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ChatGPT and responsible student education

1. Introduction

Education of students faces new challenges in order to meet the needs of todays and future labor markets. The dynamic technological development leads to the creation of new professions and requires the development of competencies that will be adequate in the new reality. The accompanying uncertainty regarding the future of the labor market (Lechner et al., 2016) further strengthens the need for responsible education. Universities should therefore focus on those skills that will enable young people to navigate and quickly respond to changing conditions.

In this turbulent world, we simultaneously observe a very dynamic development of artificial intelligence (AI), which is starting to accompany humans in various spheres of life. In education, ChatGPT has garnered interest from both students and teachers, as it seems to efficiently fulfill academic tasks for both groups. Therefore, the article aims to determine the significance of ChatGPT in the process of shaping key skills/competencies within the framework of responsible education for students. The research questions are as follows:

- RQ1: To what extent does the university educate individual key competencies among students?

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- RQ2: To what extent can ChatGPT support the development of key competencies among students?
- RQ3: Can ChatGPT support the development of those competencies with which the university struggles the most?

2. Literature review

2.1. ChatGPT in Education

The issue of artificial intelligence has left its mark on many spheres of human functioning. It also has an increasing influence in the field of education, proposing new solutions while raising doubts, both ethical in nature and stemming from the essence of educating students. The emergence of ChatGPT (Generative Pretrained Transformer), utilizing natural language processing (NLP) technology (Biswas, 2023), is described as a new era of artificial intelligence, impacting many areas of economic and social life (Hill-Yardin et al., 2023). Furthermore, the combination of AI development with neurology evokes both admiration and concern (Hawkins, 2021).

In November 2022, OpenAI made ChatGPT-3.5 publicly available, and due to its simplicity, it quickly gained popularity—with over 100 million people using the tool in the first two months. Subsequently, in March 2023, the next version, ChatGPT-4, was released, offering more capabilities but requiring payment (Iszkowski & Tadeusiewicz, 2023). The mechanism of ChatGPT can be briefly described as a chatbot that provides answers to user questions based on available sources. It can generate texts in a specified style, prepare summaries, and compile reports.

Interest in ChatGPT is present in didactics, among other fields. Teachers increasingly use this tool for education (Markel et al., 2023). It allows them to create materials tailored to the individual needs of students (Tsai, 2023). For students, using the chat enables the acquisition of programming skills as well as critical thinking and problem-solving abilities. It seems that using ChatGPT can bring benefits to both teachers and students (Tsai, 2023). ChatGPT itself can also serve as a teacher, providing opportunities for students to practice (Alnaqbi & Fouda, 2023).

The use of ChatGPT in didactics brings numerous benefits. First and foremost, students can quickly obtain answers to their questions and doubts from any location and at any time. Moreover, the generated materials can take various forms: text, audio, and visual (Fuchs, 2023). However, the essence

of task solving, learning and development also lies in learning to overcome difficulties, including stress, rather than avoiding them. The dynamic cooperation with ChatGPT also helps reduce stress and uncertainty that students may experience while completing tasks (Ray, 2023). Additionally, there are studies indicating the potential use of ChatGPT to improve student well-being (Abdillah et al., 2023).

Despite the numerous benefits of using ChatGPT, it is also important to consider the associated risks. The first risk is the low accuracy of solutions generated by ChatGPT, which largely depends on the data used and the user's competence. The second significant risk is excessive reliance on technology, which is not infallible. In such cases, students may become passive users, not engaging in critical thinking—a key skill in today's world—nor in judgment formation, creativity, and original problem-solving, which ChatGPT also somewhat eliminates (Fuchs, 2023; Kasneci et al., 2023; Saiz & Rivas, 2023). The use of ChatGPT also raises ongoing ethical concerns that are difficult to resolve unequivocally at this stage of technological development (Czerski, 2023), and legal regulations in this area are needed (Yu, 2023).

