WP3: Participatory Action Research on Needs and Prioritisation Map

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Chapter 5 What do the experts say?

The use of Artificial Intelligence in Higher Education, as we have seen, is growing, and its introduction into tutoring systems undoubtedly presents both opportunities and challenges for all stakeholders involved in the teaching-learning process. Understanding the perspectives of students, faculty, and tutoring experts is critical to designing, developing, and implementing effective, equitable, and user-centered ITS. This chapter presents key findings from the participatory research conducted to explore these perspectives, with the aim of providing valuable insights for creating enriching and personalized learning environments.
Data has been collected through focus groups and questionnaires, involving more than 500 Participants from 64 European universities. The methodology used combined a qualitative approach, using focus groups, which allowed for a deeper understanding of participants' experiences and opinions, with a quantitative analysis based on surveys, which provided statistical data on general trends and preferences. The diversity of the participants, which included 303 students, 109 professors and researchers, and 97 mentoring experts, ensures that the chapter reflects the varied needs, expectations, and concerns related to the design, development, and implementation of ITSs. Crucially, the quantitative data from the questionnaires complement the qualitative findings from the focus groups, enriching the analysis and providing a solid basis for the recommendations and guidelines presented in this handbook.
The remainder of the chapter is organized into different sections that present the specific findings of the focus groups and questionnaires for each participant group (students, researchers and university faculty, and tutoring experts), respectively. Finally, two more sections provide a comparative analysis of the similarities and differences between the groups, and a final section offers the main conclusions of the research and their implications for the future of ITS in higher education.

5.1 Students perspective

This section focuses on students' perspectives in higher education regarding tutoring and Intelligent Tutoring Systems (ITS). Students are the primary beneficiaries of ITS, and their opinions and experiences are critical to designing systems that effectively meet their needs and expectations. The following presents the main research findings regarding students' appreciation of tutoring, their needs and expectations regarding ITS, and their concerns and challenges regarding the implementation of these technologies.

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5.1.1 Assessment of tutoring

Students in higher education recognize the positive impact of tutoring on their academic experience and personal development. Focus group participants reported that tutoring not only provides support with academic tasks but also significantly contributes to increasing their confidence and motivation. Furthermore, students highlight the critical role of tutoring in developing essential skills, such as time management, critical thinking, problem-solving, and communication. The psychological benefits of tutoring are also evident, as students experience a greater sense of academic support and an increase in their overall confidence. However, it is important to note that some students identified a lack of information and awareness about available tutoring services, suggesting a need to improve dissemination and access to these resources. Students also expressed a strong desire for more personalized tutorial support tailored to their individual needs and learning styles.
Two key aspects stand out in this section: on the one hand, higher education students emphasize the valuable role of peer support as an integral component of tutoring. Focus groups revealed that collaborative learning and the sharing of knowledge and experiences with peers are considered beneficial and contribute to a mutually supportive environment.

Building collaborative spaces in classrooms generates benefits for students:

- It is indicated that tutoring contributes to the development of important skills such as communication, which is directly related to interaction and collaborative work.
- Peer learning is highlighted as a valuable and commonly used form of intervention. This suggests that the exchange of knowledge and experiences among peers is beneficial for students.
- It is mentioned that tutoring helps students feel more confident and motivated, which can be influenced by the support and collaboration they receive from their peers.
- Mentoring can generate a greater sense of purpose and connection with the university community, which is also related to interaction and collaborative work among students.

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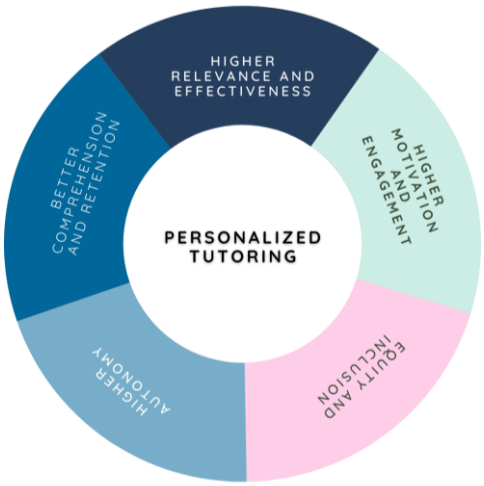
- The different learning spaces and services that universities offer to the educational community are presented.

