*, 102441. https://doi.org/10.1016/j.ijinfomgt.2021.102441

- Sung-Hee Jin, Kowloon Im, Mina Yoo, Ido Roll, Kyoungwon Seo- "Supporting students' self-regulated learning in online learning using artificial intelligence applications*"* **International Journal of Educational Technology in Higher Education** (2023). https://doi.org/10.1186/s41239-023-00406-5,

- Tsolakis, N., Zissis, D., Papaefthimiou, S., & Korfiatis, N. (2022). "Towards AI driven Mellinger,environmental sustainability: an application of automated logistics in container port terminals." **International Journal of Production Research,** *60*(14), 4508-4528. https://doi.org/10.1080/00207543.2021.1914355.

- Woolf, B., Burleson, W., Arroyo, I., Dragon, T., Cooper, D. G., & Picard, R. W. (2009). "Affect-aware tutors: recognizing and responding to student effect." **International Journal of Learning Technology,** *4*(3/4), 129-164. https://doi.org/10.1504/IJLT.2009.028804

- Yao, X., Zhou, J., Zhang, J., & Boër, C. R. (2017). "From Intelligent Manufacturing to Smart Manufacturing for Industry 4.0 Driven by Next Generation Artificial Intelligence and Further On," **5th International Conference on Enterprise Systems** *(ES)* pp. 311-318, Beijing, China. https://doi.org/https://doi.org/10.1109/ES.2017.58.

- Yu, K. H., Beam, A. L., & Kohane, I. S. (2018). "Artificial intelligence in healthcare." **Nature Biomedical Engineering**, *2*(10), 719-731. https://doi.org/10.1038/s41551-018-0305-z

- Zhang, Z., Ning, H., Shi, F., Farha, F., Xu, Y., Xu, J., Zhang, F., & Raymond Choo, K. K. (2022). "Artificial intelligence in cyber security: research advances, challenges, and opportunities." **Artificial Intelligence Review**, *55*, 1029-1053. https://doi.org/10.1007/s10462-021-09976-0

Webinars:

- Webinar : *Unlocking the Power of AI: How Tools Like ChatGPT Can Make Teaching Easier and More Effective-HBP,* May 2, 2023- *https://hbsp.harvard.edu/webinars/unlocking-the-power-of-ai/?cid=email%7Cmarketo%7C2023-05-03-webinar-recording-unlocking-the-power-of-ai%7C1257639%7Cwebinar%7Cwebinar-registrant%7Cwebinar-recording-page%7Cmay2023&acctID=8303506&mkt_tok=ODU1LUFUWi0yOTQAAAGLgOQwyjF83cUJGm3uSMFE6b3p10gw0n40c0OMJeqjrgo1991YzwiM5o1Wur8LmOTLI0P70hpDktd9w6TaWakjWevwHooL97i_Et5uv7XCvA*

- *Webinar-Will AI Replace the Educator- HBP* August 10, 2023 - *https://hbsp.harvard.edu/webinars/will-ai-replace-the-educator/?cid=email%7Cmarketo%7C2023-08-11-webinar-recording-will-ai-replace-the-educator%7C1257639%7Cwebinar%7Cwebinar-registrant%7Cwebinar-recording-page%7Caug2023&acctID=8303506&mkt_tok=ODU1LUFUWi0yOTQAAAGNg97w5StIIzze_m5AApAmRjw9rgdw8gWDoUfL3Y03xNYSikCoMf_ym63ya35os2_sxHvu3N6orlHzC5VEMLOf2AqqEBwOYpBaEz0BdWCxeg*

- Webinar- *Experimenting with AI in the Classroom*-Harvard School of Education-September 6, 2023- https://www.gse.harvard.edu/ideas/education-now/23/09/experimenting-ai-classroom?utm_source=EdNowTY&utm_medium=email&utm_campaign=EdNow090723