Given the dynamic development of artificial intelligence and tools that can be used in education, there is a need for training in the use of AI and investment in this area (Alenezi et al., 2023). Training is needed for all users, including both teachers and students.

2.2. Responsible Education

The issue of education is extensively covered in the literature. The rationale for this approach is the understanding that a socially responsible university will properly fulfill its tasks within its research, teaching, and social missions (Papadimitriou, 2020). This component of imparting knowledge is particularly important in the overall activities of a university. The duty of universities is to educate professionals who possess the latest knowledge (Zuluaga-Ortiz et al., 2023), which is particularly challenging when working conditions change dynamically (Soulé & Warrick, 2015; Nilsson & Ekberg, 2013). The knowledge acquired by students within the university will be both a personal resource and a value for organizations and society (Zhukovskiy et al., 2017).

In attempting to identify the most important skills/competencies relevant to responsible education, it should be emphasized that such education will address the current needs of students contemplating entering the workforce, as well as those necessary for development throughout their professional activity. For this

purpose, a more general approach focusing on the typology of thinking styles, from which various interdisciplinary skills and competencies will emerge, can be helpful (Cheng, 2004):

- Technological Thinking – uses scientific thinking to solve complex problems, based on rationality.
- Economic Thinking – involves identifying and utilizing internal and external resources to achieve the greatest benefits.
- Social Thinking – emphasizes interpersonal relationships, leading to the creation of social networks based on mutual respect.
- Political Thinking – involves negotiation skills and a willingness to make compromises.
- Cultural Thinking – relates to the concept of community, functioning in groups with similar values, and achieving common goals through symbolic products or events.
- Learning Thinking – associated with the necessity of lifelong learning and openness to change.

Piotr Sztompka, on the other hand, emphasizes that the days of having just one learned profession are over. The job market requires flexibility, creativity, innovation, and readiness for change (2016). Therefore, in education, a multidisciplinary approach and the transmission of comprehensive knowledge are crucial. General knowledge, useful in many situations and not just in a specific case, should also be imparted. The humanities play a significant role in shaping imagination, creativity, and innovation. It is also essential to acquaint students with scientific methods, which teach problem-solving based on scientific evidence (Sztompka, 2016; Neubert et al., 2015).

Key competencies are the skills needed to function effectively in the labor market and in everyday life. They include critical thinking, creativity, problem-solving skills, teamwork, communication, adaptability, lifelong learning skills, emotional intelligence, empathy, courage, readiness for change, leadership skills, and self-reliance, among others (Voogt et al., 2013; Halpern & Dunn, 2023; Lamri, 2021).

General/universal competencies are skills that are useful in a variety of work and life contexts, such as adaptability, lifelong learning, emotional intelligence, empathy, problem-solving skills, flexibility of thinking, courage, readiness for change, leadership skills, and the ability to learn (Mayer & Salovey, 1999; Hughes & Lavery, 2015).

Another set of skills necessary in a dynamic reality is provided by the National Center for O*NET Development: complex problem-solving, critical

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thinking, flexibility of closure, fluency of ideas, judgment and decision-making, manual dexterity, negotiation, problem sensitivity, selective attention, social perceptiveness, visualization, and written expression (Vista, 2020). Similarly, the 21st-century skills framework includes skills such as collaboration, critical thinking, problem-solving, and communication (Voogt et al., 2013; Halpern & Dunn, 2023). Alongside creativity and innovation, communication skills are also emphasized, without which the application of modern tools would not be possible (Greenaway et al., 2015). The importance of collaboration, problem-solving, and increasingly significant intercultural competence, ethics, and supporting social and digital skills are also highlighted (Panth & Maclean, 2020). The 4K model emphasizes the role of competencies such as critical thinking, cooperation, creativity, and communication (Lamri, 2021).

