

Educational Stress and Artificial Intelligence Tools: A Study of International Students' Experiences in Spanish Higher Education

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Abstract

Stress has become a pervasive challenge for students navigating the demands of modern education, often undermining both academic performance and overall well-being. This study explores the transformative potential of artificial intelligence (AI) tools in alleviating educational stress among international students at C3S Business School in Barcelona, Spain. Employing quantitative methods, the research investigates students' experiences with AI-powered educational technologies. The findings present a nuanced landscape: many students benefit from the personalized support these tools provide, helping them manage assignments more efficiently and access learning resources with greater ease. For some, this leads to a notable reduction in academic pressure and increased productivity. However, the advantages are not uniform. Several participants voiced concerns about the overreliance on technology, ethical issues, and the risk of diminishing critical thinking skills. The study also highlights the varied ways AI tools are adopted, influenced by demographic factors, individual learning preferences, and academic disciplines. Ethical considerations—particularly around data privacy and academic integrity—emerge as central themes. In conclusion, the research advocates for the thoughtful

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and ethical integration of AI in education, emphasizing its potential to enhance student engagement and learning outcomes while safeguarding academic values.

Keywords

Artificial intelligence, educational stress, learning, student well-being, adaptive learning

Introduction

The transition to higher education presents students with various challenges that can negatively affect their well-being. These challenges include academic pressures, environmental stressors, and interpersonal conflicts. For example, Bhujade (2017) explores the complex interplay between depression, anxiety, and academic stress, emphasizing the need for a comprehensive strategy to address mental health issues in higher education. Yikealo et al. (2018) examine academic and environmental stress within a college of education, offering detailed insights into stressors specific to different academic disciplines. Karaman et al. (2019) identify key predictors of academic stress, which are essential for developing targeted stress-reduction interventions. Kauts (2016) highlights the role of emotional intelligence in mitigating academic stress, suggesting its importance in helping students cope with academic demands. Akman (2022) underscores the significance of effective teaching strategies in reducing stress among educators. All this indicates that the complex relationship between stress and memory illustrates its paradoxical role: stress can act as both an enhancer and an impediment to learning.

This study aims to contribute to the field of artificial intelligence (AI) by examining stress levels in online and traditional classroom settings. It analyzes how cultural differences, coping resources, and mental health concerns influence students' academic experiences, stress levels, and overall well-being. The research also explores

students' understanding of course requirements and their exam preparation strategies, offering insight into how different learning environments affect stress and academic performance.

In addition, the study investigates students' use of AI tools, particularly during exams, revealing a general preference for working independently. It further explores the potential of AI to reduce educational stress, improve productivity, and support the development and recognition of soft skills and well-being in academic settings.

More broadly, the study addresses challenges and ethical considerations related to AI use, including data privacy and academic integrity. It emphasizes the importance of integrating AI tools to foster student engagement, alleviate stress, and promote positive outcomes across the educational landscape.

Higher Learning, Stress and AI Tools

Transition to higher education can often increase stress among bachelor's students. The academic systems in place play a significant role in shaping the overall student experience. Elements such as curriculum design, assessment methods, and support services can significantly affect how students perceive their academic journey. Understanding how these systems operate at educational centers is crucial to contextualizing students' challenges. Higher education often introduces stressors, including academic pressure, demanding workloads, and adapting to a new social environment. Therefore, examining the specific sources and manifestations of educational stress among students is essential. This examination can provide insights into the unique challenges faced by students. Moreover, cultural influences, institutional policies, and the prevailing academic climate significantly contribute to bachelor students' experiences, providing a nuanced perspective on educational stress and conflict management practices.

Delinquent adolescence and adulthood are transitional periods characterized by significant physiological and psychological changes, including elevated stress (Scales et al. 2015; Romeo et al. 2016; Barbayannis et al. 2017). This pattern is especially prevalent among college students, with three out of every four reporting feeling stressed and one out of every five reporting suicidal thoughts because of stress, according to a 2015 American College Health Association-National College Health Assessment survey (Liu et al. 2018; American Psychological Association 2020). Studies by Liu et al. (2018) and Karyotaki et al. (2020) suggest that college stressors may predict mental health diagnoses. It is also the time when many mental health conditions start to manifest, such as anxiety, depression, and substance abuse disorders (Blanco et al. 2008; Pedrelli et al. 2014; Liu et al. 2018). Many factors contribute to the multifaceted stress that college students experience (Jayasankara Reddy et al. 2018; Karyotaki et al. 2020). According to a nationwide survey, academic-related stress plays a significant role in college and is the primary source of stress for 87% of college students (American Psychological Association 2020).

