TEASER

Teacher as an avatar

Didactic Guidelines

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Introduction to the TEASER Project: Why and Goals

The TEASER project addresses the urgent need to adapt vocational education to the rapidly advancing digital landscape. With the increasing integration of artificial intelligence (AI) and avatars into various industries, educational institutions must evolve to prepare students for the future workforce. This project is particularly relevant for vocational education in sectors like chemistry, IT, and mechatronics, where the use of advanced technologies is becoming essential. The TEASER project aligns with the Digital Education Action Plan 2021-2027, focusing on equipping educators with the tools and knowledge needed to effectively integrate AI and avatars into their teaching practices. The overarching aim is to modernize and enrich vocational education through the use of pedagogic-sound, and digitally supported learning methods.

Why the TEASER Project?

The core motivation behind the TEASER project lies in the increasing demand for digitally literate vocational educators. As AI and avatars (definition of Avatars section11) become more prevalent in industry, it is crucial that vocational training adapts to these developments to maintain its relevance. Educators currently lack the necessary skills to effectively incorporate these technologies into their teaching. By filling this gap, the project supports the digital transformation of educational institutions and ensures that vocational training continues to meet modern industry standards. This initiative is particularly important as it aligns with several strategic EU priorities, including the Digital Education Action Plan 2021-2027, promoting digital readiness and resilience in education.

Project Goals

The TEASER project has several key goals:

1. Develop and Enhance Digital Competencies: One of the primary objectives is to provide vocational educators, especially in chemistry, IT, and mechatronics, with the skills to apply AI
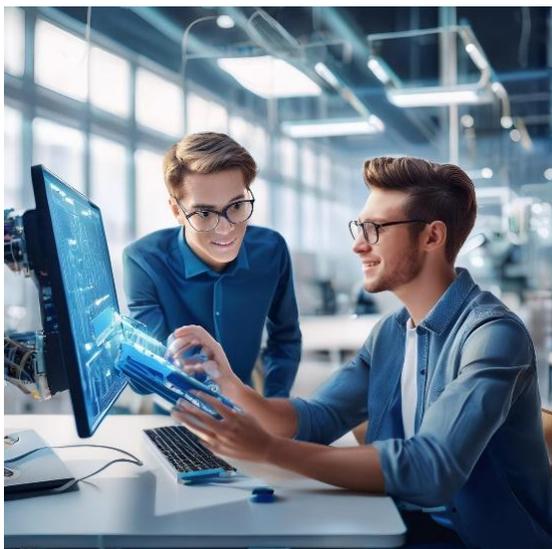
and avatars in their teaching. This aims to foster digital pedagogy, enabling educators to better engage students with modern, interactive learning methods.

2. Integrate AI and Avatars into Practical vocational training (Work-based learning): The project aims to develop, test, and evaluate new teaching and learning scenarios that utilize AI and avatars. By doing so, vocational training can be transformed into a more dynamic and supportive learning environment, where students receive personalized guidance and educational support.

3. Support the Digital Transformation of Education: The TEASER project not only focuses on training educators but also on encouraging educational institutions to adopt and support digital innovations. This involves promoting a structural shift towards digitally supported learning, ensuring that institutions are prepared for the future of vocational education.

4. Promote Sustainable and Continuous Use of AI and Avatars: To ensure long-term success, the project includes ongoing promotional activities and training programs that will allow educators to continuously develop their digital skills. This will help maintain the impact of the project beyond its initial implementation phase.

By addressing these goals, the TEASER project aims to modernize vocational training and ensure that educators are well-equipped to navigate and teach in a digitally enhanced educational landscape.

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Wishes and Foundations of the TEASER Project

In the development of the TEASER project, a variety of stakeholder (Directors, managers and teachers of the participating VET schools) wishes and foundational principles were carefully considered to ensure that the project meets the needs of educators, students, and institutions alike. Below is a summary of the key themes and aspirations that emerged during the research and interviews with participants.

1. Pedagogical Challenges and Solutions

One of the primary drivers behind the project is the shared belief that AI and avatars should solve core pedagogical challenges, such as improving student engagement and creating a more personalized learning experience. Interviewees agreed that AI and avatars have the potential to support students more effectively, providing real-time guidance and learning opportunities, regardless of location or time.

2. Expectations for the Integration of AI and Avatars

Across the board, stakeholders expressed a strong desire to better understand the potential of AI and avatars in education. This includes practical examples of how these technologies can be integrated into the classroom and vocational training, making educational content more accessible and interactive for students.

3. Investment in Technological Infrastructure

Another consistent theme was the need for investment in the necessary technological infrastructure. Participants emphasized the importance of upgrading existing systems and platforms to accommodate AI and avatars, ensuring they can deliver personalized content to students. This also includes significant investment in training staff to effectively use these technologies.