On the other hand, students also express a strong desire for personalization in tutoring services, recognizing that each student has unique needs, learning styles, and individual rhythms. Participants emphasize the importance of tailoring tutoring support to their specific circumstances to maximize learning effectiveness. This aspect is important for the future ITS tool, as it must focus on improving the effectiveness of the learning process and student support:



- Each student has a unique learning style, pace, strengths, weaknesses, interests, and motivations. Personalization allows ITS to adjust to these individual differences, delivering content, activities, and feedback that are more relevant and effective for each student.
- By presenting content in a way that suits the student's learning style, ITS can facilitate better comprehension and retention of information. This can lead to deeper and more meaningful learning and greater effectiveness in skill acquisition.
- When students feel that learning materials are relevant to their interests and needs, they are more likely to feel motivated and engaged in the learning process. Personalization can make learning more engaging and less frustrating, which can have a positive impact on students' attitudes toward studying.
- Personalization can help students develop greater autonomy in their learning by allowing them to make decisions about their own pace, style, and approach. This can foster important skills such as self-regulation, responsibility, and the ability to learn independently.
- Personalization can be especially important for ensuring equity and inclusion in education by providing additional support to students with disabilities or special needs. A personalized ITS can accommodate the needs of students with disabilities, students from different cultural or linguistic backgrounds, or students with different levels of academic readiness.

For students, tutoring represents invaluable support that transcends mere academic assistance. Beyond resolving doubts and improving performance, tutoring fosters the

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development of essential skills for long-term success, such as time management, critical thinking, problem-solving, and effective communication. It also contributes significantly to their emotional well-being, increasing confidence, motivation, and a sense of belonging to the academic community. Peer tutoring, in particular, stands out as an effective strategy for collaborative learning and the sharing of knowledge and experiences.

5.1.2 Needs and expectations

Students in higher education have expressed a number of clear needs and expectations regarding Intelligent Tutoring Systems (ITS). First, they emphasize the importance of a student-centered tutoring system that is flexible, easy to use, and provides a comprehensive connection between the different types of support they need, including academic, personal, and professional support. Personalization emerges as a key factor, with students desiring tutoring systems that adapt to their individual needs and profiles, recognizing the diversity of learning styles and academic paths.
Clear communication and easy access to tutoring services are identified as key priorities, underscoring the need for intuitive platforms that facilitate interaction and timely access to support. Furthermore, students suggest the creation of a single platform that integrates all relevant tools and resources, providing a centralized course catalog and simplified navigation.
Regarding the role of AI, students envision a model that acts as a personal guide for navigating existing digital resources, offering guidance and support without replacing interaction with instructors. Finally, students express a desire for a tool that helps them justify the relevance of what they are learning, providing content that highlights practical applications and the future importance of the topics.
One of the aspects most highlighted by students is the need for a unified and intuitive platform that centralizes the various functions and tools related to tutoring and learning. Students suggest creating an app that integrates all relevant platforms and resources, providing a course catalog where all information is accessible and navigable in one place. Overall, there is a consensus that an intuitive and easy-to-use platform that reduces bureaucracy and facilitates communication between all users is essential for the successful adoption of ITS and for improving the teaching-learning experience.

On the other hand, there are the expectations generated by these advances in comprehensive student training, identifying a need for adaptive learning and personalized feedback as another priority shared by the different stakeholder groups. Students express a strong desire for tutoring systems that adapt to their individual needs and profiles, offering personalized support, rapid feedback, and relevant resources. Overall, there is a recognition that ITSs must be capable of learning from the user, utilizing data about their trajectory and performance to provide more focused and relevant responses and support, thus maximizing the effectiveness of the teaching-learning process.