According to Bhandari (2012) and Lin & Huang (2013), university life is frequently acknowledged as a stressful time in a person's life that is linked to mental and emotional strain. During their time in higher education, students typically face various social, academic, and personal difficulties. Academic assessment is one of the primary sources of stress that college students have reported (Conley & Lehman 2012). However, there are other situations about everyday issues like transportation, academic overload, or unsatisfactory staff behavior (Evans et al. 2018; Ryan 2009). One of the highest reasons for academic stress has also been found to be conflicts and pressures (Poon et al. 2012).

Robbins and Sanghi (2006) defined stress as a situation in which individuals find themselves when they have a strong desire to pursue a challenging goal with a rewarding outcome. Ekpenyong et al. (2019) described stress as the physical and mental demands

placed on students pursuing higher education. The pressure to achieve academic success and excel in a new environment can lead to stress, causing fatigue, irritability, loss of appetite, insomnia, and even depression, as noted by Joseph (2009). Exposure to a new academic environment can test students' resilience to stress and strain. Richardson (2002) suggested using a systematic approach to foster resilience and intrinsic motivation in students following stress exposure at school. Dwyer and Cummings (2001) found that improved stress management is associated with higher levels of self-efficacy, leading to better-coping mechanisms. Seeking social support is a helpful coping strategy for students to alleviate academic-related stress, as they can discuss their academic difficulties with peers, family, or teachers. Students can use Problem-oriented coping strategies, including time management, study regimens, and seeking extra resources to improve learning. Leonard et al. (2015) found that academic-related stress can increase drug and alcohol use among young people. Waqas et al. (2015) demonstrated the cross-cultural impacts of stress on sleep quality and quantity in tertiary education students, highlighting the importance of addressing stress to improve overall well-being. Bush and Folger (2005) suggest that participating in conflict resolution procedures can help students assess situations, consider different points of view, and generate creative solutions, ultimately reducing stress. Dwyer and Cummings (2001) explored the link between coping mechanisms used by college students and stress, emphasizing that unresolved disputes can exacerbate stress and impact students' coping skills and self-efficacy.

A university is where students learn and experience new things while adapting to academic and social life. However, student retention is a significant issue in higher education worldwide due to its negative impact on students, institutions, and society. The transition to university, with changes in peer connections and lifestyle, often requires adjustments to personal and academic goals and can be a significant source of stress for many individuals. To address this issue, universities must take responsibility for providing

preventive and intervention measures within an integrated mental health care system for students. In Spain, the new virtual learning model, long-term uncertainty, and modifications to the scholarship program have led to an increase in students seeking psychological care services. Symptoms of anxiety (19.6%), sadness (22.1%), and stress (19.7%) are prevalent among one in five Spaniards, with higher rates of these symptoms among young individuals (three out of twelve between the ages of 18 and 24). Similarly, research conducted in Costa Rican higher education institutions from 2014 to 2018 revealed a 49% increase in requests for psychological care services due to educational stress.

According to Bouchrika (2023), 40% of college students in the United States feel they need to be more adequately rested five out of seven days each week. One in four American college students indicated that lack of sleep has negatively affected their academic performance in the form of lower grades, missed deadlines, or having to withdraw from class. Students who sleep six or fewer hours a night have lower GPAs than those who get eight or more hours per night. Interestingly, while 40% of American college students take naps, nappers tend to sleep less than non-nappers. Stress is also a significant issue for college students. 45% of American college students reported feeling “more than average stress,” while 33% of students reported “average stress,” and 12.7% reported “tremendous stress.” Only 9% of students reported experiencing “no stress” or “less than average stress.” In the United Kingdom, eight out of ten university students reported experiencing stress and anxiety. Additionally, 45% of United Kingdom students reported feeling stressed by their courses, which is higher than the percentage of students who enjoy their classes (41%).