4. Challenges and Obstacles

Several key challenges were identified, including a lack of time and insufficiently qualified staff. These barriers could hinder the successful integration of AI and avatars in vocational education. To address this, interviewees highlighted the importance of structured training programs and the development of internal expertise to support the long-term sustainability of these innovations.

5. Support and Best Practices

There is a shared request for support in the form of best practices, technical assistance, and pilot programs to test AI and avatar technologies in real-world educational settings. This would allow educators to learn from one another and share insights on the best ways to integrate AI and avatars into teaching.
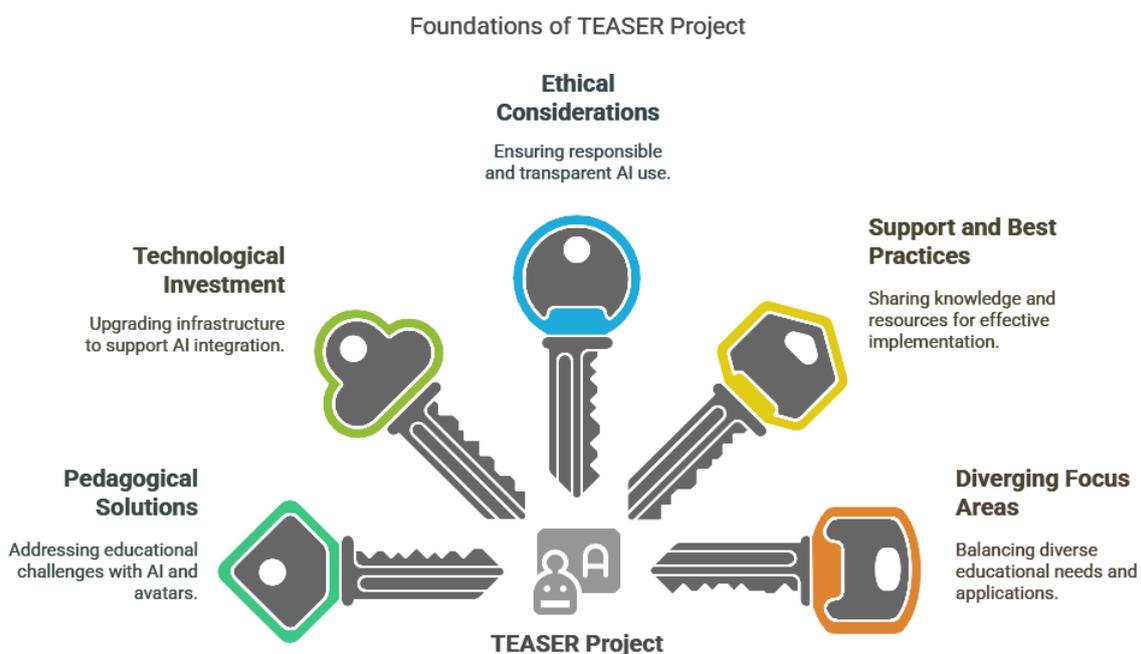
6. Ethical and Privacy Considerations

Transparency and privacy are viewed as critical when using AI in education. Stakeholders emphasized the need for clear codes of conduct to ensure that AI applications are used ethically and responsibly. This includes implementing checks and balances to maintain trust among both students and staff.

7. Diverging Focus Areas

Although there is a shared vision regarding the use of AI and avatars, the interviews also revealed differences in focus. For instance, some stakeholders emphasized the importance of connecting different educational levels (MBO, HBO, and WO) through AI to create a more hybrid and personalized education system. Others were more focused on practical applications of AI, such as lesson preparation and performance evaluations.

Conclusion

The wishes and foundational principles identified in the TEASER project provide valuable insights into the direction of AI and avatar integration in vocational education. While there is a shared enthusiasm for the potential of these technologies, success will depend on addressing practical challenges, providing structured support, and maintaining ethical standards. These insights serve as a solid foundation for the project's continued development and implementation.

Foundations of TEASER Project

Ethical Considerations
Ensuring responsible and transparent AI use.

Technological Investment
Upgrading infrastructure to support AI integration.

Support and Best Practices
Sharing knowledge and resources for effective implementation.

Pedagogical Solutions
Addressing educational challenges with AI and avatars.

Diverging Focus Areas
Balancing diverse educational needs and applications.

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Selfie test

Selfie test results.