Among the many skills considered essential for future graduates, the importance of social skills must be highlighted, including emotional intelligence and related empathy, problem-solving abilities, flexible thinking, courage, readiness for change, leadership skills, and the ability to learn (Mayer & Salovey, 1999).

In various classifications, the need for critical thinking skills has been repeatedly mentioned (Hughes & Lavery, 2015), and earlier analysis of the benefits of using ChatGPT also pointed to the possibility of developing this skill. Therefore, it is significant to pay attention to what critical thinking entails. It allows one to analyze events and draw conclusions. It can be divided into three elements: the ability to think, which initiates the whole process, responsibility concerning formulated conclusions, and the formulation of independent judgments (Pogrebnaya & Mikhailova, 2023).

Industry reports also set certain educational frameworks, increasingly highlighting soft skills such as teamwork, task independence, and good communication (MenPower, 2022; Hays, 2022). Recent studies also emphasize the role of critical thinking, emotional intelligence, and problem-solving skills (MenPower, 2023; PARP, 2022; Dębkowska et al., 2022).

3. Research methods

The analysis of the significance of ChatGPT in shaping key skills/competencies among students, referred to as responsible education, consisted of five stages. In the first stage, based on literature analysis, 16 key competencies/skills were identified that students should acquire in the

process of responsible university education. In the second stage, surveys were conducted among students. These surveys were carried out in the calendar year 2023, on a sample of 172 undergraduate students at the Kracow University of Economics. Students were asked to evaluate the listed competencies/skills on a scale from 1 to 5, indicating whether their studies help in developing them. The survey provides important feedback for the university.

In the third stage, the specified competencies were subject to an original assessment in the context of their development through the use of ChatGPT by students. This stage attempts to answer the question of how helpful ChatGPT is in the process of responsible education for students. In the fourth stage, ChatGPT was asked to evaluate how it aids in the development of the 16 surveyed competencies/skills. Attention was also given to those skills that the university develops the least in its educational process. An analysis was conducted on how ChatGPT can be used to strengthen these skills.

In the fifth and final stage of the study, based on the results from the fourth stage, recommendations were formulated for the university regarding the development of key competencies/skills.

4. Results

In the first stage of the study, based on literature analysis, 16 competencies/ skills essential for responsible education of students were identified: critical thinking, independent assessment of situations, confident expression of personal opinions, integrating knowledge from various fields, creativity, openness to diversity, readiness for change, lifelong learning, social engagement, solving complex problems, teamwork, emotional intelligence, people management, negotiation skills, responsibility for tasks, and independence.

In the second stage of the study, surveys were conducted among students. The key question posed to the students was: "To what extent do your studies contribute to the development of the listed competencies and skills?" (Scale from 1 to 5, where 5 means they definitely contribute, 4 means they contribute, 3 means neutral, 2 means they do not contribute, and 1 means they definitely do not contribute). Respondents' answers regarding the impact of studies on the development of competencies were analyzed, rating them on a scale of 1 to 5. The average ratings for most of the competencies studied ranged from 3.5 to 4.1, indicating a moderate to high level of development of these skills. The competency "Cooperation in a team" received the highest average (mean = 4.1,

standard deviation = 1.0), suggesting that this is an area particularly supported by the study.

Other competencies, such as "Critical Thinking" (mean = 3.5, standard deviation = 1.0) and "Creativity" (mean = 3.6, standard deviation = 1.0), received slightly lower but similar scores. Competencies related to adaptability, such as "Readiness for change" (mean = 3.7, standard deviation = 1.0) and "Readiness for lifelong learning" (mean = 3.6, standard deviation = 1.0), also scored positively. It is worth noting that all competencies had a wide range of ratings (from 1 to 5), indicating a considerable diversity of opinions among respondents. These results underscore that studies contribute to the development of a wide range of competencies, although the level of impact varies depending on the specific skill.

Then, to better understand students' perspectives on the impact of studies on the formation of competencies, students' responses were tabulated in percentage terms. Table 1 summarizes the responses of the respondents.

