

The future of university education





Camilo José Cela University (UCJC) was founded by Felipe Segovia Olmo in the year 2000 and is part of SEK Education Group. UCJC's mission is to serve society by educating professionals of the future and preparing them to face new challenges under a flexible and transversal approach and with the student at the core of all its activity. UCJC pursues innovation and constant evolution to meet the needs of business and society and the highest levels of rigour and excellence. Its strategic axes are entrepreneurship and innovation, technology and digitization, social commitment and well-being.



The Global Education Forum (GEF) is a platform for open innovation developed by the SEK Education Group to foster change and transformation in higher education. It all started with a global discussion held in 2021. As a result of that conversation, the GEF Manifesto was published. This document outlines twelve key points summarizing the main challenges faced by higher education.

ThinkYoung

ThinkYoung is a think tank and research centre focused on young people. It conducts studies, surveys, focus groups and data analysis on Gen Y, Gen Z and Gen Alpha. It was founded in Brussels in 2009 and has expanded to Geneva, Nairobi and Hong Kong, studying youth behaviours and opinions. Based on its studies, ThinkYoung creates campaigns, writes policy proposals, advises decision makers and implements education programmes in Europe, Africa and Asia.

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Executive Summary

Background and Purpose of the Report

The Fourth Industrial Revolution, alongside new educational methods, is transforming higher education by providing opportunities for economic, social, and personal development. The integration of EdTech and new teaching methodologies has accelerated a shift towards student-centred learning, emphasising autonomy, independence, and active participation.

This report explores current university students' and graduates' views on the future of university education, intending to inform strategies for integrating technology and enhancing learning experiences and outcomes. With 3,385 responses from young people (18 to 29) across 13 European countries, this report is one of the most extensive surveys to date examining young people's views on the future of higher education¹, both in Europe and globally.

1. For stylistic reasons the terms "Higher Education" and "University" are sometimes used interchangeably in this report.

Key Findings

- ▶ Respondents identified encouraging students to think freely and critically as the top priority for the future of higher education, with 70% advocating for universities to intensify their focus on developing critical thinking skills.
- ▶ As a second priority, respondents selected bolstering the role of educators as learning guides rather than knowledge transmitters.
- ▶ Hybrid education is strongly preferred. While about half favour a mix of online and face-to-face instruction, merely 15% prefer purely online education.
- ▶ Perceptions of preparedness after graduation are influenced by whether students pursued STEM studies. Graduates with STEM studies expressed higher satisfaction, with 51% agreeing that their university courses prepared them well, compared to 40% from non-STEM backgrounds.
- ▶ 75% believe that students' mental health and happiness should be crucial priorities for universities and other higher education institutions. This is followed by a further 55% who believe universities should also prioritise the physical health of their students.
- ▶ 63% believe that integrating Augmented Reality (AR) and Virtual Reality (VR) would provide a heightened level of engagement in the learning process.
- ▶ 66% of respondents advocate for providing students with comprehensive control over subject selection.
- ▶ 58% have used and valued the experience of Artificial Intelligence (AI) powered chatbots for learning purposes or are keen to try them. The top benefits of AI are seen as detecting gaps in knowledge and assisting with workload and time management.
- ▶ On social-emotional learning, the proportion of respondents perceiving it as necessary far outweighs those who do not perceive it as such.
- ▶ While some national differences exist for levels of agreement on specific priorities for the future of university education, young students and graduates hold uniform views and preferences for the most part.

▶ **"63% believe that integrating Augmented Reality (AR) and Virtual Reality (VR) would provide a heightened level of engagement".**

Preview of Recommendations

Based on the critical insights uncovered and their overall consistency across the countries included, this report recommends the following:

- ▶ Expanding the role of critical thinking in university curricula across disciplines to combat disinformation and challenge ideas.
- ▶ Promoting student-centred learning models to improve learning outcomes for all through tailored online and offline learning and personalised digital tool use.
- ▶ Boosting the overall well-being of university students with a focus on both their mental health (emotional, psychological, and social well-being) and physical health.
- ▶ Ensuring EdTech strategies and AI tools deliver the best outcomes for everyone through real-time, data-driven student analyses, equitable access to digital tools, and a mix of technology-enhanced and human-centred pedagogy.
- ▶ Conducting rigorous contextual research on AI systems to assess their impact on different types of students, ensuring ethical and safe implementation by involving stakeholders.
- ▶ Increasing policy commitments to accelerate open and inclusive higher education systems through programmes including the European Education Area and the European Universities Initiative.

Section 1 Introduction

Setting the Stage for Transforming Higher Education

As psychologist Herbert Gerjuoy poignantly mentioned, the illiterate in the current century will not be those who cannot read but those who have not learned how to learn². This insight increasingly resonates with our current social reality, shaped by three interrelated factors: recent developments in our understanding of the human brain, advances in digital technology, which are the cornerstone of the Fourth Industrial Revolution, and the growing interdependence of countries.

2. Toffler, A. (1970). *Future shock*. New York: Random House.

THE LEGACY OF RENOWNED educational psychologists like Jean Piaget, who expounded on cognitive developmental stages,³ and Lev Vygotsky, who introduced the concept of the 'Zone of Proximal Development',⁴ laid the foundation for our understanding of constructivism—a theory suggesting learners actively construct knowledge through interactions with their environment. David Ausubel further enriched this perspective by emphasising the role of prior knowledge in meaningful learning.⁵ According to the constructivist perspective, as outlined by Kalpana⁶ and Bada and Olusegun⁷—learning is not merely about absorbing facts but integrating new information based on what one already knows.

Neuroscience provides a compelling foundation for constructivist educational theories. As described by Gülpınar,⁸ Taylor and Lamoreaux⁹—ground-breaking research is unveiling the intricate network of neural connections underpinning our learning processes. This work suggests that our brains are naturally predisposed to form patterns and relationships, echoing the principles of constructing knowledge through environmental interactions championed by Piaget, Vygotsky, and Ausubel.

With the Fourth Industrial Revolution introducing transformative technologies, the world has also witnessed a resurgence in human-centric approaches to learning. Brain-based studies, championed by figures like O'Connor¹⁰ and Binulal et al.,¹¹ showcase the potential to craft educational experiences that harness our brain's natural proclivities—a perspective further endorsed by Caine.¹²

Against this background, and as the Fourth Industrial Revolution continues to unfold, Gerjuoy's words on learning capabilities deeply resonate with our current

social reality. The higher education landscape, like our societies, is changing, bringing new challenges and opportunities for positive transformation. This profound technological shift, characterised by intelligent automation, artificial intelligence, blockchain technology, educational data mining, global digital collaboration and sophisticated robotics, generates countless opportunities for development in the educational sector.¹³

Moreover, globalisation and nation interdependency shape contemporary social reality, requiring teaching methods emphasising cultural sensitivity, multilingualism, global issues, and lifelong learning to prepare students for a more interconnected world.

As we stand on the verge of this revolution, we find that the physical, digital, and biological boundaries have begun to blur in our daily lives. These profound changes present unprecedented opportunities for progress but pose significant challenges, especially in education.

► **“To navigate these changes, we must understand the essential role of educational technology.”**

Navigating these changes requires understanding the essential role of educational technology (EdTech). EdTech integrates computer hardware, software, and educational psychology, drawing on a wealth of theoretical knowledge from diverse disciplines.¹⁴ It spans learning theory, computer-based training, online learning, and mobile learning. This nexus of education and technology shapes a new landscape, offering transformative opportunities for both students and educators.¹⁵

3. Piaget, J. (1968). Le point de vue de Piaget. *International Journal of Psychology*, 3(4), 281-299.

4. Vygotsky, L.S., & Cole, M. (1978). *Mind in society: Development of higher psychological processes*. Harvard University Press.

5. Ausubel, D.P., & Fitzgerald, D. (1961). The role of discriminability in meaningful learning and retention. *Journal of Educational Psychology*, 52(5), 266.

6. T. Kalpana. (2014). *A Constructivist Perspective on Teaching and Learning: A Conceptual Framework*.

7. Bada & Steve Olusegun. (2014). *Constructivism Learning Theory: A Paradigm for Teaching and Learning*.

8. Gülpınar, M. A. . (2005). *The Principles of Brain-Based Learning and Constructivist Models in Education*.

9. Taylor, K., & Lamoreaux, A. (2008). Teaching with the brain in mind. *New Directions for Adult and Continuing Education*, 119(fall), 49-59.

10. O'Connor, W.T. (2012). What can the brain science of learning teach us about cybernetics? In 2012 IEEE 11th International Conference on Cybernetic Intelligent Systems (CIS). IEEE. <https://doi.org/10.1109/cis.2013.6782157>

11. Binulal, K.R. Binulal, K.R. & A. Aravind. (n.d.). Brain based learning – feel the difference in meaningful learning.

12. Caine, G., & Caine, R.N. (2006). Meaningful learning and the executive functions of the brain. *New Directions for Adult and Continuing Education*, 2006(110), 53-61. <https://doi.org/10.1002/ace.219>

13. Schwab, K. (2016). *Shaping the Fourth Industrial Revolution* | by Klaus Schwab. Retrieved 30 June 2023, from

<https://www.project-syndicate.org/commentary/fourth-industrial-revolution-human-development-by-klaus-schwab-2016-01>

14. Weller, M. (2018). Twenty years of EdTech. *Educause Review Online*, 53(4), 34-48.

15. Ibid.



Learning Theories and the Evolution of EdTech

This transformation finds its roots in history—from Seymour Papert’s early advocacy of computers for learning in the 1980s to today’s AI-powered educational platforms. Coupled with Lev Vygotsky’s concept of the ‘Zone of Proximal Development’,¹⁶ the advent of EdTech and AI offers potential scaffolding for learning, tailored to each student’s unique needs.¹⁷ Moreover, the evolution of EdTech has been significantly influenced by global collaboration and interaction, with educational institutions worldwide sharing best practices, resources, and research findings, accelerating the development and adoption of these technologies. In this shifting landscape, the role of educators is crucial as they adapt and adopt these novel tools and approaches, promoting a more dynamic and interactive learning experiences.¹⁸

► **“The Fourth Industrial Revolution is not just about technological changes—it is about reshaping education for the betterment of learning worldwide.”**

Future Challenges and the Rise of Student-Centred Learning

In the wake of these global, technological, and field-specific psychology transformations, a shift towards student-centred learning is gaining traction. This model echoes Carl Rogers’ humanistic approach, emphasising autonomy, independence, and active participation in education.¹⁹ The focus is on personalised, self-paced learning driven by students’ interests—a stark contrast to traditional teacher-led models. In fostering lifelong learning and self-construction of knowledge, a more inclusive and responsible learning environment is cultivated. Moreover, globalisation demands multilingualism and cultural inclusion, requiring diversified educational methods to accommodate diverse student populations and create an inclusive environment.

16. Vygotsky, Cole (op. cit. n. 3)

17. Lameris, P., & Arnab, S. (2021). Power to the teachers: an exploratory review on artificial intelligence in education. *Information*, 13(1), 14.

18. Ibid.

19. Rogers, C.R., Lyon, H.C., & Tausch, R. (2013). On becoming an effective teacher: Person-centered teaching, psychology, philosophy, and dialogues with Carl R. Rogers and Harold Lyon. Routledge.

20. Kubiátko, M., & Vaculová, I. (2011). Project-based learning: characteristic and the experiences with application in the science subjects. Retrieved from <https://www.semanticscholar.org/paper/Project-based-learning%3A-characteristic-and-the-with-Kubiátko-Vaculová/C3%A19ea094d66438a7d5f034354db95827d9dd8b17d2>

21. Ibid.

22. Li, K.C., & Wong, B.T.-M. (2020). Features and trends of personalised learning: a review of journal publications from 2001 to 2018. *Interactive Learning Environments*, 29(2), 182-195. <https://doi.org/10.1080/10494820.2020.1811735>

Innovations in education for the 21st Century.

Project-Based Learning

Project-based learning involves students working on projects to develop thinking and problem-solving skills, with teachers acting primarily as facilitators.²⁰ It can foster higher-order thinking skills and engage students in real-world issues and problem-solving.²¹

Personalised Learning

Personalised learning has become an essential paradigm in educational technology.²² This concept, which shares characteristics with Howard Gardner’s theory of multiple intelligences, posits that one-size-fits-all teaching approaches must be updated in the face of diverse learning styles and technological advances.

Blended Learning

Blended learning is another instructional approach that leverages technology to enhance the educational experience, combining traditional face-to-face instruction with various electronic methods and offline and online activities. Based on the ‘flipped classroom’ model, blended learning optimises educational outcomes and engages students. This method combines the benefits of classroom teaching and ICT-supported education, fostering collaborative, constructive, and computer-assisted instruction.²³

Social-Emotional Learning

Social-emotional learning (SEL) is a multidisciplinary field that integrates social, emotional, and civic education into instruction. SEL skills include encoding, interpreting and reasoning about social and emotional information, contributing to behaviour regulation and social interaction competencies. SEL programmes boost academic achievement and are a practical component of comprehensive bullying prevention strategies. SEL is gaining traction as a vital component of comprehensive education, nurturing cognitive, emotional, and social skills.²⁴

23. Lalima, & Dangwal, K.L. (2017). Blended Learning: An Innovative Approach. *Universal Journal of Educational Research*, 5(1), 129-136. <https://doi.org/10.13189/ujer.2017.050116>

24. Jones, S.M., & Doolittle, E.J. (2017). Social and emotional learning: Introducing the issue. *The Future of Children*, 3-11.

The Future of Higher Education: Adaptability and Technological Advancement

Advancements in educational psychology, coupled with the implementation of newer technological tools, highlight the importance of innovative learning approaches, requiring educational institutions to adapt and evolve. This involves adopting innovative strategies like personalised and blended learning and incorporating project-based and social-emotional learning methods. Additionally, creating adaptable curricula and utilising technology is crucial for maintaining the efficacy of higher education. Collaborative efforts among stakeholders and data-driven decision-making are vital for achieving a transformative educational system and addressing future complexities. In the context of globalisation, such collaboration in education ensures harmonised, comprehensive approaches across countries through interconnected institutions. As a result, professional development, technology, and infrastructure ensure that higher education remains relevant, effective, and sustainable.