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5.1.3 Concerns and challenges

While students recognize the potential of ITS, they have also expressed several significant concerns and challenges regarding their implementation. A recurring theme is a feeling of unpreparedness to adopt new platforms without adequate digital education, highlighting the need for appropriate training and support to ease the transition. The protection of personal data emerges as a key concern, with students emphasizing the importance of reliability in the protection of their information. The digital divide and equity issues are also raised as significant challenges, with students emphasizing the need to ensure that all students, regardless of their access to technology or digital skills, can benefit from ITS. The potential loss of human connection in the tutoring process is another significant concern, as students fear that technology could replace valuable interaction with educators. Finally, potential resistance to change on the part of some educators is recognized as a challenge that must be addressed for successful ITS implementation.

In conclusion, students in higher education view Intelligent Tutoring Systems (ITS) as a tool with the potential to positively transform their learning experience, provided they are designed and implemented with their specific needs and expectations in mind. For students, an ideal ITS would be a unified, easy-to-use platform that provides centralized access to various types of support (academic, personal, and professional), adapts to their individual learning styles, and offers personalized guidance and timely feedback. However, they also express significant concerns about equity in access to technology, the protection of their personal data, and the need to preserve human interaction in the tutoring process. Ultimately, students advocate for a user-centered design approach that prioritizes transparency, flexibility, and the ability of ITSs to justify the relevance of what they are learning.

5.2 Perspective of Professors, Researchers and Tutors

This section focuses on the perspectives of faculty, researchers, and tutors in higher education regarding tutoring and Intelligent Tutoring Systems (ITS). Educators play a pivotal role in the implementation and effective use of ITS, and their views and experiences are crucial to ensuring that these technologies meet the needs of both students and teaching staff. Key research highlights are presented below regarding educators' appreciation of tutoring, their needs and expectations regarding ITS, and their concerns and challenges regarding the implementation of these technologies.

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5.2.1 Assessment of tutoring

Educators in higher education recognize the intrinsic value of mentoring as an essential component of academic life. Mentoring not only provides an avenue for offering personalized guidance to students but also serves as a catalyst for their holistic development, extending beyond the classroom. Educators emphasize that participating in mentoring activities fosters their own professional growth, allowing them to refine their mentoring strategies, improve their communication skills, and engage in critical reflection on their teaching practices.

Furthermore, mentoring facilitates the building of stronger and more meaningful relationships between educators and students, fostering a deeper understanding of the individual challenges the latter face. Finally, educators believe that mentoring plays a crucial role in identifying specific areas where institutions can improve their student support systems, thereby optimizing the overall learning environment.
From the educators' perspective, mentoring not only represents an opportunity to guide and support students in their academic journey, but also a space for professional growth and reflection. Participating in mentoring activities allows educators to refine their pedagogical strategies, improve their communication skills, and develop a deeper understanding of students' individual needs.

Here begins one of the great debates among teachers: What role will tutors/teachers play in the future in intelligent tutoring systems?
In an AI-enriched educational environment, the role of the tutor/teacher undergoes a fundamental transformation. Traditionally viewed as a mere transmitter of knowledge, the teacher becomes an essential guide and mediator in the learning process. Their primary role is no longer limited to imparting information but expands to help students navigate the vast sea of available information, discern between reliable and unreliable sources, and use AI tools effectively and ethically. The teacher facilitates the development of 21st-century skills, such as critical thinking, problem-solving, creativity, and collaboration, which are crucial for success in an increasingly digitalized and automated world.
Tutors/teachers play a crucial role in designing learning experiences that leverage the potential of AI to personalize education and foster collaboration. This involves creating activities that allow students to interact with AI tools in active and meaningful ways, promoting exploration, experimentation, and project-based learning. Tutors/teachers are also responsible for designing pedagogical strategies that integrate AI to support the development of critical thinking and creativity, encouraging students to question, analyze, synthesize, and evaluate information, and generate innovative ideas and original solutions.

Beyond academic development, tutors/teachers remain essential in supporting students' social and emotional development. In an increasingly digitalized educational environment, teachers provide individualized guidance, fostering a sense of community and belonging, and

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creating a safe and inclusive learning environment where students feel valued, respected, and supported. The tutor/teacher acts as a mentor who guides students in their personal growth, helping them develop interpersonal skills, manage stress, and build positive relationships with their peers and the wider community.