**Table 1. Assessment of the Significance of Studies
in the Development of Competencies and Skills Among Students (in %)**

skills/competencies	5 – significantly contribute	4 – contribute	3 – no opinion	2 – do not contribute	1 – significantly do not contribute
critical thinking	14.00	47.10	18.60	16.90	3.50
	61.10			20.40	
independent situation assessment	22.7	50.6	12.2	11.6	2.9
	73.30			14.50	
bold expression of one's opinion	20.9	38.4	19.2	16.9	4.7
	59.30			21.60	
integrating knowledge from various fields	20.3	49.4	15.1	12.8	2.3
	69.70			15.10	
creativity	18.6	40.7	19.2	14	7.6
	59.30			21.60	

openness to diversity	26.2	43	16.3	10.5	4.1
	69.20			14.60	
readiness for change	22.7	44.8	19.2	11	2.3
	67.50			13.30	
lifelong learning	15.7	39	21.5	15.7	8.1
	54.70			23.80	
social engagement	16.3	37.2	25.6	15.7	5.2
	53.50			20.90	
solving complex problems	19.2	49.4	14	15.1	2.3
	68.60			17.40	
teamwork	47.1	43	4.7	3.5	1.7
	90.10			5.20	
emotional intelligence	18	37.2	25.6	11.6	7.6
	55.20			19.20	
people management	18.6	50.6	11	14.5	5.2
	69.20			19.70	
negotiation skills	19.8	45.9	14.5	15.1	4.7
	65.70			19.80	
responsibility for tasks	37.2	44.2	9.9	6.4	2.3
	81.40			8.70	
independence	42.4	34.9	11.6	8.1	2.9
	77.30			11.00	

Source: own elaboration based on conducted research

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Analyzing the students' responses, it is noticeable that for each skill/ competency, responses of 5 and 4 predominated. The best results were observed for teamwork, with over 90% of students appreciating the university's efforts in developing this skill, followed by responsibility for tasks, recognized by over 81% of respondents, and independence, which more than 77% of students reported learning during their studies. On the other hand, the skills/competencies that need more attention include readiness for lifelong learning, with over 23% of responses indicating that studies do not contribute or definitely do not contribute to this skill, confident expression of personal opinions, and creativity, both of which had over 21% of responses indicating a lack of contribution. The students' responses are visually represented in figure 1.
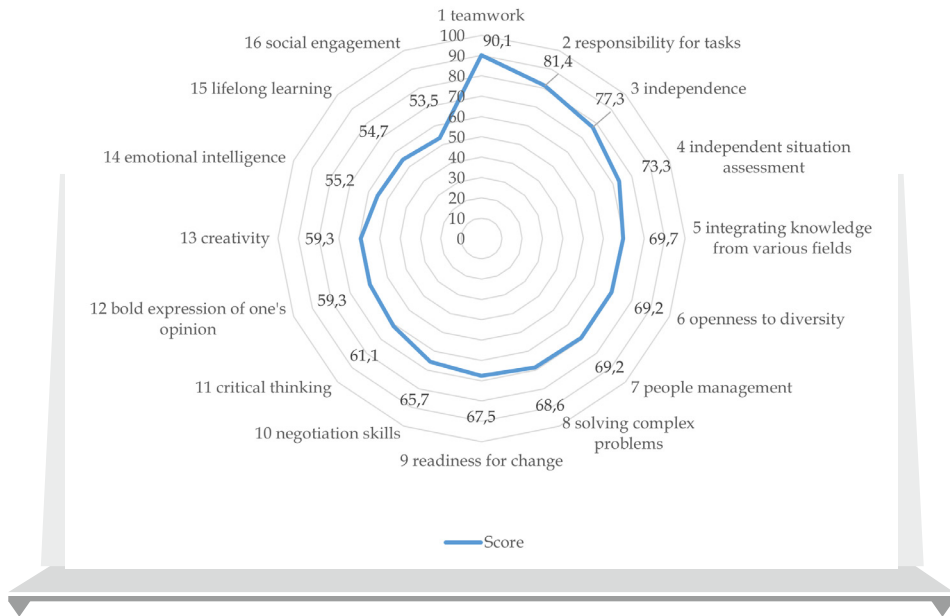