According to recent studies, finals and midterms are the top source of stress for 31% of students in the United States, followed by class and workload at 23% and homework at 13%. About 36.5% of U.S. college students reported that stress was the main reason

for their negative academic performance in the past 12 months, with anxiety being another significant factor at 29.5%. Among American middle school students, 61% felt pressure to obtain good grades, whereas 29% felt pressured to look good, 28% felt the need to fit in socially, and 21% felt pressured to concern themselves in extracurricular activities and be good at sports.

According to a recent survey, only 23% of students in the United Kingdom are satisfied with the mental health resources offered by their universities. However, in the United States, 75% of college and university students know where to find on-campus professional mental health services. In 2018, 20.3% of college students seeking mental health services used their college or university counseling or health services. In the US, 61% of college students reported receiving information on stress reduction from their schools. Furthermore, 41% of US college students terminated their mental health services at the end of the term or semester. There has been a steady increase in the use of medication to deal with mental health issues among US college students. In 2010-2011, 31.3% of students received medication; in 2018-2019, this number rose to 34.3%.

Holmes et al. (2023), in their work “Artificial Intelligence in Education: Promises and Implications for Teaching and Learning,” explore how customizing learning experiences, improving teaching strategies, and automating assessments could transform education. They discuss AI-driven solutions, such as adaptive learning platforms and intelligent tutoring systems, which can provide personalized learning experiences and potentially reduce educational stress. These systems allow students to progress independently, using real-time feedback, particularly during high-stakes exams or assignments. Additionally, the authors highlight ethical concerns related to integrating artificial intelligence, including data privacy, algorithmic bias, and the risk of depersonalizing education. While artificial intelligence can significantly reduce stress and improve learning outcomes, the authors emphasize the importance of implementing this technology thoughtfully.

Bajwa et al. (2024) investigate the effects of AI on children and young people, broadening the conversation about AI's influence outside the classroom into the home. The writers present the idea of “digital guardianship,” in which teachers and parents help kids negotiate their relationships with artificial intelligence and digital technology so that their well-being is in good balance with technological participation. This approach emphasizes the need for emotional support, digital literacy, and mindfulness—qualities that can assist in reducing stress related to the heavy usage of AI technologies. Although artificial intelligence can lower academic pressure and improve learning, the authors contend that cautious management of its integration will help to safeguard kids' emotional and developmental requirements.

The education sector is increasingly leveraging advanced technologies to enhance learning experiences. Artificial intelligence (AI) and machine learning enable personalized instruction, while virtual and augmented reality create immersive learning environments (Warschauer & Matuchniak 2010). Blockchain is being explored for secure record-keeping, and chatbots or virtual assistants now respond instantly to student queries (Dede 2010). Big data and analytics further inform teaching strategies and curriculum development.

AI-powered platforms analyze students' learning patterns to deliver customized experiences—adjusting content, pace, and difficulty levels according to individual strengths and weaknesses (Aggarwal 2018). Adaptive learning systems continuously assess performance to ensure students remain engaged and appropriately challenged (Reiser 2013). These technologies also promote inclusivity; AI tools, simulations, and virtual labs improve content accessibility for students with hearing impairments or language barriers, while assistive technologies such as text-to-speech and speech-to-text support students with disabilities (Warschauer & Matuchniak 2010).

AI has the potential to automate grading, offer real-time feedback, and support learners beyond traditional classroom hours. It can identify students at risk of falling behind, analyze educational data to guide curriculum refinement, and even detect emotional cues that signal student distress. By streamlining administrative tasks, AI also allows educators to focus more on teaching (Ertmer & Ottenbreit-Leftwich 2010). AI-driven tools such as virtual counselors and chatbots can monitor students' emotional states, provide early interventions, and offer a nonjudgmental platform for self-expression (Kay 2006). These tools can track mood changes, suggest stress management strategies, and offer self-care recommendations during high-stress periods. They can also simulate therapeutic environments using virtual reality and analyze written content to detect emotional distress (Means et al. 2010). AI thus fosters a sense of community and can guide students through mindfulness exercises and breathing techniques.