On the other hand, tutors/teachers have a fundamental responsibility to ensure that AI is used ethically and responsibly in education. This involves addressing crucial issues such as algorithmic bias, which can perpetuate existing inequalities; the privacy and security of student data, which must be protected at all times; and equity in access to technology, ensuring that all students have equal opportunities to benefit from ITS. Tutors/teachers should promote transparency and accountability in the use of AI, explaining to students how these technologies work and how their data is used, and assuming responsibility for the decisions made by AI systems.

Finally, to play a leading role in future mentoring processes, mentors/teachers require ongoing training and professional development to acquire the skills and knowledge necessary to integrate AI into their teaching practices. This includes training in the use of AI tools, understanding their pedagogical and ethical implications, and developing strategies to design meaningful learning activities that leverage the potential of AI. Educational institutions must provide teachers with collaborative learning opportunities, mentoring, and access to up-to-date resources to support their professional development in the AI era.

5.2.2 Needs and expectations

Tutors/lecturers in higher education have expressed several key needs and expectations regarding Intelligent Tutoring Systems (ITS). First, there is a strong desire for ITS to be more effectively integrated into the existing academic structure. This entails the need for systems that provide clear guidelines for tutoring, tools for efficiently tracking student progress, and seamless opportunities for collaboration among colleagues. Furthermore, tutors/lecturers value tools that are inherently easy to use and accessible through a variety of devices, including mobile apps and virtual environments, facilitating their widespread adoption and use. Educators use various digital tools for teaching and tutoring, including online learning platforms (such as Moodle and Google Classroom), video conferencing tools (such as Zoom and Google Meet), Microsoft Office Suite, and educational gaming platforms (such as Khan Academy and Duolingo).

Beyond purely academic support, there is also significant interest in systems that can contribute to students' overall well-being and support their professional development. To ensure successful implementation of ITS, educators emphasize the importance of ongoing training and support to enable them to use these technologies effectively and stay up-to-date

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with the latest updates and features. This training should address not only the technical use of the tools but also the pedagogical implications and best practices for integrating them into teaching. The pandemic experience has highlighted the need for ongoing and structured training, as many educators had to quickly adapt to digital teaching without preparation.
Tutors have also articulated a number of specific needs and expectations regarding Intelligent Tutoring Systems (ITS). A primary need is for a centralized platform that allows them to manage all their tutoring activities in one place. This ideal platform should include an integrated schedule manager, a shared resource library for easy access to relevant materials, and a dedicated space for taking notes and tracking student progress.

Furthermore, tutors emphasize the importance of effective communication, requesting an easy way to report issues or request assistance when needed, as well as clear and efficient communication channels with faculty and administration.
Finally, educators want the opportunity to actively participate in the design of ITS, ensuring that these systems are relevant to their practical needs, adhere to ethical principles, and truly enhance the educational experience.

5.2.3 Concerns and challenges

Along with recognizing the potential benefits of ITS, educators have also expressed several significant concerns and challenges related to their implementation. One of the main concerns centres on the costs associated with implementing and maintaining these systems.
Educators note that the financial investment required can be significant, posing a particular obstacle for institutions with limited resources. Furthermore, there is widespread concern about potential resistance to change on the part of some teachers, who may be reluctant to adopt new technologies or modify their traditional teaching methods.
On the other hand, algorithmic bias is another major concern, as educators fear that AI systems may inadvertently perpetuate existing biases in training data, potentially leading to unfair or discriminatory outcomes. This concern is significant as it also entails the potential loss of the essential "human element" of tutoring when implementing Intelligent Tutoring Systems (ITS). While they recognize AI's potential to automate tasks and provide personalized support, they emphasize the importance of preserving the human interaction, emotional connection, and social component that they consider fundamental to effective tutoring.
Educators fear that an excessive focus on technology could lead to a dehumanization of the teaching-learning process, diminishing tutors' ability to understand and respond to individual students' needs, build meaningful relationships with them, and foster a sense of community and belonging.
Data privacy is also emerging as a critical issue, with educators emphasizing the need for strong protection of student data and clear transparency regarding how this data will be used within AI-powered platforms.