Figure 1. Breakdown of Student Responses (in %)

Source: own elaboration based on conducted research

The first observation that can be made based on the visualization of the data is the clear predominance of responses 5 - "definitely contribute" and 4 - "contribute." This situation is decidedly encouraging, as it shows that, in the students' opinion, the university is effectively fostering key competencies. Additionally, for all competencies, the smallest percentage of responses was 1 - "definitely do not contribute."

Considering the responses of 5 - "definitely contribute" and 4 - "contribute," it is also possible to arrange a hierarchy that clearly indicates which skills are sufficiently supported and which require additional effort from the university. The hierarchy is presented in figure 2.
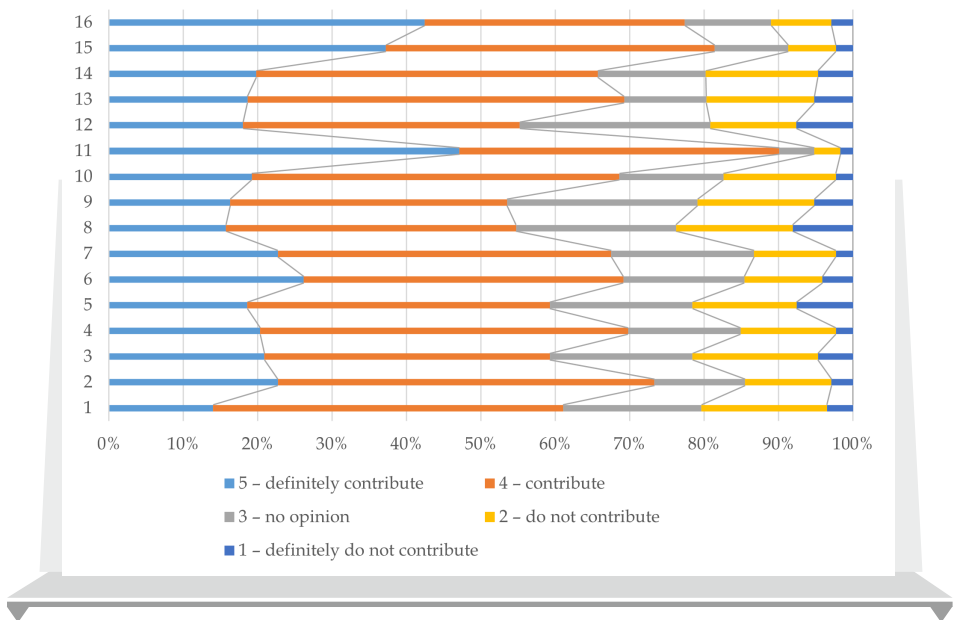
Figure 2. Hierarchy of Competencies Based on Student Responses

Source: own elaboration based on conducted research

While the three skills that the university excels in fostering (teamwork, responsibility for tasks, and independence) have already been identified, Figure 2 allows for a closer examination of the remaining competencies. Notably, for

none of the competencies did the result fall below 50%, meaning that over half of the students believe the university contributes to their development. However, achieving a result above 50% should not be considered sufficient for the university. Assuming that at least 60% of responses indicate well-executed educational tasks, the following five skills require more attention: social engagement, lifelong learning, emotional intelligence, creativity, and bold expression of one's opinions.