► “Collaborative efforts among stakeholders and data-driven decision-making are vital for achieving a transformative educational system and addressing future complexities.”

To implement these innovative strategies, higher education institutions must have a robust leadership backbone that embraces change and encourages recurrent professional development for their educators. Schools must promote inter-institutional collaboration, innovation, communication, self-evaluation, and continuous knowledge development to foster modernisation and growth.

Moreover, the rise of artificial intelligence (AI) in education poses a significant challenge to universities, disrupting the traditional assessment of written assignments. The increase in ChatGPT use has bypassed this system, causing concerns about academic integrity.



Universities have reacted by returning to in-classroom examinations or investing in AI detection technologies like GPTZero and Turnitin. However, these instruments generate false positives and can elude detectors, as even small changes to the text can fool them.²⁵

Several experts have warned that these tools fail to address the root cause of the problem and that resisting the rise of AI brings with it a significant risk of universities becoming obsolete if they ignore it. Instead, they claim higher education should focus on inquiry-based objectives (IBOs), design problems and projects, and craft performance-based assessments—aiming to equip students with the knowledge and skills needed to meet changing labour markets and prepare them for the future.²⁶

25. Gururao, K. (2023, 18 July). The invisible cost of resisting AI in higher education. Retrieved 20 July 2023, from <https://blogs.lse.ac.uk/highereducation/2023/07/18/the-invisible-cost-of-resisting-ai-in-higher-education/>

26. Ibid.

Research Objectives and Key Questions

The primary goal of this report is to investigate the views, perceptions, and preferences of current European university students and graduates aged 18 to 29 on the future of higher education. Focusing on their needs, this project aims to answer the following key research questions:

- What priorities do young university students and graduates consider most important for the future of higher education?
- How do these young individuals perceive personalised learning, learning autonomy, and student-centred education at university?
- What are their perspectives on blended learning, digital pedagogy, and the role of disruptive technology?
- What are their views on collaboration among educational institutions?

► “We hope these research findings will have significant implications for a broad range of stakeholders, including educational policymakers, university administrators, educators, and students.”

By illuminating young people’s preferences and perceptions towards future higher education, the results can inform targeted strategies for integrating technology and enhancing student learning experiences. We hope these research findings will bring value to various stakeholders, including educational policymakers, university administrators, educators, and students.

This report unfolds over four sections. The first introduced key concepts, theories, and methodologies on education and learning, pedagogy, and disruptive technology. Section 2 presents the research methodology and data collection process. The following section shares the results, supported by data visualisations. The fourth and final section discusses the findings and implications and, based on the critical insights gained, offers a set of recommendations for policymakers, university leaders, educators, and other stakeholders for the future of higher education.

► “By illuminating young people’s preferences and perceptions towards future education, the results can inform targeted strategies for integrating technology in education and enhancing student learning experiences.”



Section 2 Methodology

This report results from one of the most comprehensive multi-country research projects on university students and graduates concerning the future of higher education, both in Europe and worldwide. The project involved 3,385 respondents across Spain, Italy, the Netherlands, France, Poland, Germany, the United Kingdom, Sweden, Romania, Bulgaria, Czechia, Switzerland and Austria. The survey participants (current or former university students aged between 18 and 29) were at the Bachelor's and Master's level (or equivalent). To our understanding, this constitutes the largest multi-country European survey to date on the future of higher education.

THE 13 COUNTRIES CHOSEN represent a comprehensive geographical distribution across Western, Eastern, Southern, and Northern Europe. The United Kingdom and Switzerland were included, incorporating EU and non-EU countries. The EU countries in the sample account for approximately 82% of the Union's population, whilst all the countries in the sample jointly account for about 62.5% of the European population.

82%

Of the EU's population is approximately accounted for in the sample

62.5%

Of the European population is approximately accounted for in the sample

► **“The survey participants (current or former university students aged between 18 and 29) were at the Bachelor's and Master's level (or equivalent)”.**

Phase 1 Desk Research

An extensive literature review was undertaken, focusing on the emergent trends currently shaping the higher educational landscape, especially in the context of innovative research in educational psychology, globalisation, the Fourth Industrial Revolution and the profound transformations they bring.

Phase 2 Survey Design & Data Collection

The survey questionnaire, inclusive of questions constructed to be easily understandable by respondents, was designed to assess the beliefs and anticipations of our target demographic about the future trajectory of higher education. It included 15 substantive questions (see Annexe) initially written in English and translated into each national language.

Quota sampling was utilised via proprietary online panels. Quotas were based on age, gender and region. However, given their smaller demographic size, regional quotas were not implemented for Bulgaria, Austria, and Czechia. As we processed the gathered data, it is essential to note that a limited subset of questions included only respondents from France, Poland, Germany, the United Kingdom, Sweden, Spain and Romania (see Annexe).

Phase 3 Data analysis

Descriptive data analysis was our primary analytical approach. Where necessary, inferential statistical methods such as multiple regression were harnessed. To sharpen our insights, “do not know/not sure” responses are removed from calculations, especially in option choice questions. This approach is sometimes required to paint a clear picture of opinion distribution, allowing us to elicit more assertive insights from the respondent pool.

► **“The survey questionnaire, was designed to assess the beliefs and anticipations of our target demographic about the future trajectory of higher education”.**



Section 3

Presentation of Study Results

The transformations higher education has been experiencing in recent years are nothing short of extraordinary. From the increasing prevalence of new teaching methods to the incorporation of new demands and priorities for universities, higher education is undoubtedly under a wave of change. While many actors are at play in this transformation, it is essential to hear the voices of those experiencing its consequences most directly.

IN THIS SECTION, we initiate our discussion by exploring student and recent graduate opinions on the critical dimensions of the future of higher education. We then zoom in on several specific areas, focusing on teaching strategies, emphasising roles in pedagogy, free and critical thinking, and experimentation in instructional methods. Subsequently, we dissect viewpoints on university priorities, highlighting beliefs about their readiness for the future and the significance of maintaining a balance between mental health, academic achievement, and adaptable learning.

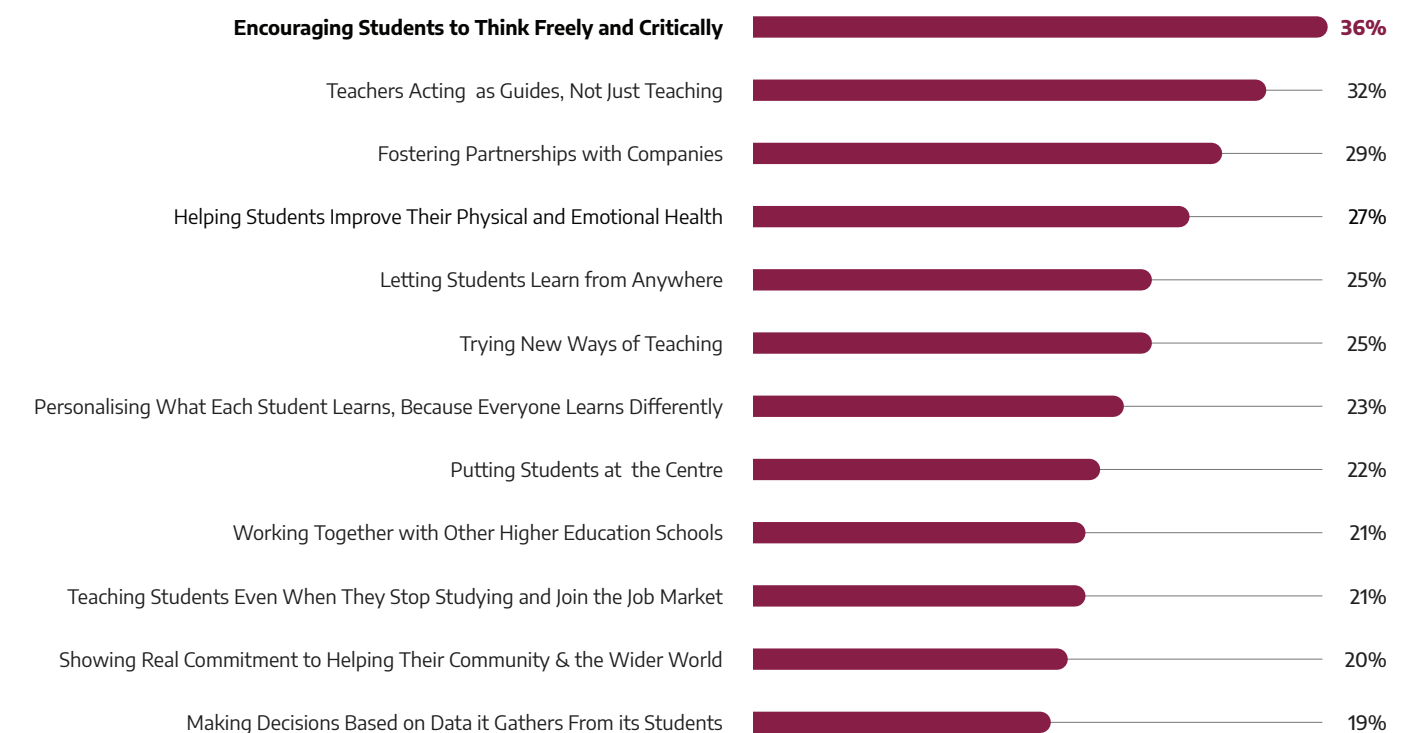
► **“While many actors are at play in this transformation it is essential to hear the voice of those who are experiencing its consequences most directly.”**

Next, we delve into perspectives on technology-enhanced education, concentrating on flexible formats, the potential for traditional campuses, data-driven learning, and artificial intelligence. We conclude by scrutinising attitudes towards the transition from conventional classrooms, underlining the value of lifelong learning, social-emotional development, adaptability, personalisation in education, collaborative and open ecosystems, societal commitment and engagement.

Main Focus Points of Education

In our attempt to understand the trajectory of higher education amidst the dawning of the Fourth Industrial Revolution, students shared insights on what should be the top priorities for universities in the future.

Graph 1. / **Views on Future Priorities of Higher Education.**



As displayed in Graph 1, as the top priority, 36% of respondents emphasised the need to encourage students to think freely and critically. In this context, the importance of educational institutions in fostering such thought processes cannot be overstated, underlining the urgency and need for institutions to maintain their commitment. The ongoing transformation of the role of educators into learning guides rather than knowledge transmitters was another pivotal preference, receiving 32% of respondent backing.

Remarkably, 29% of respondents felt the need to strengthen academic-industry partnerships. This is a testament to the synergy between companies and higher educational institutions, leading to a fluid collaboration in jointly developing planned and taught educational programmes.

► **“As the top priority, 36% of respondents emphasised the need to encourage students to think freely and critically.”**

The importance of both the emotional and physical health of students was highlighted by 27% of respondents. This finding underscores the growing acknowledgement that educational curricula solely focusing on academic pursuits fail to acknowledge the holistic nature of individuals. They neglect the emotional and psychological dimensions, physical well-being, and the significant role of social connections in shaping individual identities.

Presentation of Study Results

A notable 25% of respondents pinpointed the importance of allowing students to learn from anywhere, underscoring the growing traction the concept of a nomadic campus is acquiring. This sentiment mirrors the broader societal shifts highlighted in the academic discourse, which champions the fusion of traditional and digital learning methods.

Additionally, 25% again stressed the importance of trying new ways of teaching. This suggests that many are not just content with traditional methods but are keen on innovation, experimentation, and varied pedagogical approaches that can keep pace with the rapidly evolving reality.

► **The ongoing transformation of the role of educators into learning guides rather than knowledge transmitters was another pivotal preference, receiving 32% of respondent backing.**

► **29% of respondents felt the need to strengthen academic-industry partnerships.**

23% of respondents pointed to the significance of personalised educational experiences. The emergence of EdTech and our growing appreciation of cognitive diversity make clear that a one-size-fits-all approach may no longer be tenable. Furthermore, putting students at the centre was prioritised by 22% of respondents, underscoring a desire for education systems that value their agency, voice, and individuality.

Teaching students even when they stop studying and join the job market was a sentiment expressed by 21% of respondents, tying back to an emphasis on lifelong learning, highlighting students' aspirations for continuous engagement and skill enhancement throughout their professional lives. The need to work together with other universities and higher education schools was emphasised by 21%. This highlights the respondents' understanding of the power of collaboration, networking, and shared resources in fostering a more holistic educational environment. Lastly, 20% stressed the importance of universities showing a genuine commitment to helping their community and the wider world. This underscores the emerging trend of seeking institutions that not only offer academic excellence but also demonstrate social responsibility and a commitment to positive global change.

The diverse range of perspectives expressed indicates that the future of higher education encompasses many critical dimensions from the respondents' point of view. Despite the prevalence of critical thinking, professors serving as learning guides, and academic-industry solid connections being identified as the most prominent aspects, the diverse perspectives highlight the intricate nature of contemporary higher education. Despite many stances, there is a consensus among individuals that education should possess the qualities of adaptability, comprehensiveness, and future orientation.

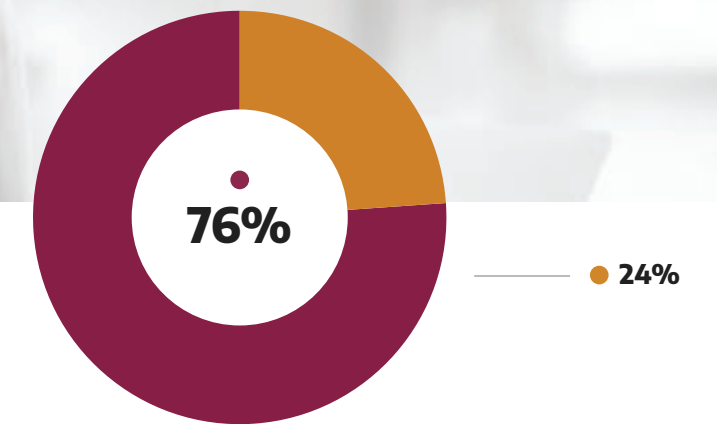


Views on Teaching Approaches

Free and Critical Thinking

As uncovered, cultivating critical thinking should be the top priority for higher education institutions, according to university students and graduates. To develop this further, we asked respondents to provide additional insights into critical thinking. As shown in Graph 2, an overwhelming majority (76%) of respondents believe universities should prioritise teaching students how to think critically and challenge ideas. This is seen as a tool to help distinguish between fake and truthful information. Conversely, 24% feel universities should emphasise academic knowledge and technical skills over critical thinking.