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Finally, despite the positive assessment of tutoring, tutors also face a number of concerns and challenges in performing their role. One of the main challenges is the lack of structure and initial support, with some tutors feeling ill-prepared and expressing the need for better training and clearer expectations. Furthermore, many tutors find it difficult to balance their tutoring responsibilities with their own studies, especially when managing multiple students or a wide variety of subjects. Tutors also point to the need for greater recognition for their work, as well as more training opportunities and access to resources that facilitate the preparation of tutoring sessions, monitoring student progress, and effective communication with university staff.

In conclusion, educators and tutors recognize the transformative potential of Intelligent Tutoring Systems (ITS) to improve teaching and learning in higher education. Both groups agree on the need for systems that are better integrated into the academic structure, that are easy to use and accessible, and that provide effective tools for student progress tracking and peer collaboration. Ongoing training and technical support are considered essential to ensure that educators and tutors can effectively use ITSs and adapt to new features and updates. However, significant concerns are also expressed about implementation costs, potential resistance to change, algorithmic bias, and the need to protect student data privacy.

Furthermore, educators and tutors emphasize the importance of preserving human interaction and personal connection in the tutoring process, warning of the risks of dehumanizing teaching. Ultimately, both groups advocate for a thoughtful, user-centered approach to ITS design and implementation, balancing the potential of technology with the pedagogical and ethical needs of higher education.

5.3 Comparative Analysis: Points of Convergence and Divergence

This chapter presents a comparative analysis of the findings that emerged from the focus groups conducted across different partner countries. It explores both the shared insights and the distinctive perspectives expressed by participants, highlighting areas of convergence in terms of needs, challenges, and expectations, as well as points of divergence shaped by national contexts, institutional frameworks, and cultural attitudes.

5.3.1. Points of convergence

This section presents a comparative analysis of the findings from the focus groups and questionnaires conducted with students, educators, and tutors/experts, with the aim of identifying points of convergence and consensus among the different participant groups. Despite differences in their roles, experiences, and perspectives, students, educators, and

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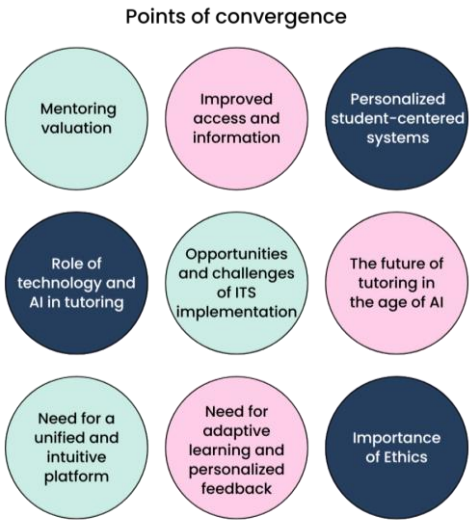
tutors/experts share a number of common opinions and expectations regarding tutoring and Intelligent Tutoring Systems (ITS) in higher education.
Understanding these areas of agreement is critical to designing and implementing ITS that are relevant, effective, and acceptable to all users, and that contribute to improving the overall teaching-learning experience.



- Valuation of mentoring. There is general consensus among the three groups on the value and importance of mentoring in higher education. Students, educators, and tutors/experts all recognize the fundamental role of mentoring in supporting students' academic success and personal development.
- Need to improve access and information. All three groups agree on the need to improve access to and information related to tutoring services. They emphasize the importance of greater dissemination of information, better organization of services, and the creation of centralized platforms that facilitate the search and use of these resources.
- Desire for personalization and student-centered systems. Personalization and a student-centered approach emerge as key priorities for all three groups. There is a shared desire for tutoring systems that adapt to students' individual needs and learning styles, offering personalized support, rapid feedback, and relevant resources.
- The role of technology and AI in tutoring. All three groups recognize the potential of technology and AI to improve tutoring in higher education. However, concerns are also expressed about potential drawbacks, such as the loss of human connection, equity in access to technology, and ethical risks.
- Opportunities and challenges of ITS implementation. All three groups identify a number of opportunities and challenges associated with ITS implementation. Among the opportunities, they highlight the potential of ITS to make tutoring more accessible, flexible, and efficient, as well as to personalize the learning experience and improve communication and collaboration. Among the challenges, they mention the need to ensure digital equity, protect data privacy, and address ethical issues such as algorithmic bias.
- The future of tutoring in the age of AI. There is consensus that AI should not completely replace human interaction in tutoring. All three groups emphasize the importance of designing ITS that complement and support the work of human educators and tutors, facilitating communication and collaboration, but without eliminating personal contact and empathy.