However, AI should complement—not replace—human interaction and professional counseling. Collaborating with trained mental health professionals is essential to ensure students receive appropriate support (Reiser 2013). AI-driven writing tools have shown promise in improving writing skills and self-efficacy by offering timely, targeted feedback (Mazzone & Elgammal 2019). Quantitative research using surveys and interviews has explored students' perceptions of AI in academic writing, identifying key use cases and areas for improvement across diverse subjects. AI language models like ChatGPT assist with idea generation and content structuring, but students must still refine and expand on AI-generated outputs (Dwivedi et al. 2023). Ethical concerns remain, especially regarding plagiarism and academic integrity, underscoring the need for guidance on responsible AI use. AI-powered peer review systems and automated essay evaluation tools have also proven reliable for formative assessment (George & Wooden 2023).

Ethical considerations in AI integration are critical. Teachers must help students develop creativity and critical thinking, and

institutions must provide clear guidelines on AI limitations (McMahan et al., 2017). Dwivedi et al. (2023) also highlight the need for further research into issues like bias, contextual understanding, and ethical use. While AI tools offer substantial support in essay writing, balancing human guidance and AI assistance is key to maintaining academic integrity and creativity.

In STEM education, Kim and Kim (2022) explored teachers' perspectives on AI-based educational tools for scientific writing. Most educators supported AI's role in instructional design but also expressed concerns about transparency, the potential replacement of teachers, and the need for more professional development. This underscores the importance of integrating AI thoughtfully into STEM education.

Recent studies also examine the potential of tools like ChatGPT-3 to reduce cognitive overload and support learning by assisting with essay planning, grammar correction, and knowledge reinforcement (Crawford et al. 2023). However, the importance of student autonomy is emphasized—AI tools should enhance, not replace, students' independent thinking and writing. As generative AI becomes increasingly common in academic work, concerns about academic fraud have intensified (Oravec 2023). These concerns highlight the need for equitable access, trustworthy systems, and pedagogical strategies to ensure ethical AI use.

Yawer et al. (2023) proposed a speech-based AI instrument to diagnose student stress levels, offering insights into methodology and potential applications. However, the study also points out risks such as the possibility of inaccurate results and associated harm, emphasizing the need for careful implementation.

AI chatbots now offer individualized feedback tailored to students' needs, supporting personalized learning models that accommodate diverse learning styles and abilities (Ifelebuegu 2023). ChatGPT and similar tools process natural language to provide 24/7 tutoring, simplifying complex topics and enhancing student engagement (Hew et al. 2019; Limna et al. 2023). These tools reduce the pressure associated with traditional classrooms, where learners

often have varying comprehension levels. AI also contributes to more inclusive education by assisting students with disabilities and translating materials for non-native speakers (Pagliara et al. 2023; Hari et al. 2025).

For students with ADHD or other learning challenges, tools like ChatGPT and Duolingo offer customized learning support. AI can also play a role in student mental health by detecting signs of anxiety or distress through interaction patterns. These tools provide nonjudgmental emotional support and offer valuable information about mental health resources. Especially in remote learning contexts, AI can help alleviate loneliness and foster connection.

Beyond academic assistance, ChatGPT can answer both educational and general queries, serving as a virtual tutor for students and a support resource for educators. Teachers can use AI for lesson planning and pedagogical advice, while researchers may rely on it for literature reviews or idea generation (Kasneci et al. 2023; Kuhail et al. 2023; Olujimi & Ade-Ibijolla 2023).

Method

Research Design

This research employs a quantitative design, focusing on the collection and analysis of numerical data to understand the relationship between AI tools and educational stress among students. The primary data source is an online questionnaire designed to gather responses regarding participants' experiences and perceptions. The study examines how AI tools—such as chatbots, automated tutoring systems, and other AI-driven educational technologies—affect students' levels of academic stress. The questionnaire is widely distributed to ensure accessibility to a diverse student population, allowing for the efficient collection of structured responses.

Participants' answers reflect their individual experiences and perspectives on AI tools and educational stress. Because educational stress is a subjective experience, capturing students' interpretations is essential, rather than relying solely on objective indicators.

Accordingly, the study adopts an exploratory approach to uncover patterns and relationships rather than confirm pre-existing theories. Given that the impact of AI on student stress is a relatively new area of research, this flexible approach allows for varied interpretations of the data.