The competencies of female and male students were also compared to see if there were gender differences in assessments of these skills. For this purpose, a Student's t-test was used, which showed that there were no statistically significant differences for any of the competencies tested ($p > 0.05$). For example, for the "Critical Thinking" competency, the $t(170)$ was -1.23, with $p = 0.22$, indicating no significant difference. Similarly, for "Boldly expressing one's own opinion," the $t(170)$ was -0.89, and $p = 0.37$, also indicating no significant difference. These results suggest that the average ratings of female and male students' competencies are comparable.

Differences in competence between different years of study were also analyzed using analysis of variance (ANOVA). The results indicate statistically significant differences in ratings of three competencies: "Boldly expressing one's own opinion" ($F(2, 169) = 3.12$, $p = 0.04$), 'Solving complex problems' ($F(2, 169) = 2.89$, $p = 0.05$) and 'Cooperating in a team' ($F(2, 169) = 3.45$, $p = 0.03$). For other competencies, the differences between the years were not statistically significant, such as for "Combining acquired knowledge from different fields," where $F(2, 169)$ was 2.78, $p = 0.06$.

In addition, a Chi-square test was conducted to examine the relationship between gender and type of study. The results of this test showed a statistically significant relationship ($\chi^2(4) = 10.23$, $p = 0.04$), suggesting that the choice of major may be partially related to gender.

In summary, the results of the statistical analyses indicate that there are no gender differences in competencies, significant differences between college years for several competencies, and a correlation between gender and choice of type of study. These observations can provide a basis for further research on factors influencing competence development and educational decisions in academia.

The third stage of the research focused on an independent assessment of ChatGPT's potential in fostering the identified 16 key skills/competencies within responsible education. table 2 presents the assessment of ChatGPT's capabilities, based on both the independent evaluation and the potential formulated by ChatGPT.

Table 2. Author's Evaluation of Shaping Key Competencies/Skills by ChatGPT

Skills/ competencies	Assessment of ChatGPT capabilities
Critical thinking	Using ChatGPT requires a developed skill of critical thinking, allowing for questioning ChatGPT's suggestions. However, the tool itself does not shape this skill and may even make the user a passive information recipient.
	Evaluation formulated by ChatGPT: moderate.
Independent situation assessment	ChatGPT provides ready-made answers, almost replacing the need for independent analysis. This skill should be acquired before starting to work with the tool.
	Evaluation formulated by ChatGPT: low.
Bold expression of one's opinion	ChatGPT allows negation of its answers and argumentation, but such usage requires prior development of skills in expressing one's own opinion.
	Evaluation formulated by ChatGPT: moderate.
Integrating knowledge from various fields	ChatGPT can connect different pieces of information, but when applied to this, the appropriate data sample should be prepared independently by the student.
	Evaluation formulated by ChatGPT: low.
Creativity	Ready-made answers formulated by ChatGPT hinder creativity and discourage creative thinking.
	Evaluation formulated by ChatGPT: low.
Openness to diversity	This skill requires interaction with various people, experiencing and living. ChatGPT can provide theoretical information with the right question, but this is not sufficient.
	Evaluation formulated by ChatGPT: moderate.
Readiness for change	ChatGPT provides ready-made answers and leaves no room for change. Each change requires the application of different output data, hence the user's competence.
	Evaluation formulated by ChatGPT: low.
Lifelong learning	The mere functioning of ChatGPT may discourage lifelong learning when students feel that artificial intelligence can answer all their questions effortlessly.
	Evaluation formulated by ChatGPT: low.