The data mirrors the broader social concerns over the widespread dissemination of false information and reiterates the significance of employing critical thinking skills to navigate the intricate contemporary information environment effectively. The prioritisation of these skills reflects the notion that universities should not alone serve as centres for knowledge production and dissemination but should also prioritise cultivating individuals capable of critically examining information. In an era of rapid dissemination through social media, the capacity to critically assess and question concepts is ever more essential. Thus, fostering an environment that encourages students to challenge commonly accepted information and assumptions appears crucial.



Graph 2. / **Views on the Emphasis of Critical Thinking in Higher Education Institutions.**

- Universities (and other higher academic institutions) should focus on academic knowledge, and technical skills rather than teaching how to think critically.
- Universities (and other higher academic institutions) should teach how to think critically and challenge ideas because it can help students better distinguish between fake and truthful information.



Presentation of Study Results

Graph 3. / **Views on the Emphasis of Critical Thinking in Higher Education Institutions by Country of Residence.**



Significant differences emerge when observing the emphasis on critical thinking as a pivotal aspect of future higher education across different countries, as delineated in Graph 3. While a high percentage of respondents across all countries highlight its significance, Italy and Spain stand out, with 86% in both nations underlining the importance of critical thinking. Bulgaria follows closely, charting at 82%. Conversely, The Netherlands and Germany exhibit a relatively more restrained endorsement, with 65% and 66%, respectively.

While the overarching sentiment leans towards the significance of critical thinking across countries, intricacies emerge. For instance, countries like Italy and Spain might have distinct educational challenges that amplify the call for critical thinking among respondents, given their cultural and geographical proximity. In stark contrast, the notably more

► **“An overwhelming majority (76%) of respondents believe that universities should prioritise teaching students how to think critically and challenge ideas.”**

subdued inclination in The Netherlands and Germany might reflect an already established presence of this kind of training in educational curricula, either at the secondary or higher education level. A closer examination of these countries' educational policies and curricula could offer further insights into this matter. Nonetheless, what remains unequivocal is the burgeoning recognition of critical thinking as a cornerstone for future education across Europe.

New Roles in Teaching and Learning

As shown in Graph 4, most respondents, accounting for 60%, believe that teachers and professors should adopt the role of guides, aiding students in their journey towards independent learning. This viewpoint aligns with the constructivist approach, suggesting that learners build knowledge most effectively when they play an active role in their education. Conversely, 40% of respondents still value the traditional pedagogical approach, wherein teachers and professors impart information and knowledge directly to students. This split reflects the ongoing debate in the education sector about the most effective methods of instruction.

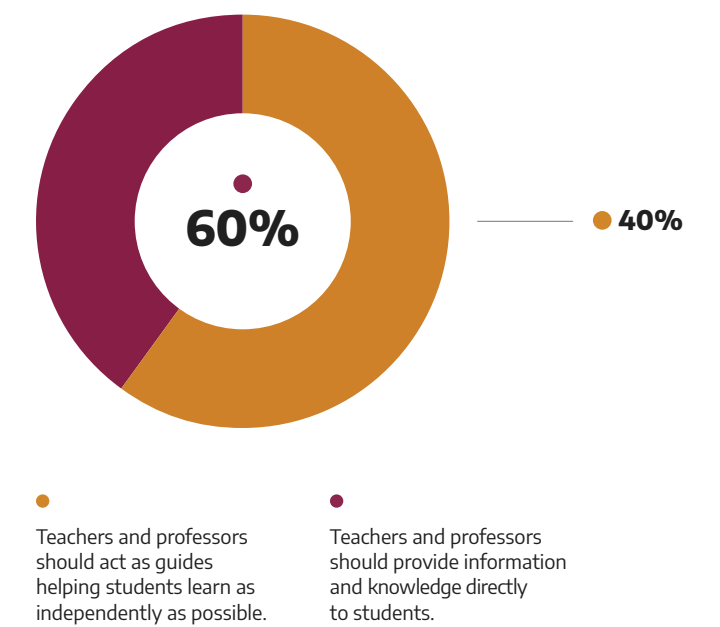
Testing and Experimentation in Teaching Methods

Distinct preferences are present when respondents reflect on their ideal learning modality, possibly influenced by the shift in educational practices during the COVID-19 pandemic. As illustrated in Graph 5, a plurality (46%) leans towards a hybrid system, merging both online and traditional in-person teaching methods. This standpoint likely signifies a shift in perception due to the flexibility and adaptability experienced during the pandemic's enforced remote learning phase. Meanwhile, a considerable segment (39%) continues to champion the merits of traditional face-to-face learning, highlighting its enduring appeal.

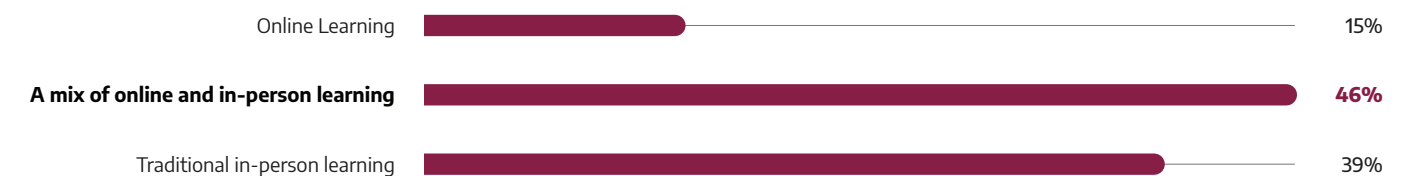
Interestingly, only 15% of respondents express an outright preference for purely online education. This data underscores the resilience and relevance of in-person learning while also spotlighting the growing acceptance of digital platforms as viable complements in the educational landscape, a sentiment likely amplified by the pandemic's influence on learning modalities.



Graph 4. / **Views of Teachers as Guides.**



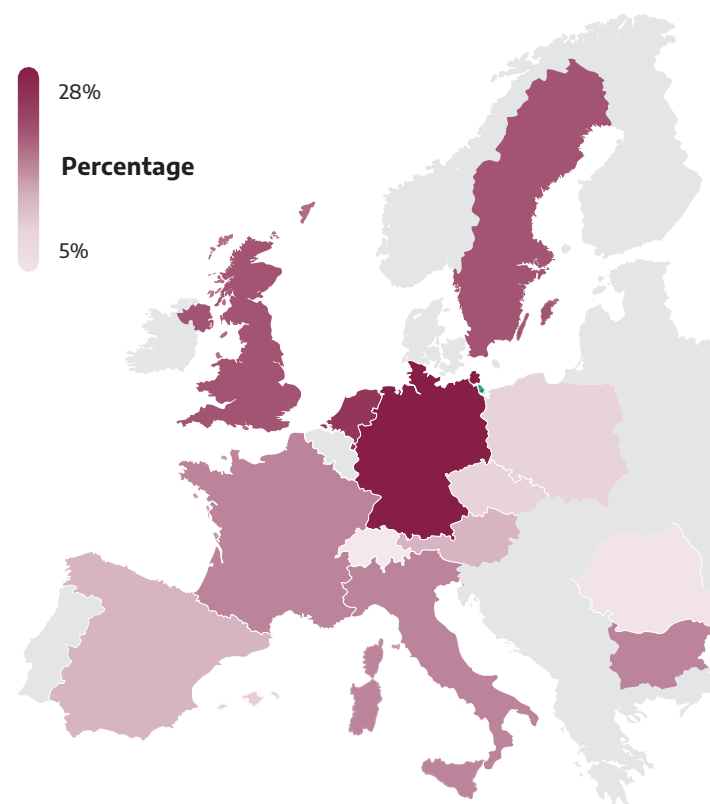
Graph 5. / **Views on Online and Hybrid or In-Person Learning.**



Presentation of Study Results

Upon examining the preferences for online learning across different European countries, as depicted in Graph 6, distinct trends become apparent. Notably, respondents residing in Germany seem strongly inclined towards online learning, with 28% favouring it. This value is relatively elevated, particularly in relation to the broader pattern observed across Europe. Likewise, it is worth noting that over 24% of the participants surveyed in the Netherlands prefer this modality. Somewhat similarly, in the United Kingdom, the number of individuals leaning towards this option amounts to 18%.²⁷

Graph 6. / Preference for Online Learning by Country of Residence.



Different factors might explain these differences, from the level of technological access and infrastructure in these countries to individual experiences during the pandemic, which forced many to adapt to online learning. It is worth considering whether these preferences will influence or reflect future educational strategies, especially in the current post-pandemic world, which could be a topic of further examination for future publications.

27. A statistically significant gender difference persists even when controlled by the type of studies pursued, gender and age of respondents.



Besides conventional online learning platforms, social media has become a focal point of debate in higher education. Graph 7 indicates a tilt towards embracing technology and online outlets in higher education. 60% of respondents believe using social media and online platforms can enhance their learning experience, suggesting they value integrating these digital tools within their educational journey. Conversely, 40% of participants feel that social media should not have a significant role in higher education, highlighting concerns over potential distractions. These findings underscore the importance of finding a balanced approach when incorporating social media into academic settings to cater to students' varied perspectives and needs.

Perspectives on University Priorities

Student Views on Being Prepared for the Future

Both current and former students were surveyed about the effectiveness of their university or other higher education institutions in preparing them for their future pursuits. As shown in Graph 8, a majority hold a favourable opinion. Specifically, over half (53%) of respondents either agree (40%) or strongly agree (13%) with the statement that their institution has been or was effective in this regard. This positive response suggests that, overall, higher education centres are perceived as having played a valuable role in equipping respondents for future challenges and opportunities.

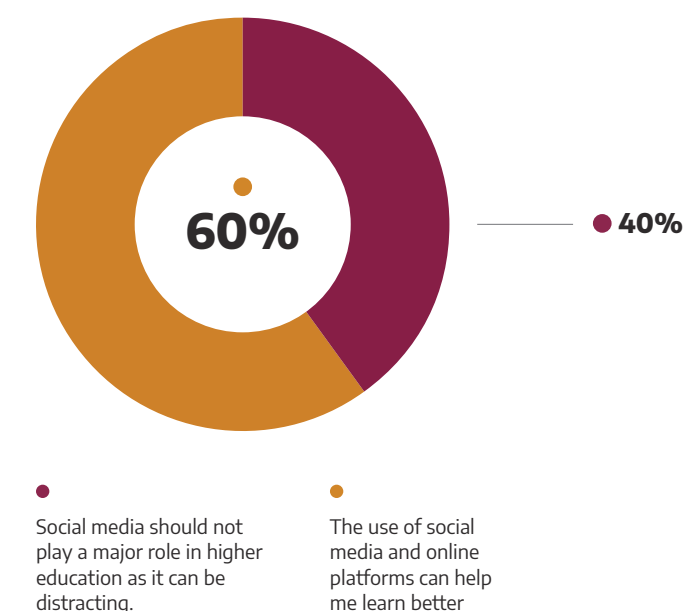
Conversely, 29% expressed some degree of dissatisfaction. This group, which includes 12% who strongly disagree and 18% who disagree, points to areas where institutions might need to bolster their efforts to serve their students' evolving necessities better.

Meanwhile, 18% of respondents remained neutral. This group's ambivalence may stem from varied experiences, depending on factors like course specifics, faculty interactions, or other elements that could have influenced their overall perception.

The insights gained from this data are precious as they reflect the perspectives of both those amid their educational journey and those who can look back on it with hindsight.

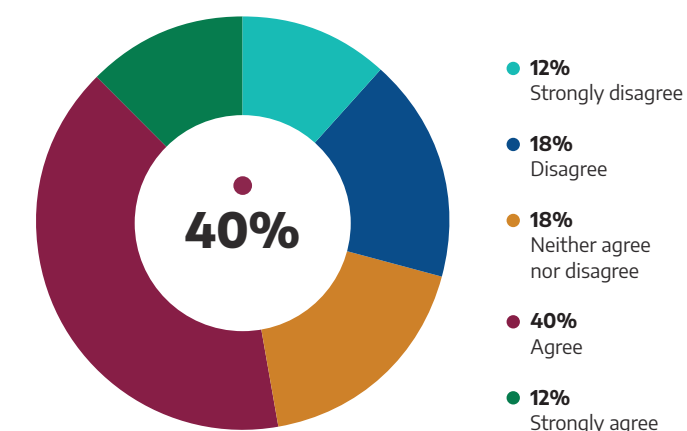
► Only 15% of respondents express an outright preference for online learning.

Graph 7. / Opinions on the Role of Social Media in Higher Education.



Graph 8. / Views on University Preparing Students for the Future.

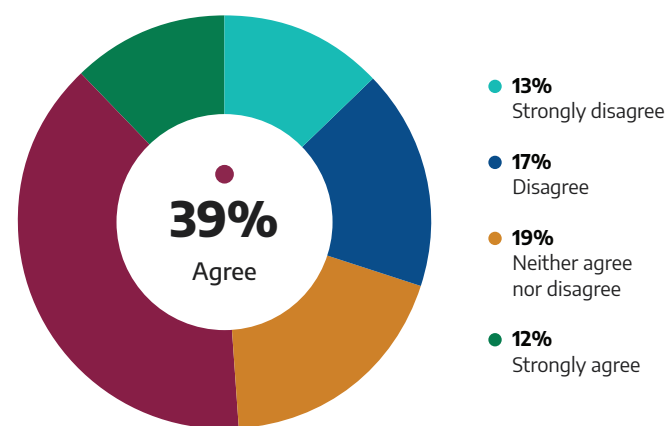
Has your university prepared you well for the future?