In line with the quantitative research paradigm, the study incorporates both closed-ended and open-ended questions. Closed-ended questions yield structured data to quantify trends, while open-ended questions allow students to elaborate on their experiences, providing qualitative depth. This mixed-format approach facilitates the collection of both statistical data and rich, nuanced insights.

Participants

As shown in Table 1, the participants in this study consisted of fifty-seven international students who were either using AI tools or experiencing educational stress. This group included thirty-three undergraduate students and twenty-four graduate students. We employed a random sampling method, meaning participants were selected from a larger population without bias. This approach helps ensure that the sample is representative of the broader student population and minimizes selection bias. Using random sampling enhances the reliability of the results by including students with diverse experiences and perspectives.

To recruit participants, the researchers emailed all undergraduate and graduate students in the social sciences, inviting them to complete a questionnaire about their current experiences. The focus on social sciences is significant, as students in this field often use AI tools for research, writing, and data analysis. Additionally, they may face academic stress related to coursework, deadlines, and the need to process large volumes of information.

Recruiting participants via email allowed for quick and widespread distribution. This method also made participation more convenient for students and helped maintain their anonymity, encouraging honest and candid responses.

Data Collection

Neuman (2000) emphasizes the importance of aligning research questions with appropriate data collection techniques, identifying open-ended questionnaires as particularly effective for exploratory research. Similarly, Riessman (1993) highlights the value of eliciting collaborative and meaningful responses from participants, noting that even non-verbal communication can enrich narrative data.

This study utilized a questionnaire comprising both closed-ended and open-ended questions. The first section gathered demographic information, including gender, marital status, age, and academic level. The second section explored participants' experiences with AI tools in relation to educational stress. The final section invited participants to suggest ways to use AI tools and describe the actions they take when dealing with academic stress.

The study focused on international students at C3S Business School in Barcelona, Spain. A total of fifty-seven students participated in this cross-sectional, quantitative study conducted in April 2024. The data analysis was primarily descriptive, especially concerning demographic results, as presented in Table 1. The researcher reported the number and percentage of participants within each demographic category (e.g., gender, marital status), though no in-depth statistical analysis was conducted for this section. In contrast, the open-ended responses were examined through content analysis, where the researchers quantified and interpreted recurring themes and insights.

Ethical Considerations

Participants were initially given a verbal briefing about the purpose of the study. This was followed by an email containing an information sheet that outlined the study's objectives in detail. Confidentiality and anonymity were assured, and participants were informed that their participation was entirely voluntary. They were also made aware that they could withdraw from the study at any time without facing any negative consequences.

Results

Table 1 presents the demographic profile of the 57 participants who completed the online questionnaire. The majority of respondents were female (59.6%), and most identified as single (84.2%). The largest age group was 21 to 25 years old, representing 40.4% of the sample. In terms of educational background, 57.9% were pursuing a bachelor’s degree.

These findings indicate that the study primarily involved young, single undergraduate students, suggesting a sample that is somewhat diverse but relatively homogeneous in terms of age and education. The mean values for Gender, Marital Status, and Age were 1.39, 1.11, and 2.14, respectively.

Table 1. Demographic Profile of the Participants

Participants	Gender	Marital Status	Age	Study Level
57	Male=34 (59.6%)	Married=6 (10.5%)	Less than 18 years old=0	BA=33 (57.9%)
	Female=22 (38.6%)	Single=48 (84.2%)	18–20-year- old=13 (22.8%)	MBA=24 students (42.1%)
	Other=1 (1.8%)	Other=3 (5.3%)	21-25 years old=23 (40.4%)	
	Mean= 1.39	Mean= 1.11	26-30 years old=14 (24.6%)	
			More than 30 years Old=7 (12.3%)	
			Mean =2.14	

Table 2 shows findings on the relationship between educational stress and students' use of AI tools. The data showed that a majority of students (57.9%) experienced stress during exam periods and assignment submissions but reported being able to manage it. In contrast, 14% of students experienced stress without knowing how to cope, while 10.5% reported feeling no stress during these academic activities.

In terms of AI tool usage, 42.1% of students reported using AI tools during exam periods to assist with their assignments. Meanwhile, 49.1% did not use AI tools at all during these times, and 8.8% stated that they used them occasionally, depending on the nature and difficulty of the assignment.