Social engagement	This skill, shaped by participating in student organizations, NGOs, and other initiatives for the benefit of society, cannot be supported by ChatGPT. Sensitivity in this area can be conveyed by instructors, but ChatGPT cannot do that.
	Evaluation formulated by ChatGPT: low.
Solving complex problems	ChatGPT does not support this skill. It can generate necessary information, but the scope must be determined independently by the student.
	Evaluation formulated by ChatGPT: low.
Teamwork	Working with ChatGPT is mainly individual and does not allow for teamwork.
	Evaluation formulated by ChatGPT: low.
Emotional intelligence	Emotions are beyond ChatGPT's understanding; maturity in this area can be shaped by interactions with other people.
	Evaluation formulated by ChatGPT: low.
People management	Only at a theoretical level can ChatGPT provide information in this area. Practice is necessary, however.
	Evaluation formulated by ChatGPT: low.
Negotiation skills	Only at a theoretical level can ChatGPT provide information in this area.
	Evaluation formulated by ChatGPT: low.
Responsibility for tasks	Using ChatGPT requires responsibility from students, a skill that the tool does not shape.
	Evaluation formulated by ChatGPT: low.
Independence	ChatGPT provides ready-made answers to students, somewhat limiting autonomy.
	Evaluation formulated by ChatGPT: low.

Source: own elaboration

The independent assessment of ChatGPT's capabilities clearly indicated that key competencies/skills among students should primarily be cultivated by the university, with ChatGPT serving only as a supportive tool in this regard. A student using ChatGPT needs to possess certain skills/competencies before engaging with AI to fully leverage its potential for their own development. Many

of the listed skills/competencies can be developed not only during academic classes but also through involvement in scientific circles, student organizations, NGOs, or through volunteering. However, the survey results showed that only 20% of students participate in such activities. In contrast, 80% of the surveyed students are engaged in professional or part-time work.

The fourth stage of the research involved asking ChatGPT to evaluate how well it fosters the listed skills/competencies. The rating scale proposed by ChatGPT was as follows: low, moderate, medium, high, very high. In its responses, ChatGPT used only the ratings: low (13 responses) and moderate (3 responses), clearly indicating its limited usefulness in this regard. Greater attention should be paid to the five skills that the university's efforts have addressed the least effectively. Proposed solutions in this area are detailed in table 3.

Table 3. Enhancement proposal for competencies that were rated lowest using ChatGPT

Skills/competencies	Evaluation formulated by ChatGPT	Proposal for solution using ChatGPT
Social engagement	low	Engaging students in social activities and demonstrating how ChatGPT can quickly and effectively compile past problem-solving experiences. The tool can also serve as a source of ideas for social initiatives.
Lifelong learning	low	Teaching students to use ChatGPT not just for simple answers to immediate tasks, but as a tool for exploration and seeking answers to various questions.
Emotional intelligence	low	ChatGPT can provide theoretical knowledge in a friendly manner, which serves as a foundation for further development.
Creativity	low	Sparking students' curiosity towards new AI-based tools, stimulating them to seek new solutions and not stopping after obtaining the first answer from ChatGPT.
Bold expressions of one's opinion	moderate	Teaching students to engage in discussions with ChatGPT, identify errors, and engage in debates that lead to better solutions.

Source: own elaboration

The compilation of solutions for shaping key competencies using ChatGPT demonstrates that such applications are feasible in nearly every case. The

key is to carefully consider how to implement this relatively new tool in the educational process. Such an open approach from educators can contribute not only to increasing the level of competency development but also to enhancing student engagement.

As part of the fifth stage of the research, recommendations were gathered for universities regarding the development of key competencies/skills:

• Conducting periodic surveys among students to monitor the development of key competencies—Generational dynamics and evolving educational needs argue for the periodic repetition of surveys to maintain their relevance.
• Updating the list of key competencies in line with the latest research—Changes in the job market necessitate attention to evolving competency requirements.
• Focus on teaching students responsible and critical use of ChatGPT.
• Integrating AI elements into existing student education.
• Openness and flexibility of educators and students towards new solutions and introducing changes in the educational process.

These recommendations serve as a starting point for further research into shaping key competencies in education. They also provide a foundation for changing the way we think about student education.

5. Discussion and conclusions

In the coming years, higher education will undoubtedly face many new challenges. Responding to the first research question regarding the extent to which universities foster individual key competencies among students, it is evident that the university significantly contributes to their development. The conducted research indicates that students recognize the university as a place that helps shape key competencies, with each competency being rated as developed during studies by over 50% of students. Nevertheless, it should be emphasized that the conclusions presented cannot be generalized, as they are not formulated on a representative sample.