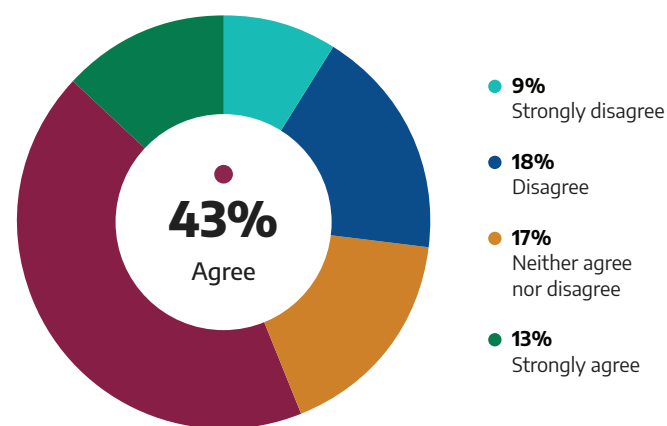
Graph 9. / **Student & Graduate Views on University Preparing Students for the Future.**

Has your university prepared you well for the future?

CURRENT STUDENTS



FORMER STUDENTS



As shown in Graph 9, when comparing views between current and former university students regarding the effectiveness of their studies in preparing them for the future, there are no significant discrepancies between the two groups. This suggests that perceptions of the effectiveness of their university studies remain largely the same once graduates join the labour market. However, it is notable that a considerable proportion

of both segments — 30% of current students and 28% of former students — have expressed discontent. This consistent dissatisfaction across current and former cohorts suggests an ongoing challenge. It emphasises the pressing need for higher education institutions to reconsider and adapt their curricula and teaching methods to evolving economic and social realities.



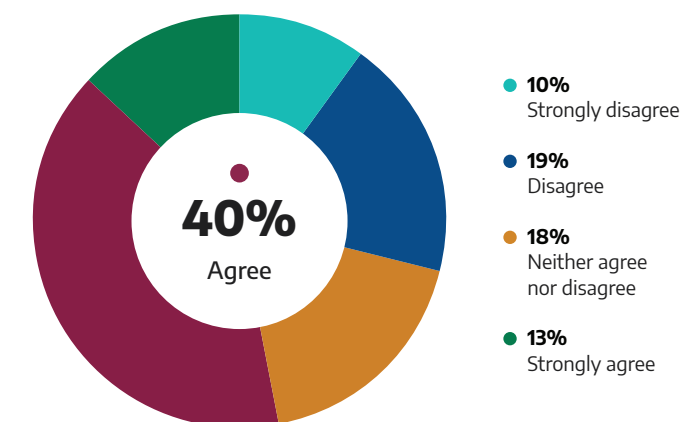
► **“Those with STEM degrees expressed a higher level of satisfaction, with 51% agreeing that their university studies prepared them well, compared to the 40% from non-STEM backgrounds.”**

When analysing the level of satisfaction with former studies, a sizeable difference can be observed between those who have pursued studies in STEM fields and those who have not. As shown in Graph 10, those with STEM degrees expressed higher satisfaction, with 51% agreeing that their university studies prepared them well, compared to 40% from non-STEM backgrounds. This positive outlook in the STEM group is further supported by the markedly lower proportion (6%) of those strongly disagreeing, in contrast to the 10% in the non-STEM group.

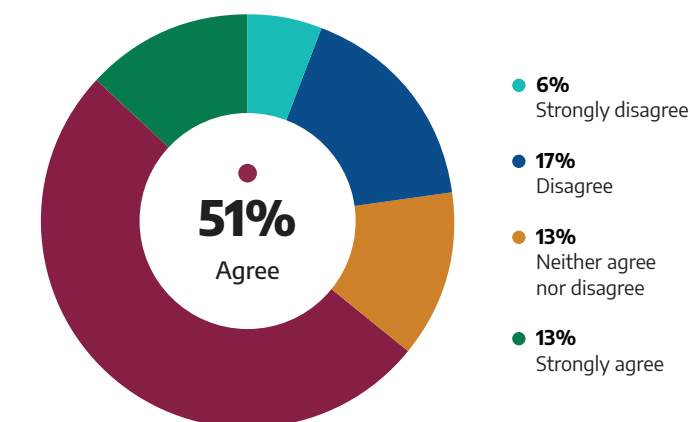
Graph 10. / **STEM & Non-STEM Graduate Views on University Preparing Students for the Future.**

Has your university prepared you well for the future?

NON STEM GRADUATES



STEM GRADUATES



This analysis suggests first that STEM studies affect perceptions of preparedness after graduation.²⁸ In parallel, it indicates that some alumni may conflate the education provided by the university with the specific degree they had chosen to pursue. In other words, while the lack of preparedness for the future may be associated with a particular field, the choice of area itself is independent of the university choice.

Given the significant influence of one’s field of study on future wages, these findings are perhaps unsurprising.²⁹

► **“STEM studies affect perceptions of preparedness after graduation.”**

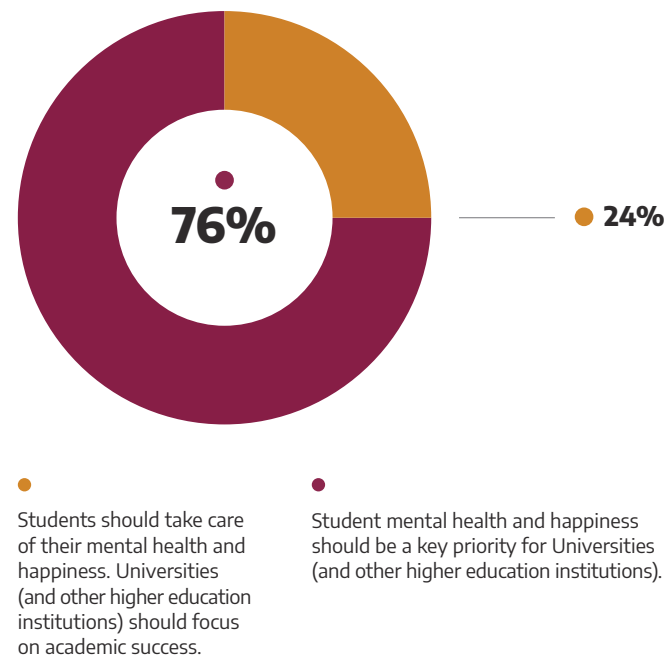
However, the results also underscore the need to offer high-quality STEM education in university programmes that are not directly related to STEM disciplines. This kind of training could play a vital role in the social sciences, arts or humanities to enhance student readiness for a competitive labour market.

28. A statistically significant difference between those who have pursued a STEM education and those who have not persisted, even when controlled by gender, country of residence and age of respondents.
 29. Kim, C., Tamborini, C.R., & Sakamoto, A. (2015). Field of study in college and lifetime earnings in the United States. *Sociology of Education*, 88(4), 320–339.
 Ballarino, G., & Bratti, M. (2009). Field of study and university graduates’ early employment outcomes in Italy during 1995–2004. *Labour*, 23(3), 421–457.

Balancing Health, Academic Success and Flexibility in Learning

As seen in Graph 11, a large majority of respondents (76%) believe that students' mental health and happiness should be a pivotal consideration for universities and other higher education institutions. These opinions underscore the evolving perspective that higher education institutions should address students' needs holistically, beyond just focusing on academic achievements. In contrast, only 24% opine that students should self-manage their mental well-being, implying that universities should focus solely on academic success. The data in this subsection therefore adds to the growing recognition of the importance of mental health in the broader context of educational success and student well-being.

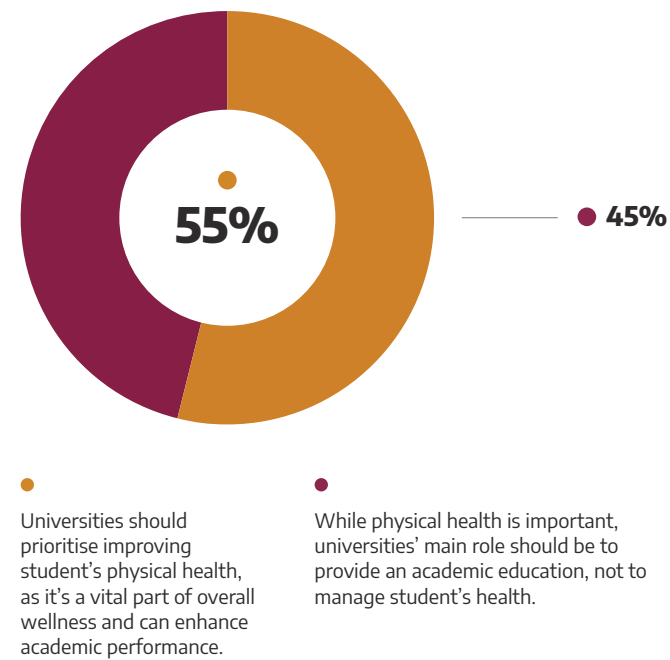
Graph 11. / Views on Universities' Role Toward Student Mental Health.



Views on physical health profoundly differ from those on mental health. Graph 12 suggests a relatively balanced sentiment among respondents concerning the role of universities in promoting this aspect of student well-being. A slight majority (55%) believe universities should emphasise improving students' physical health, seeing it as a vital component of overall wellness that can potentially augment academic performance. On the other hand, 45% of respondents

► “76% believe that students' mental health and happiness should be a pivotal consideration for universities and other higher education institutions.”

Graph 12. / Views on Universities' Role Toward Student Physical Health.



believe universities should prioritise delivering academic education despite recognising the importance of physical well-being. This division in perspectives highlights the evolving expectations of educational institutions' responsibilities in the broader context of student well-being. In fact, the observed disparity in views between mental and physical health may be attributed to the perception of mental health as a significant issue among a substantial portion of young Europeans.³⁰

► “A substantial majority of participants (63%) believe that the integration of AR and VR would provide a heightened level of engagement in the learning process.”

Graph 13. / Views on Augmented and Virtual Reality in Higher Education.



Tech-Enhanced Learning

Nomad Campus and Flexible Formats

The combination of Augmented Reality (AR) and Virtual Reality (VR) increasingly impacts multiple sectors, including education. These tools have proven to significantly enhance teaching and learning by merging the physical and virtual worlds and have the potential to transform the learning process, making it more active, effective, and meaningful.³¹

We asked respondents about their views on these ground-breaking technologies and their potential for transformative impact. Graph 13 illustrates that a substantial majority of participants (63%) hold the belief that the integration of Augmented Reality (AR) and Virtual Reality (VR) into educational settings would provide a heightened level of engagement in the learning process. These percentages

suggest a favourable view of integrating these technologies into educational environments.

Yet, 37% believe that conventional instructional approaches are superior in efficacy and offer reduced distractions compared to AR and VR. This emphasises hesitancy among many respondents, likely due to worries about the possible distractions or usefulness of new tools in educational situations.

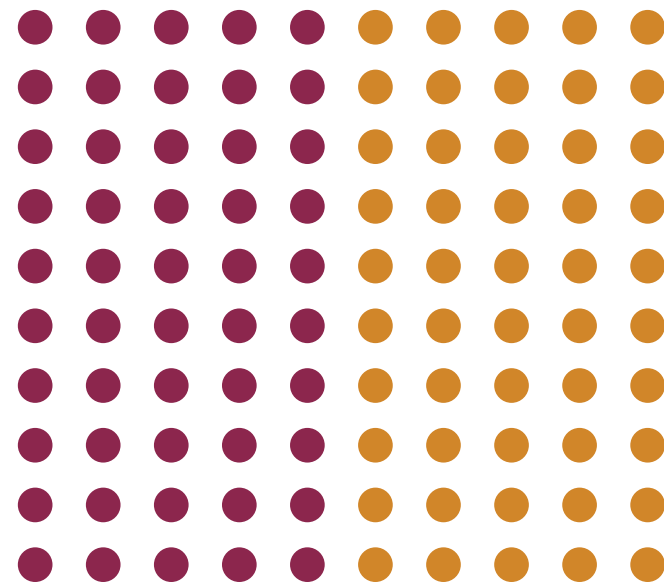
The available evidence, therefore, indicates a notable enthusiasm regarding incorporating Augmented and Virtual Reality technologies inside educational settings. However, it is equally important to acknowledge and resolve the concerns expressed by proponents of conventional instructional approaches.



30. Cannas, S. Dressler, M. Howard, C. Nilges, I., Tosca Díaz, G. (2022). Builders of Progress. FEPS-ThinkYoung.

31. Garzón, J., Pavón, J., & Baldiris, S. (2019). Systematic review and meta-analysis of Virtual Reality in educational settings. *Virtual Reality*, 23(4), 447–459. <https://doi.org/10.1007/s10055-019-00379-9>; Pavlin, H.M., & Suznjevic, M. (2019). The opinions and attitudes of students – future IT teachers – on using VR and AR in teaching. In 2019 42nd International Convention on Information and Communication Technology, Electronics and Microelectronics (MIPRO). IEEE. <https://doi.org/10.23919/mipro.2019.875700>; Zhu, K. (2016). Virtual reality and Virtual Reality for education. In SIGGRAPH ASIA 2016 Symposium on Education: Talks. ACM. <https://doi.org/10.1145/2993363.3006041>

Graph 14. / **Views on the Metaverse.**



50%

I would like to take classes or study in the Metaverse.

50%

I would not want to take classes or study in the Metaverse; I prefer real-life interaction.

The onset of the Fourth Industrial Revolution, marked by innovations like AR, VR, and now the Metaverse, hints at the transformative potential these technologies hold for educational settings. As such, the Metaverse is not merely a source of digital entertainment; it presents a framework where physical and virtual experiences blend, allowing for new dimensions of learning and interaction.

As with any new technology, apprehensions and enthusiasm co-exist. The acceptance of the Metaverse as a genuine educational tool varies across individuals, reflecting diverse attitudes towards learning. The data presented in Graph 14 show a clear divide in perspectives towards using the Metaverse for educational objectives. 50% of participants demonstrate a willingness to engage in educational pursuits or academic endeavours within the Metaverse, signifying a receptive attitude towards this platform for learning.