When asked whether AI tools were effective in helping them manage academic stress, 40.4% of students believed that these tools provided meaningful support. However, a larger proportion (52.6%) felt that AI tools did not help reduce their stress levels. A smaller group, accounting for 7%, expressed that the effectiveness of AI tools varied depending on the assignment.

Table 2. Educational Stress and the Students' Use of AI Tools

Question	Results	
In the exam time and assignment	I usually have stress.	N=10- 17.5%
	There is no stress for me.	N=6 -10.5%
	I have stress, but I know how to manage it.	N=33 - 57.9%
duration...	I have stress and do not know how to manage it.	N=8 -14%
	I do not have any specific idea.	N=0

Table 2. (Continued)

I usually use AI tools to write better assignments during exam time and assignment duration.	Yes	N=24 - 42.1%
	No	N=28 - 49.1%
	Sometimes- It depends on the assignment	N=5 - 8.8%
I use AI tools, and I can manage my educational stress.	Yes	N=23 - 40.4%
	No	N=30 - 52.6%
	Sometimes- It depends on the assignment	N=4 - 7%

In the open-ended section of the survey, participants were asked to specify the AI tools they use for their assignments. The responses indicated a range of tools, including ChatGPT, Google Bard, YouGPT, and Vertex AI. This variety highlights the diverse array of AI resources that students utilize to support their academic work.

Participants were also asked: “Please write about your general idea about AI tools. Can it be helpful for students or not? Why?” In response, many explained that AI tools are valuable for enhancing how students develop content. They noted that AI can help generate ideas or explain concepts that are not fully understood, making it easier to grasp complex topics. Additionally, AI tools can save time and assist in finding relevant information more efficiently.

One participant shared: “I’m not someone who just copies and pastes information from AI tools. I believe it’s better to read the AI-generated responses, understand them, and then rewrite the content in your own words. That’s the best way to use these tools.” They further explained that they typically use AI tools alongside task-related websites, combining insights from both sources to create original work. This approach, they said, results in content that is distinct from what either the AI or the websites provide.

The participant added that they had learned this method in high school and emphasized that using AI tools should involve personal effort and understanding. AI can also be useful for generating unique ideas or brainstorming, especially by helping students stay informed about current trends.

The participants emphasized the importance of refraining from using AI tools directly during exams, as this could undermine the integrity of their intellectual efforts and increase the risk of academic failure. They acknowledged, however, that AI tools can be highly beneficial in various aspects of learning. According to the participants, these tools are accessible and efficient, making the learning process more engaging. They also noted that AI can help students identify their strengths and weaknesses, which allows for more targeted and personalized learning. In comparison to traditional search engines, AI was seen as a more efficient and insightful research tool, particularly useful for exploring academic theories. Some participants even reported that, over the past year, their research time had been reduced by more than 50% through the effective use of AI tools.

The participants stressed the importance of using AI tools in moderation. They noted that overreliance on these tools could hinder creativity and critical thinking—skills that are essential for effective learning and problem-solving. While they acknowledged that AI provides specific information and helps identify key areas to focus on, they also stressed that it should not replace individual effort. According to the participants, AI tools can save time when addressing unfamiliar topics and support self-paced learning without the fear of judgment, thereby reducing ignorance. Some participants mentioned that AI can be useful for improving sentence construction, generating ideas, or offering main points, but they insisted it should not be used for cheating. They viewed AI as easy to access and generally reliable, but underscored the importance of self-reliance. One participant noted that AI can help students see problems from new perspectives, which is essential for solving assignments effectively. However, another participant expressed a strong opinion, stating, “I firmly believe that using AI is cheating.”

The participants agreed that AI tools are not only beneficial for students but also for individuals in various professions. They highlighted that AI can support students by providing ideas

and enhancing their understanding during the research process. According to them, AI is particularly useful when students struggle to understand an assignment or need clarification on what is required. The participants noted that AI tools can also help reduce academic stress. For example, when facing the pressure of assignment deadlines, AI can assist students in understanding the task more clearly and in deciding what to include and how to structure their responses. They emphasized that AI tools are especially helpful for assignments and projects, as they offer guidance on content development and formatting, giving students a clearer overall idea of how to approach their work.