The fifth stage of the research aimed to formulate recommendations. The first recommendation for universities and their staff is to try to abandon the avoidance of AI in education and instead focus on teaching responsible use of ChatGPT and other AI-based tools. In this way, it would be possible to test whether artificial intelligence can indeed enhance the potential of teachers and students. Moreover, effective implementation of AI tools requires collaboration between teachers and students, who should provide feedback (Ruiz-Rojas et al., 2023). As highlighted in the original assessment of ChatGPT capabilities, users

of this tool need certain foundational skills/competencies to effectively utilize the tool and achieve genuine AI-driven development.

Regarding the second research question on the extent to which ChatGPT can support the development of key competencies among students, it is noted that the tool's capabilities alone are limited. However, the utilization of ChatGPT will be more effective when students receive support in this regard. Therefore, concerning the third research question on whether ChatGPT can support the development of competencies that universities struggle with the most, the answer is conditionally affirmative. Specifically, while ChatGPT has enormous potential, its educational use will only be feasible when educators and learners jointly explore its capabilities, leveraging creativity and commitment to discover new solutions and enrich their skills. Hence, it is essential to rethink how to teach the use of new technologies so that they truly become tools for development.

It is forecasted that AI will surpass human capabilities in many fields in the coming years, including education, offering increasingly better and more personalized solutions (Yu & Guo, 2023). However, amidst this progress, it is crucial to remember that the relationship with AI is always one-sided and cannot replace human-to-human interaction. In the future, this aspect may become a key challenge in the educational process (Gajosowa, 2023). Given these forecasts, neglecting AI would be detrimental to students and certainly not indicative of responsible education.

The findings indicate that effective use of ChatGPT necessitates prior acquisition of specific skills and competencies, positioning universities as key facilitators in preparing both students and teachers for its use. The study acknowledges the limitation of its sample size, suggesting that future research should involve a larger sample. Practical implications highlight the importance of incorporating the recommendations into university education planning. Social implications suggest that the implementation of these recommendations will equip future labor market participants with the competencies required to swiftly respond to changes. The article contributes a novel perspective on didactics by exploring how AI tools like ChatGPT can support education.

Directions for further research should include expanding the scope of analysis to include new groups of respondents, such as university teachers, whose perspective can provide important information on developing competencies in the higher education process. The inclusion of this group would make it possible to investigate the extent to which teaching activities are in line with students' expectations and needs for developing key skills.

In addition, it would be worth considering including more diverse groups of students, such as those from different majors, universities with different profiles (e.g., universities vs. technical colleges) or international students. The research could also include an analysis of differences in attitudes toward using tools such as Chat GPT, which are increasingly influencing learning and academic skill development.

During the course of the survey, some problems were encountered that should be taken into account in the planning of subsequent analyses. One of them was the large differences in respondents' knowledge of advanced technologies such as Chat GPT, which could have affected the assessment of competencies related to critical thinking or creativity. In addition, the diversity of respondents' level of academic experience may have affected the results, so it is worth considering a more precise differentiation of the research sample.

Further research could also focus on the qualitative aspect of the competencies analyzed, using in-depth interviews or focus groups to better understand the mechanisms of their development and identify barriers and enablers. This type of analysis would allow better alignment of educational programs with the needs of today's labor market and society.

Abstract

The article aims to identify the significance of ChatGPT in shaping key skills and competencies among students, framed within the concept of responsible education. Responsible education is defined as enabling young people to actively engage in the labour market, create their career paths, and adapt to changing conditions. The study achieves its aim through a literature review identifying relevant skills and competencies for responsible education, followed by a survey conducted among students to draw critical conclusions. Additionally, an original assessment of ChatGPT's potential in responsible education is provided, along with educational recommendations.

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