Conversely, an equivalent proportion of respondents prefer conventional, face-to-face contact, thereby emphasising the lasting significance of in-person educational experiences for a substantial portion of the population. The equal division of 50-50 highlights the importance of offering a range of educational approaches to accommodate the varying preferences of learners considering ongoing technological advancements.

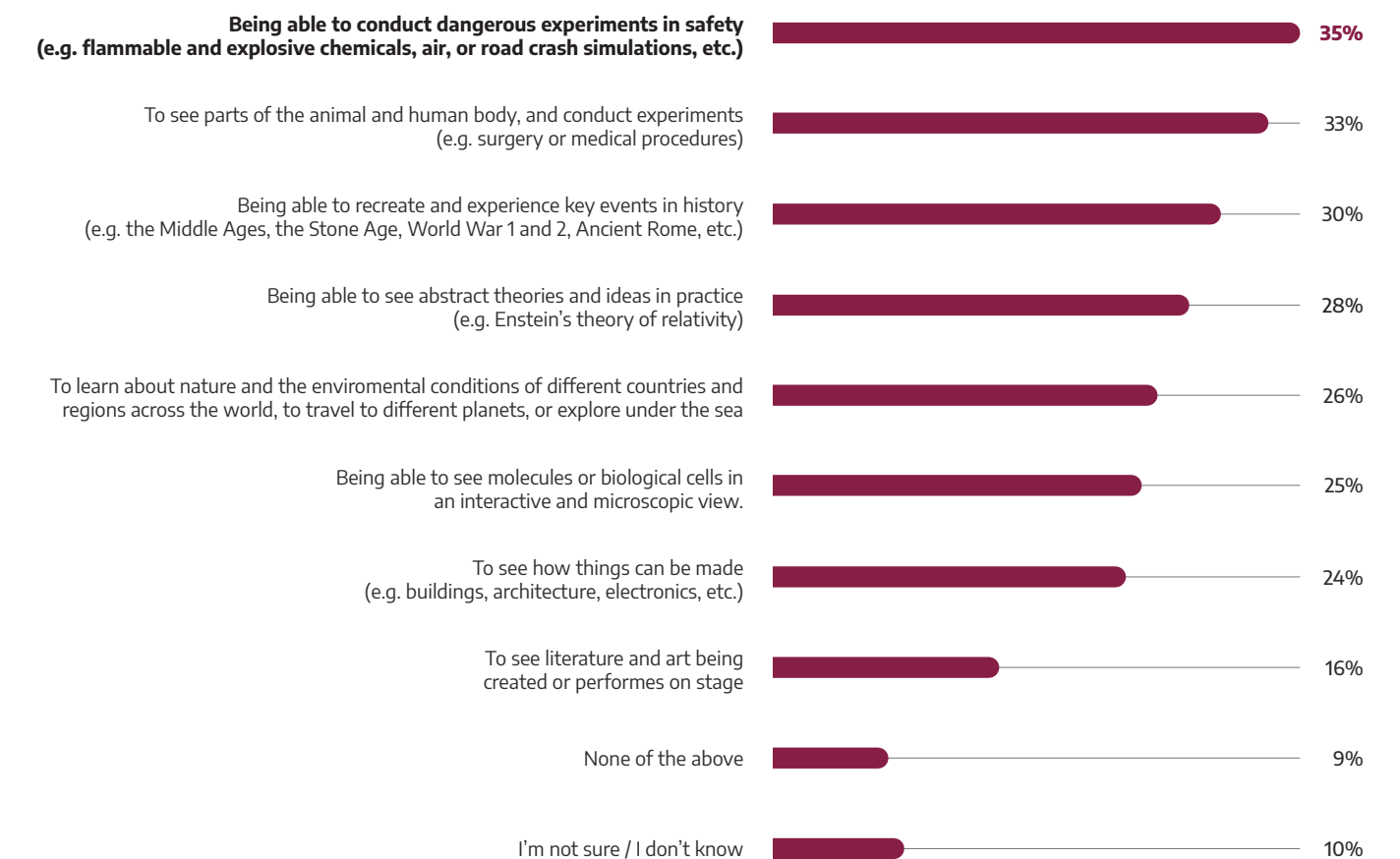


Respondents identified several unique advantages of utilising the Metaverse for educational purposes. As seen in Graph 15, a significant 35% appreciated the ability to safely conduct dangerous experiments, illustrating a keen interest in hands-on learning without the associated risks. Furthermore, 33% found value in observing parts of the animal and human body, emphasising the role the Metaverse could play in medical education.

Historical recreations also intrigued 30% of respondents, suggesting a desire for a more immersive understanding of the past. Interestingly, 28% saw the benefit of visualising abstract theories, highlighting the Metaverse's potential in making complex concepts more tangible.

► **“A significant 35% appreciated the ability to safely conduct dangerous experiments, illustrating a keen interest in hands-on learning without the associated risks.”**

Graph 15. / **Perceived Benefits of the Metaverse in Education.**



Traditional forms of art and literature performed on a virtual stage, however, resonated less. Only 16% of participants recognised it as a benefit. Also, a notable 10% of participants were uncertain about the advantages, indicating that the concept and utility of the Metaverse might still be unfamiliar to some.

Presentation of Study Results

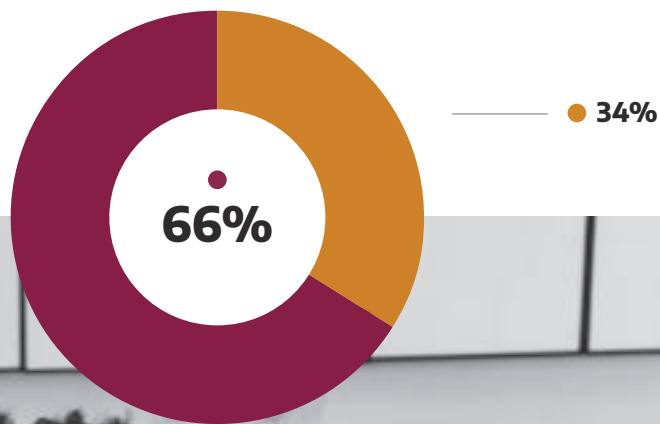
The data in Graph 16 reveals an apparent inclination amongst respondents towards autonomy in curriculum choices. A significant 66% of respondents preferred giving students control over selecting the subjects they wish to study. In contrast, 34% believe in the expertise of professors and prefer adhering to a fixed set of courses designed by them. The figures thus underscore a broader trend of learners seeking further agency and flexibility in their learning journeys.

Along similar lines, an apparent inclination towards diversity and choice emerges when examining student preferences regarding the number of courses offered by universities and other higher education institutions. As shown in Graph 17, 70% of respondents believe these institutions should provide a broad array of courses to better cater to each student's unique interests and requirements. In contrast, 30% believe these establishments should have as many mandatory courses as possible, ensuring all students receive a well-rounded education. These figures thus indicate a prevailing sentiment for personalised learning pathways over a standardised curriculum.



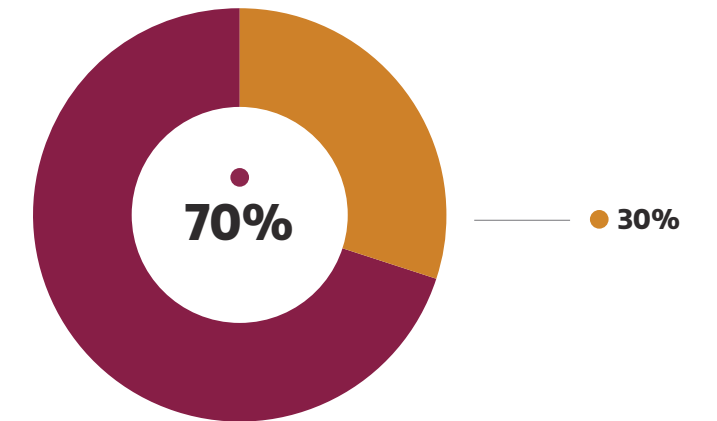
Graph 16. / Views on Curriculum Flexibility.

- I prefer following a fixed set of courses designed by professors, as they know best.
- I prefer having more control and choosing the subjects I want to study.



Graph 17. / Views on Number of Courses Offered.

- Universities (and other higher education institutions) should have as many mandatory courses as possible to make sure all students get a well-rounded education.
- Universities (and other higher education institutions) should offer numerous courses to better match each student's interests and needs.



Data-Informed Learning

Collecting data on students has been argued to be the best way forward. Educators, course designers, and administrators have developed multiple data collection methods ranging from surveys and questionnaires to real-time evaluations to assess student engagement and understanding of course materials.³²

With the integration of technology into the classroom, an unprecedented level of data can now be collected, analysed, and used to evaluate how students are engaging with their learning space. When it comes to data collection by universities and other higher education institutions on how students use digital education tools, opinions lean towards favouring data collection.

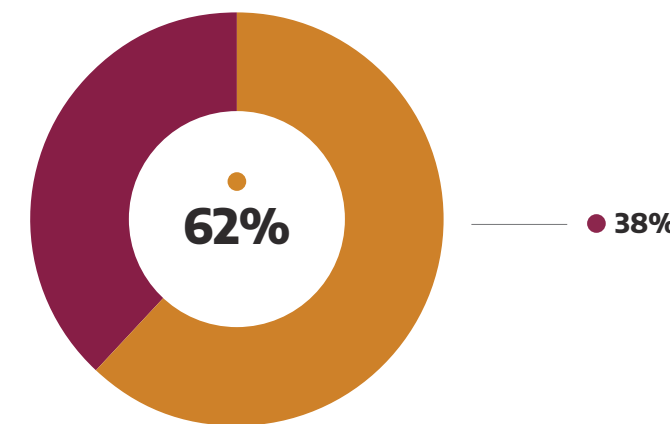
Specifically, as shown in Graph 18, most respondents (62%) believe that universities and other higher

► “Opinions lean towards favouring data collection.”

education institutions should actively collect data on students' use of digital educational tools. The rationale behind this sentiment is the potential to harness such data to enhance and tailor learning experiences. On the other hand, 38% of respondents express concerns over potential privacy issues, suggesting that these institutions should refrain from collecting such data to preserve students' private information. The results thus underscore the tension between the pursuit of enhanced educational outcomes through data analytics and the imperative of protecting individual privacy.

Graph 18. / Views on Data Collection by Higher Education Institutions.

- Universities (and other higher education institutions) should collect data from students on how they use digital educational tools because it can help improve their learning.
- Universities (and other higher education institutions) shouldn't collect data from students on how they use digital educational tools as this would negatively affect the students' privacy.



32. Koller, D. (2023). Collecting data on our students is the only way forward. THE - Times Higher Education, Inside Higher Education.

Exploring the Role of AI in Higher Education

When considering the incorporation of AI-powered chatbots in the learning process, respondents demonstrated a largely positive inclination towards their usage, as shown in Graph 19. Over half (58%) have either used and valued the experience of chatbots or are keen to try them—notably, 36% have already used these bots for learning and expressed enthusiasm about continuing their use.

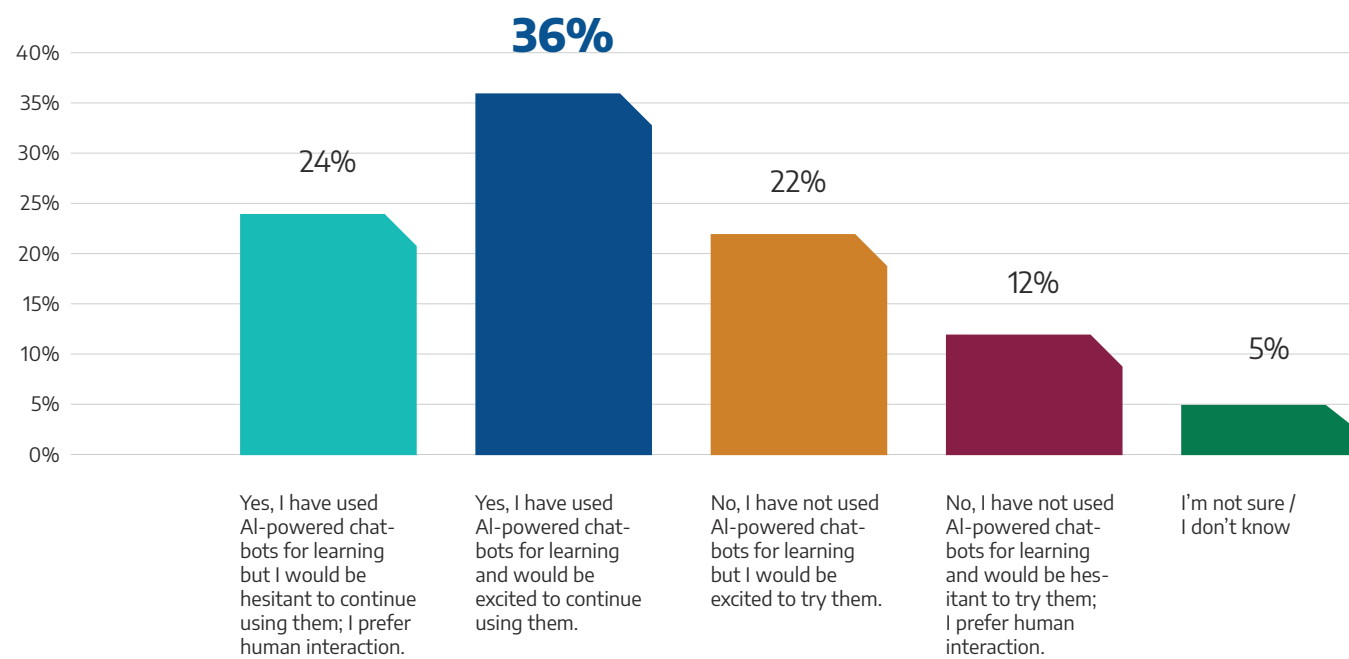
On the other hand, 24% have tried them and display reservations about further use, indicating a preference for human interaction. This suggests that while a majority see the potential in AI for learning, a significant portion is still unsatisfied with their experience using artificial intelligence bots for learning purposes.