The participants viewed that the true value of using AI tools lies in understanding the concepts behind the AI-generated content. They cautioned that simply copying and pasting information without comprehension is not only ineffective but also constitutes a form of academic dishonesty. According to the participants, students must engage actively with the material—asking questions, thinking critically, and expressing ideas in their own words—in order to truly benefit from AI tools. They noted that AI is a source of support, not a shortcut. When used ethically, tools like chatbots for information retrieval can serve as reliable resources that enhance the learning experience. Participants also noted that AI can be particularly helpful when students are under time pressure, as it provides guidance that can help them complete assignments more efficiently without compromising academic integrity.

Some participants expressed skepticism about the use of AI tools in education, viewing it as a form of cheating. They felt it was unfair for students to receive high grades without putting in genuine effort. One participant stated that they would not recommend the use of AI tools to new students. While some disagreed with using AI to write entire essays or presentations—arguing that it undermines the purpose of learning—they still supported the idea of using available tools to assist with academic work. Others argued that relying on AI prevents students from solving problems on their own and hinders

the development of personal writing styles, making them dependent on machine-generated content to succeed. A few participants noted that they could not provide an opinion due to limited access to or experience with AI tools. While many acknowledged the benefits of AI, they also warned that misuse or overdependence could be misleading and promote laziness by discouraging independent thinking.

Discussion

Personalized Learning and Stress Management

Incorporating AI tools into the education system transforms how students interact with educational materials. AI-driven platforms provide personalized learning experiences by adapting content and difficulty levels to individual strengths and weaknesses. This approach allows students to take more control over their learning process, reducing pressure in standardized educational environments.

The study findings support this perspective: 42.1% of participants reported using AI tools during exams and assignments (see Table 2). This aligns with previous research by Kasneci et al. (2023), which found that AI-driven personalized learning platforms can enhance academic performance by catering to the needs of individual students. Furthermore, AI contributes to stress reduction, particularly during high-pressure academic periods. According to 49.1% of study participants, AI tools helped manage stress related to exams and assignments. These results echo the findings of Holmes et al. (2023), who identified AI-powered adaptive learning as an effective stress management tool.

AI and Educational Accessibility

In addition to providing academic support, AI tools play a vital role in enhancing inclusivity and accessibility within education. Technologies such as text-to-speech, speech-to-text, and language translation allow students with disabilities or language barriers to

engage more fully in their learning environments. These tools help foster a sense of belonging and promote academic equity by enabling all students to access and participate in educational content more effectively.

As indicated in Table 2, many students reported using AI tools daily, primarily to manage their academic workloads. By streamlining the research process, helping organize ideas, and offering structured guidance, AI tools ease the burden of academic tasks. This reinforces their role in making education more accessible and manageable for a diverse range of learners.

AI as an Academic Support System

AI tools serve as powerful resources for academic support, significantly reducing the time students spend searching for relevant sources. As indicated in Table 2, many participants reported that AI tools help them complete assignments more efficiently. By scanning large volumes of information, identifying key points, and offering structured assistance, AI simplifies the research process and helps alleviate academic stress.

In addition, AI supports students by breaking down complex tasks into manageable steps and providing clear guidance on how to structure assignments and research papers. These findings are consistent with previous studies suggesting that AI tools can reduce academic anxiety by offering direction and clarity throughout the learning process.

Potential Risks and Challenges of AI Use

Despite the many benefits of AI, some participants in the study voiced concerns about its potential drawbacks, particularly the risk of overreliance. A recurring theme was that excessive dependence on AI tools could undermine the development of critical thinking and problem-solving skills. Participants warned that students who copy and paste AI-generated content without truly engaging with it may lose the ability to think independently and creatively.

This concern aligns with Oravec's (2023) argument that heavy reliance on AI can foster academic dependency and raise serious issues related to academic integrity. These findings highlight the importance of using AI as a supplement to, rather than a substitute for, active learning and intellectual engagement.

Moreover, AI-generated content is not always accurate or free from bias. Because AI systems are trained on existing data, they may inadvertently reinforce existing biases or present misleading information. Without appropriate guidance from educators, students risk relying on content that is inaccurate or biased, potentially affecting the quality and integrity of their academic work.