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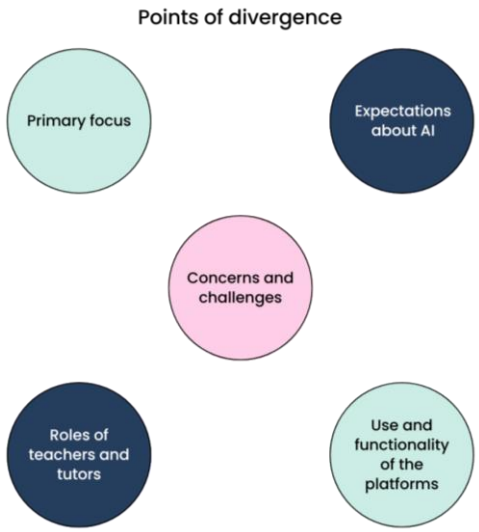
- Need for a unified and intuitive platform. All three groups agree on the need for a unified and intuitive platform that centralizes the various functions and tools related to tutoring and learning. The importance of a user-friendly interface, simplified navigation, and reduced bureaucracy to facilitate the adoption and effective use of ITS is emphasized.
- Need for adaptive learning and personalized feedback. All three groups express a strong desire for tutoring systems that offer adaptive learning and personalized feedback. The potential of AI to analyze student data and provide support and guidance tailored to their individual needs and learning styles is recognized.
- Importance of Ethics. All three groups agree on the importance of addressing ethical considerations related to the use of AI in tutoring, including data privacy, algorithmic bias, fairness, and transparency.

5.3.2. Points of divergence

While there is widespread consensus on the potential of Intelligent Tutoring Systems (ITS) to improve higher education, several key differences have also been identified in the perspectives, priorities, and concerns of different stakeholder groups. Understanding these areas of divergence is critical to designing and implementing ITS that are capable of addressing the specific needs of each group and minimizing potential conflicts or misunderstandings.
The main points of divergence identified in the research are presented below:



- Differences in primary focus. One of the main areas of divergence lies in the primary focus of each group. Students tend to focus on the user experience, prioritizing how ITSs can facilitate their learning and improve their academic performance. Professors and researchers, on the other hand, take a broader perspective, considering the pedagogical, institutional, and ethical implications of ITS implementation. Tutors/experts, on the other hand, show greater concern about the impact of mentoring on their own professional development and the need for adequate support and resources to effectively perform their role.

- Differences in expectations about AI. Differences are also observed in expectations about the role of AI in tutoring. While students tend to view AI primarily as a tool for

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personalizing learning, automating tasks, and accessing relevant information, professors and researchers, in addition to personalization, emphasize its potential to provide timely feedback, identify at-risk students, and improve teaching effectiveness. Tutors/experts, while open to the use of AI, focus primarily on its ability to support, but not replace, human interaction and the flexibility they consider essential in tutoring.

- Differences in concerns and challenges. Concerns and challenges associated with implementing ITSs also vary across different participant groups. Students show greater concern about the potential loss of human connection in the tutoring process, equity in access to technology, and the protection of their personal data. Teachers and researchers, on the other hand, emphasize the costs of implementing ITSs, potential resistance to change on the part of some educators, and the need to address important ethical issues, such as algorithmic bias and data privacy. Tutors/experts, on the other hand, focus primarily on the need for adequate training to effectively use digital tools and the importance of ongoing technical support to resolve any issues that may arise.
- Differences in the roles of teachers and tutors. Differences are observed in how different groups perceive the role of teachers and tutors in relation to ITS. Students tend to view both as facilitators of their learning, but do not delve into the specific roles they should play in the context of these technologies. Teachers and researchers, on the other hand, emphasize the fundamental role of teachers in the AI era, which includes guiding the use of technology, designing meaningful learning activities, and supporting the development of students' skills. Tutors/experts, on the other hand, see themselves as active collaborators in the learning process, but emphasize the importance of educational institutions providing them with the necessary tools and support to effectively perform their role.
- Differences in the use and functionality of the platforms. In addition to the differences mentioned above, the data from the "Needs and Prioritization Map.docx" document reveals a discrepancy in tutoring experts' perceptions of the functionality of university platforms. A high percentage of tutoring experts (55.6%) believe the university platform is not functional for offering their services, citing student preferences for direct communication and platform limitations as the main reasons.