► **“Over half (58%) have either used and liked the experience of chatbots or are keen to try them.”**

Additionally, 22% have not experienced AI chat tools and are eager to try them. In comparison, 12% would be hesitant due to their preference for human engagement. A minor 5% of respondents are uncertain or lack sufficient knowledge about the topic.

In sum, there is substantial positivity surrounding the adoption of chatbots in education. This paints a picture of a primarily positive stance on artificial intelligence in university instruction, yet with a palpable desire among some for human-based interactions.

Graph 19. / Views on the Use of Chatbots for Learning.



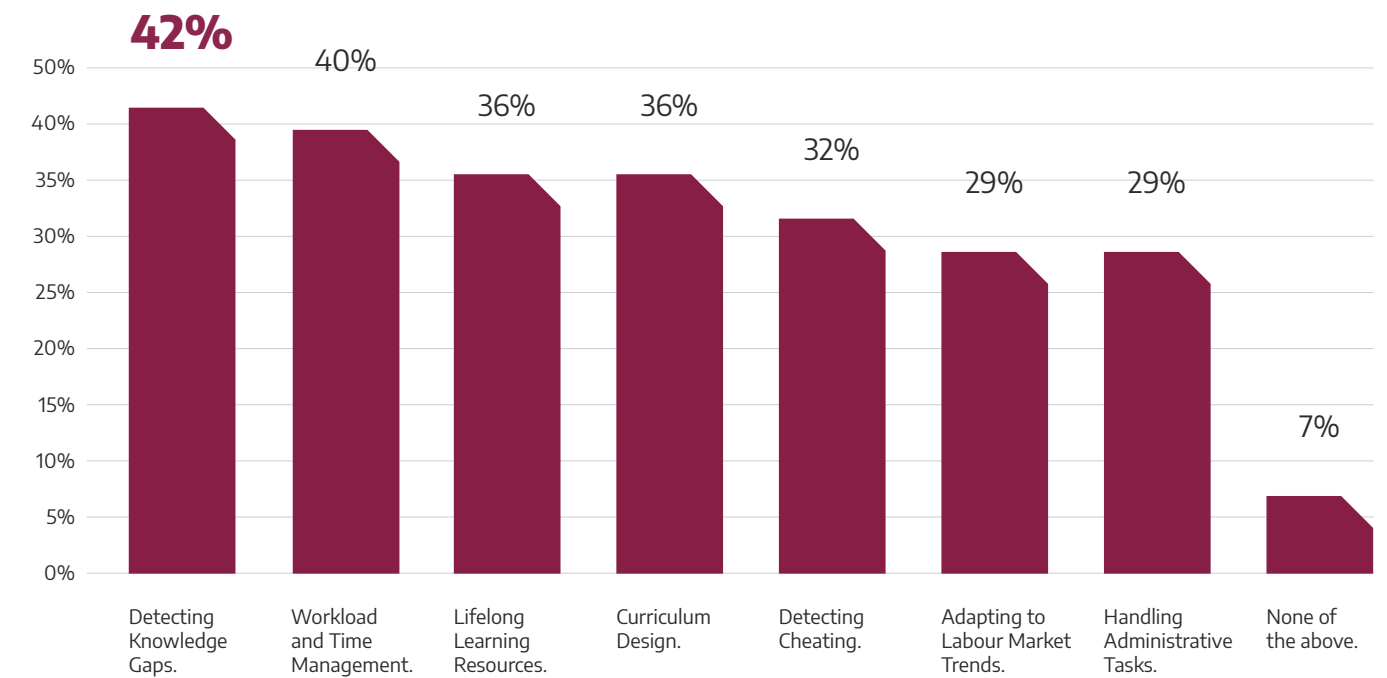
Graph 20. / Use of Chatbots for Learning by Students.



Additionally, the data in Graph 20 provides an insightful perspective on the evolving landscape of education in the Fourth Industrial Revolution era. A notable 66% of students have ventured into using chatbots for learning. This suggests an openness to new technological approaches and their potential contributions. However, it is essential to consider the remaining 34% who have not adopted chatbots for educational purposes. This underpins the need to facilitate access to these technologies and equip students with the tools to use them effectively, safely and ethically while highlighting a need for a balanced educational system that caters to varied learning preferences and styles.

Respondents seem to recognise several substantial benefits that AI brings to higher education. The leading perceived contribution, as shown in Graph 21 and as indicated by 42% of respondents, is the ability of artificial intelligence to detect knowledge gaps. This suggests an appreciation for AI's capacity to personalise learning and provide targeted support where learners need it most. The workload and time management benefit closely follows this at 40%, highlighting artificial intelligence's efficiency in optimising tasks and freeing up time for more substantive academic endeavours.

Graph 21. / Views on the Benefits of AI for Higher Education.



Curriculum design and lifelong learning resources both garnered a noteworthy 36% support. The former emphasises the potential for AI to aid in crafting curricula that are more attuned to learners' needs and modern trends. At the same time, the latter underscores the continuous learning opportunities artificial intelligence can provide beyond traditional education timelines. The focus on detecting cheating (32%) and adapting to labour market trends (29%) demonstrate a balance between maintaining academic integrity and ensuring that education remains relevant in a constantly evolving job market. The same percentage (29%) also believe in AI's prowess in handling administrative tasks, which could streamline various bureaucratic processes in educational institutions.

► **“The leading perceived benefit of AI, as indicated by 42% of respondents, is the ability to detect knowledge gaps.”**

However, it is essential to note that a minority of respondents (7%) did not identify with any of the presented benefits. Whether this stems from a lack of familiarity with AI or reservations about its integration into higher education remains a topic for further exploration beyond the scope of this report.

Beyond the Traditional Classroom

Lifelong Learning and Social-Emotional Development

As shown in Graph 22, many respondents believe social-emotional learning (SEL) is crucial in a university setting, with 48% of respondents believing SEL is crucial in a university setting, with 34% considering it very important and 14% extremely important. Conversely, 18% of participants think SEL is only slightly relevant, and 10% believe it is not important at all, aggregating to around 28% who place lower importance on SEL in university education.

► “On social-emotional learning, the proportion of respondents perceiving it as important far outweighs those who do not perceive it as such.”

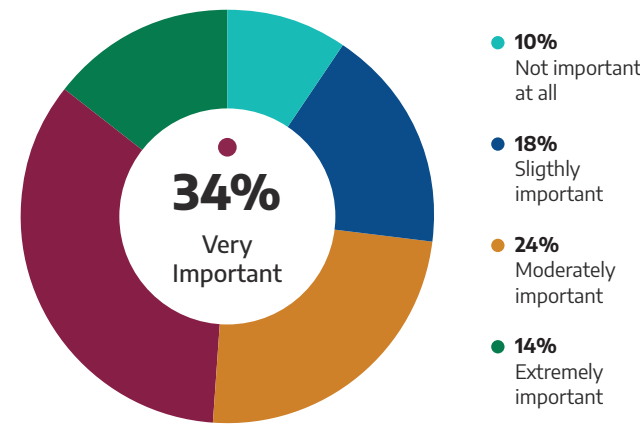
Additionally, a sizable percentage (24%) see SEL as moderately important, suggesting they view its role in universities as neither paramount nor negligible, indicating more neutral sentiment. Nevertheless, while there is a diverse distribution of opinions on social-emotional learning, the proportion of respondents perceiving it as key far outweighs those who do not perceive it as such.

► “Women seem to value the integration of emotional intelligence and interpersonal skills in the educational system more than men do.”

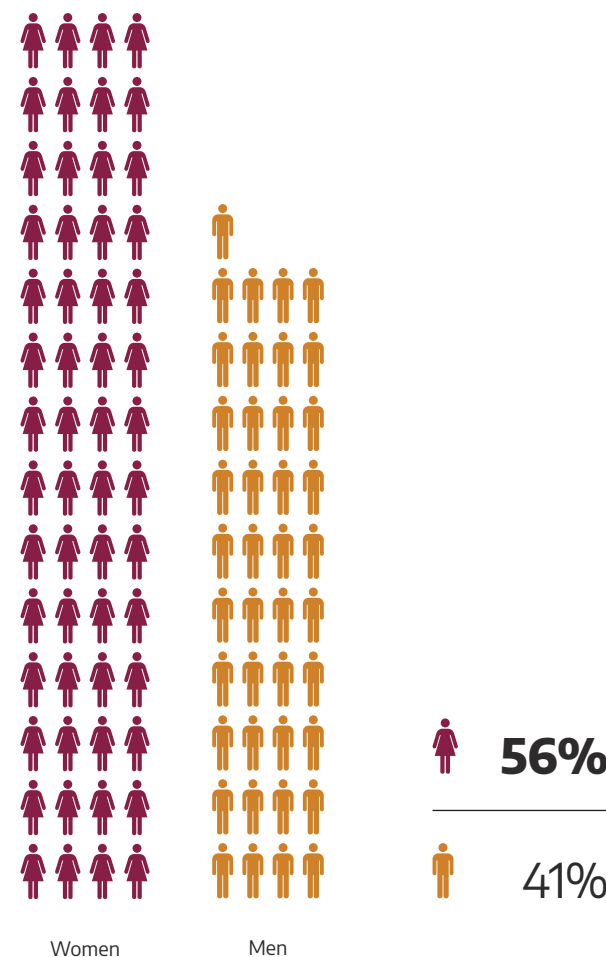
Graph 23 highlights gender differences in perceptions of social and emotional learning's importance. Specifically, 56% of women respondents view it as key in higher education, labelling it as very or extremely important. Conversely, a smaller proportion, 41%, of men share the same view. This suggests that women may value the integration of emotional intelligence and interpersonal skills in the educational system more than men do.³³

33. A statistically significant gender difference persists even when controlled by the type of studies pursued, country of residence and age of respondents.

Graph 22. / Perceptions on the Importance of Social-Emotional Learning in Universities.



Graph 23. / Percentage of Respondents Seeing Social and Emotional Learning as Key by Gender.



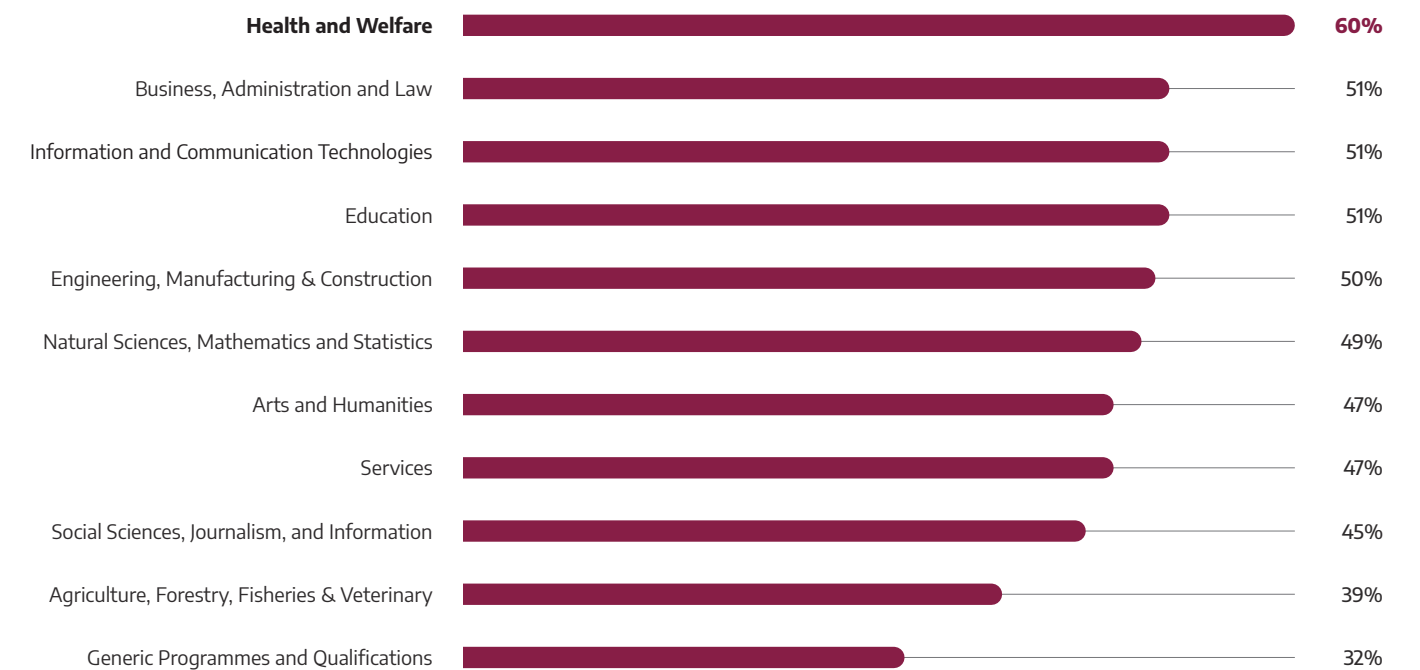
When analysing respondents' views on the relevance of social and emotional learning across various fields of study, it is evident that there are differences in perception. As seen in Graph 24, the field of health and welfare stood out notably, with 60% of its respondents emphasising the significance of social and emotional learning, making it the area with the highest percentage among all the fields listed.

Evidently, this association is partly mediated by the fact that the proportion of women pursuing studies in this field far outweighs that of men, resonating with the findings presented in Graph 23. However, this high percentage for the health

and welfare field is also potentially associated with the intrinsic nature of the sector. Professionals in health and welfare often engage directly with individuals, furnishing care, support, and guidance.

Therefore, possessing strong social and emotional skills becomes critical as they enable professionals in health and welfare to empathise and effectively communicate with patients or clients, thereby ensuring more comprehensive care. This association may relate to the emphasis on social and emotional aspects within the health and welfare sector, which may correlate with a higher level of agreeableness among professionals in this field.

Graph 24. / Percentage of Respondents Seeing Social and Emotional Learning as Key by Field of Study.