Another major concern raised by participants was academic integrity. The study revealed that some students perceive the use of AI—particularly for generating entire essays or assignments without proper attribution—as a form of academic dishonesty. This concern is supported by research highlighting the risks of AI-generated plagiarism.

Finally, participants emphasized that AI tools cannot replace the value of human interaction in education. Teachers offer emotional support, motivation, and mentorship—critical elements that AI cannot replicate. One participant remarked, “AI does help, but if you rely on it too much, it could make students lazy and less likely to develop critical skills.” This sentiment reflects Oravec's (2023) argument that excessive dependence on AI may reduce students' engagement with deeper learning processes.

Limitations and Recommendations

This study is not without limitations, which should be taken into account when interpreting its findings. One key limitation is the time constraint. Although the review incorporates research published up to January 2022, it may not reflect the most recent developments in the field. Given that studies on stress in higher education continue to evolve rapidly, newer research published after the cutoff date may offer additional insights or even contradict earlier conclusions.

Another important limitation concerns the assessment of methodological quality. Evaluating the rigor and potential bias of individual studies is crucial for ensuring the reliability of the review's conclusions. However, challenges such as the limitations of available assessment tools and disagreements among reviewers about how to measure study quality may have affected the consistency and dependability of the findings.

Additionally, the study may be subject to selection bias. Because the review did not begin with clearly defined inclusion and exclusion criteria, there was a risk that subjective judgments or prior assumptions influenced which studies were selected. Although the reviewers aimed to assess each paper fairly and consistently, the absence of standardized selection guidelines remains a methodological shortcoming. These limitations suggest the need for future reviews to incorporate more up-to-date research, employ robust quality assessment tools, and establish clear inclusion criteria from the outset to ensure greater reliability and objectivity.

To address the challenges highlighted in this study, several recommendations are proposed. First, promoting emotional intelligence should be a priority. Implementing programs that strengthen emotional competencies among both students and educators—such as the initiative proposed by Kauts (2016)—can equip them with essential tools for effective stress management and the development of healthy coping mechanisms. Such programs would foster resilience and emotional awareness, which are crucial for maintaining mental well-being in academic settings.

Secondly, providing continuous training and professional development for educators is essential. Regularly sponsored workshops and learning opportunities can help enhance instructional strategies and improve communication skills. By adopting proven, student-centered teaching approaches, educators can create more supportive classroom environments that not only reduce their own stress levels but also promote a more positive and engaging learning experience for students.

Furthermore, strengthening institutional support services is vital to addressing academic and environmental stressors. Universities and schools should work to establish a more robust culture of mental health awareness and support. This includes providing accessible counseling services, psychoeducational programs, and other well-being initiatives. Collaborating with mental health professionals and integrating AI-supported tools can also expand the reach and effectiveness of these services, ensuring that students have the necessary resources to navigate their academic journey successfully.

Conclusion

Stress remains a significant challenge for higher education students as they navigate the demands of modern academics, affecting both their academic performance and overall well-being. This study has investigated the role of artificial intelligence (AI) tools in reducing educational stress among international students at C3S Business School in Barcelona, Spain. Using quantitative methods, it examined how students engage with AI-powered learning technologies. The findings present a nuanced view: many students benefit from the personalized support these tools provide, improving their ability to manage assignments and access resources more efficiently. This often results in reduced academic pressure and increased productivity.

However, the benefits are not universal. Several participants raised concerns about potential overreliance on technology, ethical issues, and the risk of diminished critical thinking skills. The study also found that AI adoption varies depending on demographic factors, individual learning preferences, and academic disciplines. Ethical considerations, particularly related to data privacy and academic integrity, remain central to the conversation. Ultimately, the research advocates for a thoughtful and responsible integration of AI in education—one that enhances student engagement and learning outcomes while preserving core academic values.

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Conflict of interests

The authors did not face any conflict of interests.

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Authors' contributions

Aida Mehrad, Meriem Bouzedif, Neema George Rweramila and Mohammad Hossein Tahri Zangeneh developed the research theory and completed the research methodology and data analysis. They were involved in drafting the article. Mehrad supervised the research data collection, conducted the study sampling, supervised the whole research and approved the final version of the manuscript. Mehrad, Bouzedif, Rweramila, and Zangeneh completed the entire manuscript, and Mehrad corresponded with the article.

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