5.4 Recommendations and conclusions.

Based on the analysis of the perspectives of students, educators, and tutors/experts, the following recommendations can be formulated for the design, development, and implementation of Intelligent Tutoring Systems (ITS) in higher education:

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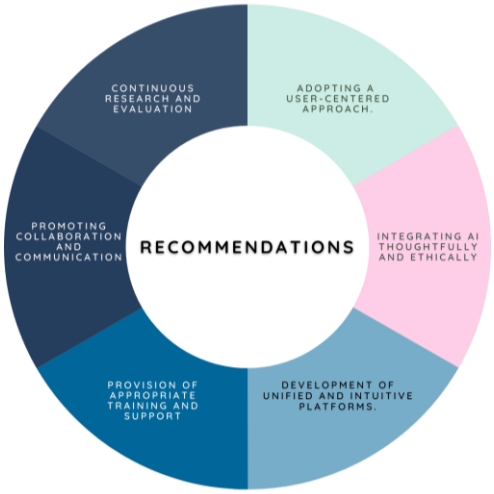

1. Adopting a user-centered approach. ITSs should be designed taking into account the needs, preferences, and learning styles of all users, including students, educators, and tutors/experts. This entails creating personalized, adaptable, accessible, and easy-to-use systems that promote student autonomy and engagement and facilitate the work of educators and tutors.
2. Integrating AI thoughtfully and ethically. AI should be used as a tool to enhance mentoring, but not to replace human interaction and personal connection. It is crucial to address concerns about equity, privacy, algorithmic bias, and transparency, and to ensure that ITS are used responsibly and ethically.
3. Development of unified and intuitive platforms. Higher education institutions should prioritize the development of centralized platforms that integrate the various functions and tools related to tutoring and learning. These platforms should be easy to use, accessible from different devices, and well integrated into the existing academic structure, reducing bureaucracy and facilitating communication and collaboration among all users.
4. Provision of appropriate training and support. It is essential to provide educators and tutors with comprehensive training and ongoing support to ensure they can effectively use ITS and adapt to new features and updates. This training should address both the technical and pedagogical and ethical aspects of ITS implementation.
5. Promoting collaboration and communication. ITS should be designed to facilitate communication and collaboration between students, educators, and tutors/experts. This includes creating virtual spaces for interaction, resource sharing, and teamwork, as well as promoting a sense of community and mutual support.
6. Continuous research and evaluation. Ongoing research and evaluation are needed to better understand the impact of ITS on teaching and learning, identify areas for improvement, and adapt systems to changing user needs.

In conclusion, the findings of this research highlight the transformative potential of Intelligent Tutoring Systems (ITS) to enhance higher education, but also underscore the importance of carefully addressing the diverse needs, expectations, and concerns of students, educators, and tutors/experts.

ITS have the potential to personalize learning, increase student engagement, facilitate the work of educators and tutors, and improve the efficiency of academic processes. However, to fully realize this potential, it is critical to adopt a user-centered design approach, prioritize

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ethics and equity, and ensure that technology is used to support, not replace, human interaction and personal connection.

Moreover, it is essential to recognize that the adoption of Intelligent Tutoring Systems (ITS) should not be viewed merely as a technological innovation, but rather as part of a broader cultural shift within higher education institutions. Stakeholders must receive adequate training not only in how to use these tools effectively, but also in how to integrate them pedagogically. This involves rethinking instructional strategies, assessment methods, and student engagement practices to fully leverage the advantages offered by ITS while maintaining a human-centered learning environment.

Therefore, the successful implementation of ITS requires a collaborative effort among all stakeholders, including students, educators, tutors/experts, administrators, technology developers, and policymakers. By working together to address the challenges and seize the opportunities presented by ITS, we can create a future of higher education that is more personalized, accessible, equitable, and effective for all.

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