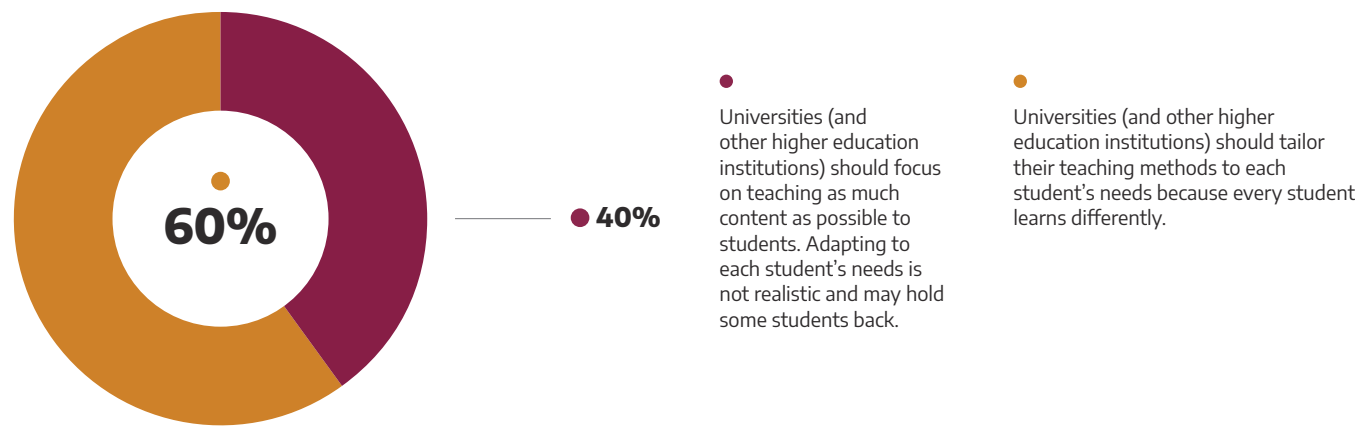


Adaptability and Personalisation in Learning

The respondents' preferences indicate a significant tilt towards personalised education. Specifically, as shown in Graph 25, 60% of those surveyed believe universities and other higher education institutions should adapt their teaching methods to cater to each student's unique learning needs. They posit that recognising and accommodating individual differences is crucial because

every student learns differently. In contrast, 40% feel that institutions should focus on delivering as much content as possible, expressing concerns that tailoring teaching methods might be impractical and could hinder some students' progress. These findings suggest a broader debate on the merits of customised learning versus a more traditional, uniform approach in higher education settings.

Graph 25. / Perceptions on Tailoring Teaching Methods to Each Student's Needs.



Collaborative and Open Ecosystems

A sizable majority of respondents believe that universities and other higher education institutions should closely collaborate with companies in designing and delivering courses that prime students for the workplace. As shown in Graph 26, a substantial 74% hold this view, suggesting a strong preference for integrating academic and practical, work-related learning.

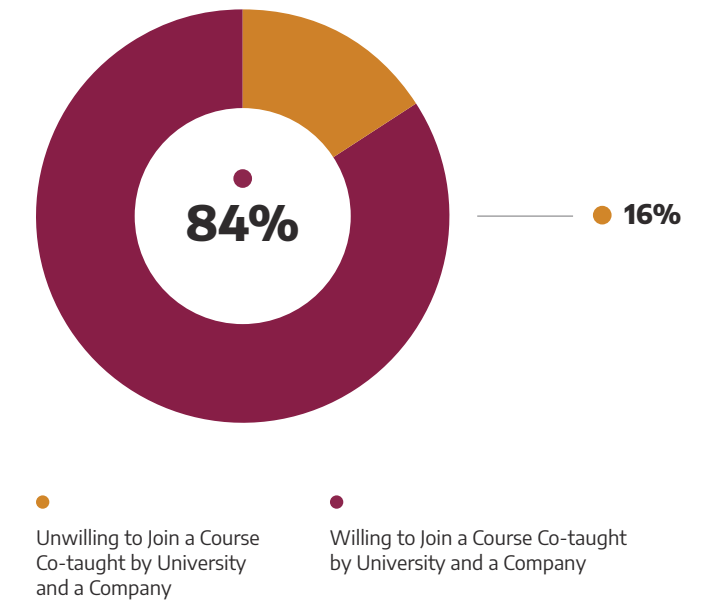
Conversely, only 26% believe that universities should primarily concentrate on teaching scholarly content, proposing that students can acquire work experience separately through internships and placements. Therefore, this data underscores an overarching sentiment toward a more integrated approach between academia and industry in higher education.

Graph 26. / Preferences on University-Company Collaborations in Preparing Students for Work.



As shown in Graph 27, most respondents (84%) would be willing to join a course co-taught by a university and a company, indicating a strong inclination towards collaborative educational models that bridge academic learning and industry insights. In contrast, only 16% of respondents are sceptical about these collaborations and prefer traditional courses that do not involve co-creation between industry and higher education institutions. This highlights a clear trend towards valuing courses integrating real-world expertise and underscores the potential benefits of academia-industry partnerships in higher education.

Graph 27. / Preferences on Joining a Course Co-Taught by a University and a Company

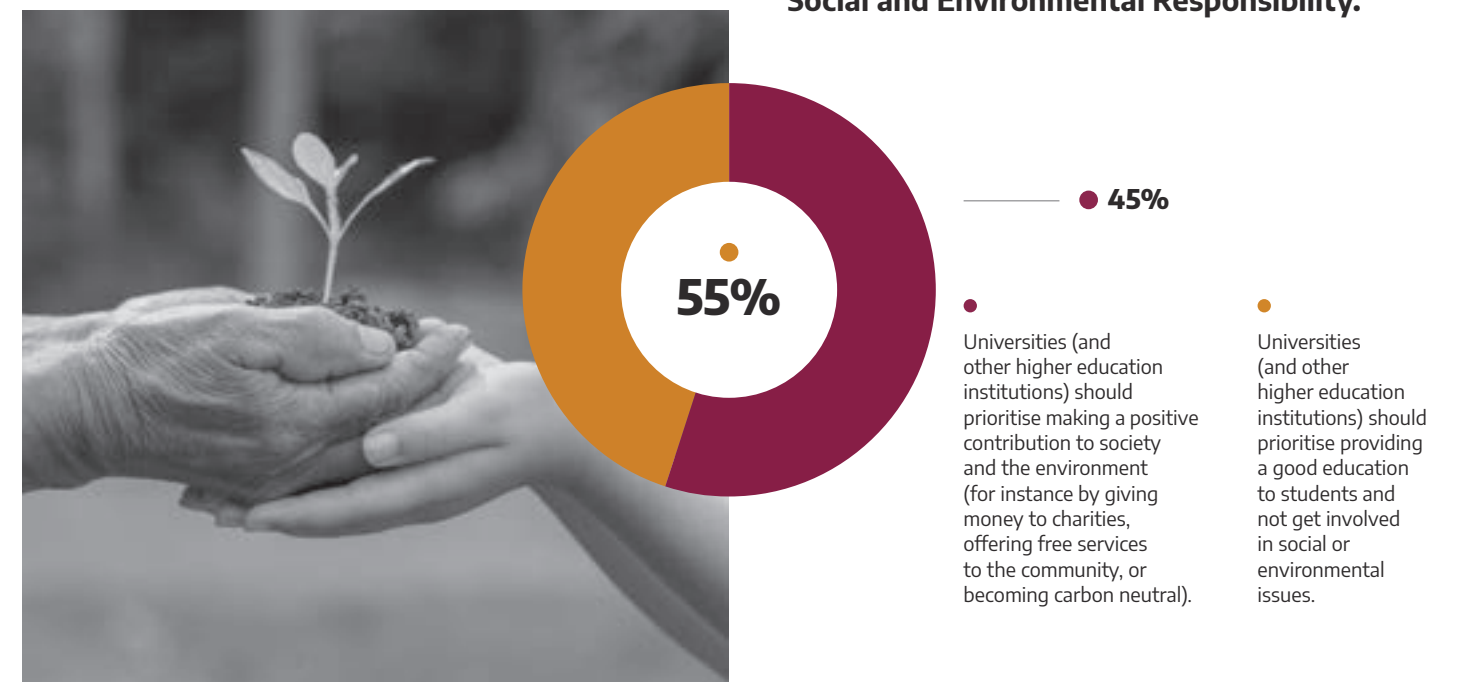


Social Commitment and Engagement

Graph 28 shows a relatively close split in opinion regarding the role of universities and other higher education institutions in addressing broader societal and environmental concerns. A majority (55%) believe these institutions should prioritise positively contributing to society and the environment. Actions might include donating to charities, offering free community services, or adopting sustainable practices to become carbon neutral. On the other hand, 45% of respondents feel that universities should concentrate solely on their primary mandate: providing quality education to students without delving into social or environmental engagements. These figures suggest a nuanced debate about the extent of responsibilities and roles that higher education institutions should adopt beyond their educational remit.

► “A majority (55%) believe these institutions should prioritise positively contributing to society and the environment.”

Graph 28. / Views on Higher Educations' Social and Environmental Responsibility.



Section 4

Discussion & Recommendations

In response to the current and future impact of digital technology and digital transformation on the education sector, this report has showcased the views, perspectives, and future priorities of European university students and graduates on the higher education ecosystem. The report analysed the responses from over 3,350 students and graduates aged between 18 and 29 across 13 European countries, including the UK and Switzerland. In line with innovations to learning and teaching approaches and methodologies fast-tracked by the introduction of EdTech, the Fourth Industrial Revolution, and data-driven tools—the report explores young people’s views on personalised learning, digital pedagogy, disruptive technology, and institutional collaboration.

► “The report analysed the responses from over 3,350 students and graduates aged between 18 and 29 across 13 European countries, including the UK and Switzerland.”



AMONG THE KEY INSIGHTS uncovered, the top focus point for the future of higher education is the need to encourage students to think critically. This was chosen by 36% of respondents. Notably, with nations such as Estonia leading in digital innovation and harnessing the power of AI to augment educational experiences,³⁴ there is a growing push for enhancing the autonomy and empowerment of learners. 29% of respondents want teachers to act more as learning guides and not just knowledge providers, and many desire to see better links with industry. When asked about their preferred way to learn, a hybrid online and offline teaching system is considered to work best. Interestingly, more young students and graduates prefer entirely in-person instruction (39%) compared to online learning (15%). Shifting to the role and impact of digital technologies

► “29% of respondents want teachers to act more as learning guides and not just knowledge providers, and many show a desire to see better links with industry.”

on the future of university education, a substantial majority (63%) believe using AR and VR technology would increase engagement levels with learning content. Similarly, half are interested in studying in the Metaverse.

Given the growing interest in educational AI, which offers benefits such as speech recognition to help students with disabilities or multilingual learners and allows for adaptability and personalisation, 58% have either used and were pleased with chatbots or are keen to try them. Regarding AI, they see the most significant benefits in detecting knowledge gaps (42%) and helping with workload and time management. It is also interesting to note that while educators are aware of the potential risks, ranging from AI failing to be context-sensitive to ethical concerns, including privacy risks—62% want to see universities collecting data on students to improve their learning. The findings of this report, which are broadly consistent



34. Haldane, A. (2023, September 20).

AI could consign educational traumas to history. Financial Times.
<https://www.ft.com/content/2738d880-cd82-4bb4-806f-f3365712bea3>

Discussion & Recommendations

across all examined countries, reiterate the potential for a sea change in how we view and experience university education looking to the future. Some of these changes are already underway, while others are likely to be seen further down the line as disruptive digital technologies become commonplace. This change has been recognised by policymakers, with efforts in place from the European Commission to foster an open and inclusive higher education system in Europe. Initiatives include an emphasis on forming partnerships between European universities, digital innovation, a Digital Education Action Plan, and inclusive education through the European Education Area.

Based on the above, alongside the need to ensure education takes advantage of the opportunities digital technology brings learning while also tackling the associated risks, this report recommends the following:

Expand the role of critical thinking in university curricula across disciplines and courses.

- Maximise critical thinking's key role in challenging ideas and combatting disinformation.

Promote student-centred learning models to enhance all learners' outcomes.

- Tailor online and offline learning methods to student preferences and situations.
- Introduce personalised learning to maximise the benefits of EdTech and digital learning tools.



Enhance policy efforts to expedite the transformation towards a more open and inclusive higher education system nationally and at the EU level.

- Elevate the role and impact of the European Education Area and collaborative education and training systems across Europe.
- Continue to foster innovation in education through programmes like the European Universities Initiative.

► “Some of these changes are already underway, while others are likely to be seen further down the line as disruptive digital technologies become commonplace.”

Boost the overall well-being of university students to improve academic performance, learning outcomes, and educational enjoyment.

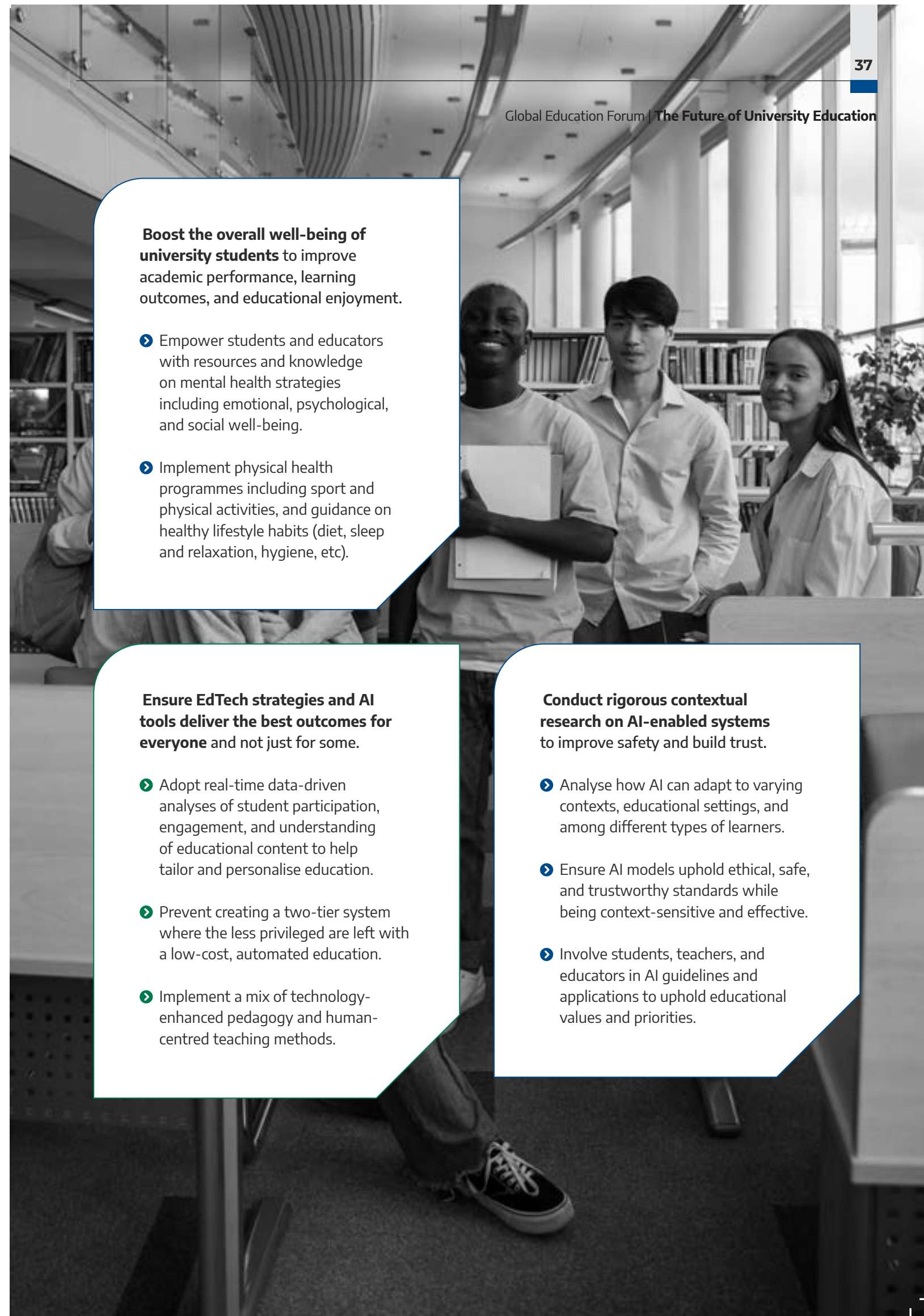
- Empower students and educators with resources and knowledge on mental health strategies including emotional, psychological, and social well-being.
- Implement physical health programmes including sport and physical activities, and guidance on healthy lifestyle habits (diet, sleep and relaxation, hygiene, etc).

Ensure EdTech strategies and AI tools deliver the best outcomes for everyone and not just for some.

- Adopt real-time data-driven analyses of student participation, engagement, and understanding of educational content to help tailor and personalise education.
- Prevent creating a two-tier system where the less privileged are left with a low-cost, automated education.
- Implement a mix of technology-enhanced pedagogy and human-centred teaching methods.

Conduct rigorous contextual research on AI-enabled systems to improve safety and build trust.

- Analyse how AI can adapt to varying contexts, educational settings, and among different types of learners.
- Ensure AI models uphold ethical, safe, and trustworthy standards while being context-sensitive and effective.
- Involve students, teachers, and educators in AI guidelines and applications to uphold educational values and priorities.



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Annex

Future of University Education Survey Questionnaire

Thank you for participating in this survey about the future of higher education. Your answers will help us improve the learning experience for students like you. Higher education institutions include universities and other similar establishments. [Include this for France only: “Classes préparatoires and grandes écoles are both considered higher education”].

AS THE SURVEY IS TARGETED towards the future of higher education, when answering the questions please keep the future of higher education in mind. The questionnaire will take no more than 15 minutes to complete.

Demographics

In this section, we will ask you some questions about you.

A. What is your gender?

- Man.
- Woman.
- Non-binary.
- Prefer not to say.

B. How old are you?

[Respondents to introduce age. Filter out those outside the age range of 18 to 29]

C. What kind of studies are you doing right now?

[Put a list here depending on each country. Keep only undergraduate, classes préparatoires, master's, or equivalent]

D. What field are your studies in?

E. Where do you live right now?

Section 1: Teaching Methods and Tools

Now, we'd like to hear your views on teaching methods and tools in higher education institutions.

1. Thinking critically means having the capacity to challenge ideas and can help distinguish between truthful and false information (such as fake news). With this in mind, where do you believe the focus of universities (and other higher education institutions) should lie?

- Universities (and other higher education institutions) should teach how to think critically and challenge ideas because it can help students better distinguish between fake and truthful information.
- Universities (and other higher education institutions) should focus on academic knowledge, and technical skills, rather than teaching how to think critically.
- I don't know/I'm not sure.

2. Sets of statements will be presented below. From each set of statements please select the one you agree with most:

- “Universities (and other higher education institutions) should prioritise teaching about the environment and how we can take care of it.”
 - “Learning about the environment and how we can take care of it is important, but it shouldn't overshadow the main subjects of study.”
 - “I'm not sure/I don't know.”
-
- “Teachers and professors should act as guides helping students learn as independently as possible.”
 - “Teachers and professors should provide information and knowledge directly to students.”
 - “I'm not sure/I don't know.”
-
- “I prefer having more control and choosing the subjects I want to study.”
 - “I prefer following a fixed set of courses designed by professors, as they know best.”
 - “I'm not sure/I don't know.”

Section 2: Role and Priorities of Universities (and other higher education institutions)

Next, we're interested in your opinion on the role and priorities of universities and other higher education institutions.

3. Do you feel your university (or other higher education institution) is preparing you well for the future?

- Strongly disagree.
- Disagree.
- Neither agree nor disagree.
- Agree.
- Strongly agree.

4. Sets of statements will be presented below. From each set of statements please select the one you agree with most³⁵:

- “Universities (and other higher education institutions) should collect data from students on how they use digital educational tools because it can help improve their learning.”
 - “Universities (and other higher education institutions) shouldn't collect data from students on how they use digital educational tools as this would negatively affect the students' privacy.”
 - “I'm not sure/I don't know.”
-
- “Universities (and other higher education institutions) should offer numerous courses to better match each student's interests and needs.”
 - “Universities (and other higher education institutions) should have as many mandatory courses as possible to make sure all students get a well-rounded education.”
 - “I'm not sure/I don't know.”
-
- “Working together with other students to solve a problem or complete a task helps me understand better and learn from other students.”
 - “I learn better when I work on my own.”
 - “I'm not sure/I don't know.”
-
- “Universities (and other higher education institutions) should make sure all students can reach their full potential, focusing more resources on those who have more trouble learning.”
 - “Making sure all students can reach their full potential is less important than maintaining high academic standards.”
 - “I'm not sure/I don't know.”
-
- “The use of social media and online platforms can help me learn better.”
 - “Social media should not play a major role in higher education as it can be distracting.”
 - “I'm not sure/I don't know.”

- “Students' mental health and happiness should be a key priority for universities (and other higher education institutions).”
 - “Students should take care of their own mental health and happiness. Universities (and other higher education institutions) should focus on academic success.”
 - “I'm not sure/I don't know.”
-
- “Universities (and other higher education institutions) should let students learn from anywhere because it promotes flexibility and can accommodate a range of learning styles and personal circumstances.”
 - “Universities (and other higher education institutions) should prioritise in-person learning because it provides a more structured learning environment and fosters social skills.”
 - “I'm not sure/I don't know.”

35. This question contains data exclusively from respondents in Italy, the Netherlands, France, Poland, Germany, the United Kingdom, Sweden, Spain and Romania.

- ▶ “Universities (and other higher education institutions) should prioritise making a positive contribution to society and the environment (for instance by giving money to charities, offering free services to the community, or becoming carbon neutral).”
 - ▶ “Universities (and other higher education institutions) should prioritise providing a good education to students and not get involved in social or environmental issues.”
 - ▶ “I’m not sure/I don’t know.”
-
- ▶ “Technology should play a significant role in higher education.”
 - ▶ “There should be less focus on technology because it can distract from learning.”
 - ▶ “I’m not sure/I don’t know.”
-
- ▶ “Universities should prioritise improving students’ physical health, as it’s a vital part of overall wellness and can enhance academic performance.”
 - ▶ “While physical health is important, universities’ main role should be to provide an academic education, not to manage students’ health.”
 - ▶ “I’m not sure/I don’t know.”
-
- ▶ “Universities (and other higher education institutions) should work closely with companies to create and teach courses that help students prepare for work.”
 - ▶ “Universities (and other higher education institutions) should focus on teaching academic content. Students can gain work experience through internships and other work placements.”
 - ▶ “I’m not sure/I don’t know.”
-
- ▶ “Universities (and other higher education institutions) should tailor their teaching methods to each student’s needs because every student learns differently.”
 - ▶ “Universities (and other higher education institutions) should focus on teaching as much content as possible to students. Adapting to each student’s needs is not realistic and may hold some students back.”
 - ▶ “I’m not sure/I don’t know.”

- ▶ “Universities (and other higher education institutions) should experiment with new ways of teaching.”
- ▶ “Universities (and other higher education institutions) should stick to tried and true teaching methods and avoid changing too often.”
- ▶ “I’m not sure/I don’t know.”

Section 3: Technology and Digital Learning

Let’s move on to discuss the influence of technology and digital learning in higher education.

5. Which method of teaching do you think works best?

- Traditional in-person learning.
- Online learning.
- A mix of online and in-person learning.

6. Would you join a course co-taught by your university and a leading company?

- Yes, that sounds engaging.
- No, I prefer traditional courses.
- I’m not sure/I don’t know.

7. Micro-credentials are a type of learning where students can quickly get specific skills or knowledge, usually online. Achievements are usually shown in badges or certificates. What do you think?

- Micro-credentials are a useful complement to traditional degrees, providing a more flexible and skill-focused approach to learning.
- Micro-credentials are not taken seriously by employers and universities. Obtaining them is not very useful.
- I’m not sure/I don’t know.

8. Augmented Reality (AR) and Virtual Reality (VR) are technologies that can provide immersive and realistic experiences based on a computer-generated visual environment. What do you think?

- AR and VR should be used in education for a more immersive learning experience.
- Traditional learning methods are more effective and less distracting than AR and VR technologies.
- I’m not sure/I don’t know.

9. The Metaverse is a Virtual Reality environment where users can interact with other users. Which do you agree with most?

- I would like to take classes or study in the Metaverse.
- I would not want to take classes or study in the Metaverse; I prefer real-life interaction.
- I’m not sure/I don’t know.

10. Do you think any of the below uses of the Metaverse in university education would change people’s perceptions of a certain field of study or course? (Choose up to 3).

- Being able to see molecules or biological cells in an interactive and microscopic view.
- Being able to see abstract theories and ideas in practice (e.g., Einstein’s theory of relativity).
- Being able to recreate and experience key events in history (e.g., the Middle Ages, the Stone Age, World War 1 and 2, Ancient Rome, etc.).
- Being able to conduct dangerous experiments in safety (e.g., flammable and explosive chemicals, air or road crash simulations, etc.).
- To see parts of the animal and human body, and conduct experiments (e.g., surgery or medical procedures).
- To learn about nature and the environmental conditions of different countries and regions across the world, to travel to different planets, or explore under the sea.
- To see literature and art being created or performed on stage.
- To see how things can be made (e.g., buildings, architecture, electronics, etc.).
- None of the above would have changed my interest in different types of study or learning.
- Not sure/don’t know.

11. Artificial Intelligence tools, often referred to as AI tools, mimic or simulate human intelligence, such as recognising speech, learning, planning, and problem-solving. Have you ever used AI-powered chatbots, like ChatGPT, to assist with your learning? If not, how would you feel about using such tools in the future?

- Yes, I have used AI-powered chatbots for learning and would be excited to continue using them.
 - Yes, I have used AI-powered chatbots for learning, but I would be hesitant to continue using them; I prefer human interaction.
 - No, I have not used AI-powered chatbots for learning, but I would be excited to try them.
 - No, I have not used AI-powered chatbots for learning and would be hesitant to try them; I prefer human interaction.
 - I’m not sure/I don’t know.
- #### 12. What do you think are, or could be, the biggest benefits of AI in higher education? (Select 3).
- Detecting gaps in student knowledge and designing personalised plans to catch up.
 - To make it easier for educators to design curriculum and content.
 - Improved lifelong learning resources.
 - To assist with workload and time management.
 - To take care of administrative tasks.
 - To detect cheating and/or plagiarism.
 - To help courses adapt to changing labour market trends.
 - None of the above.
 - I’m not sure/I don’t know.

Section 4: Learning Beyond the Traditional Classroom

Finally, we’d like your opinion on aspects of learning beyond the traditional classroom setting.

13. Lifelong learning means learning new things throughout your life, even while working. Which do you agree with more?

- Lifelong learning should be a big part of what universities (and other higher education institutions) do.
- Universities (and other higher education institutions) should focus on teaching young people before they start their careers in full.

Annex

I'm not sure/I don't know.

14 Social-emotional learning is about developing skills like being more aware of one's feelings and having better interactions with other people. How important do you think this should be in the training universities (and other higher education institutions) provide?

- Not at all important.
- Slightly important.
- Moderately important.
- Very important.
- Extremely important.

15 Which of the below focus points for the future of university education do you see as most important? (Please choose 3).

- Working together with other universities and other higher education schools.
- Putting students at the centre.
- Making decisions based on data it gathers from its students.
- Personalising what each student learns because everyone learns differently.
- Teaching students even when they stop studying and join the job market.
- Letting students learn from anywhere.
- Working together with companies.
- Teachers helping students learn, not just teaching.
- Trying new ways of teaching.
- Helping students improve their physical and emotional health.
- Showing a real commitment to helping their community and the wider world.
- Encouraging students to think freely and critically.

Thank you for participating in this survey about the future of higher education.



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