Commonalities

Digital Strategy and Support

All schools recognize the importance of a digital strategy and leadership support. However, differences are noted in the implementation and clarity of these strategies. SCP, SBG Dresden, and SC Kranj all emphasize the importance of a clear strategy. While SCP and Dresden see room for more consistency and expansion, SC Kranj has a particularly urgent need for concrete guidelines and structure.

Access to Resources

All schools have access to basic digital tools, but the extent of adequacy varies. SCP and Dresden report sufficient access to digital tools, while SC Kranj faces challenges with outdated equipment and limited connectivity. SCP highlights that while a baseline level of resources is available, regular updates and new licenses are needed to maximize the use of technology.

Inclusive Education

Inclusivity is widely regarded as essential by all schools. SCP and SC Kranj view technology as a means to cater to diverse learning styles and promote inclusivity. This aligns with Graafschap College's policy, where technology is specifically deployed to support students with special needs.

Professional Development

All schools state that ongoing professional development is essential for effectively utilizing technology. However, a lack of time and available training limits teachers' opportunities to expand their digital skills. Dresden and SC Kranj specifically emphasize the need for training in the ethical and pedagogical applications of technology, a point also noted by SCP.

School Comparison on Digital Integration

Characteristic	SCP	SBG Dresden	SC Kranj
Digital Strategy	Clear strategy, needs consistency	Clear strategy, needs expansion	Urgent need for guidelines
Access to Resources	Sufficient, needs updates	Sufficient	Outdated equipment, limited connectivity
Inclusive Education	Technology promotes inclusivity	Technology supports inclusivity	Technology promotes inclusivity
Professional Development	Essential, needs more time	Need training in ethical applications	Need training in ethical applications

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Differences

Level of Strategic Implementation

Graafschap College has a well-developed digital strategy, while SCP and SBG Dresden indicate there is room for more consistency and expansion. SC Kranj has an urgent need for clear guidelines and structure for implementing technology in the classroom.

Access and Resource Constraints

SCP and Dresden report no pressing need for additional investments in resources, but SC Kranj struggles with a lack of resources, such as outdated equipment, which hampers technological progress and creates inequalities in technological infrastructure.

Use of Avatars and AI

SC Kranj views avatars as valuable tools for inclusivity, as they cater to diverse learning styles. Dresden sees AI and avatars primarily as motivators for collaboration but expects a lesser impact on creativity. SCP similarly recognizes the potential of avatars and AI to support diverse learning styles and foster inclusivity.

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Support for Special Needs

Graafschap College and SC Kranj place a strong focus on technology to support students with special needs. Unlike these schools, Dresden reports fewer inclusion needs due to its specific student demographics. SCP, however, emphasizes inclusivity through technology, similar to Graafschap College and SC Kranj.

Comparative Analysis of Educational Institutions

1

SCP

SCP has resources but needs better strategic implementation.

2

Graafschap College

Graafschap College excels with strong strategic implementation and resources.

3

SC Kranj

SC Kranj faces challenges with both strategic implementation and resources.

4

SBG Dresden

SBG Dresden has strategic implementation but lacks resources.

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Conclusion

The SELFIE survey results indicate that all participating schools (SCP, SBG Dresden, SC Kranj, and Graafschap College) face the same fundamental challenges and priorities regarding technology integration in education. A strong digital strategy and leadership support are essential; however, schools indicate a need for further consistency and concrete guidelines to effectively integrate technology into the classroom. Schools with a well-developed strategy, like Graafschap College, have an advantage in technological implementation, while SCP and Dresden have a solid yet improvable foundation. SC Kranj would benefit from a more structured approach.
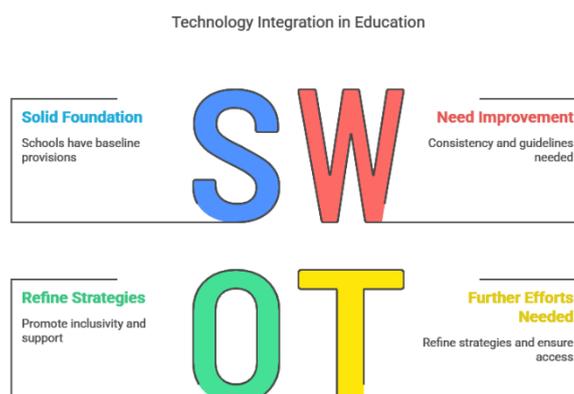
Access to resources remains another central concern. While SCP and Dresden have adequate baseline provisions, SC Kranj faces limitations due to outdated equipment and limited connectivity. This suggests inequalities in technological infrastructure, which may lead to variations in the learning experience across schools. Ensuring equal access to up-to-date technology is crucial to bridging this gap.

Inclusive education is widely recognized as important. SCP and SC Kranj emphasize that avatars and AI can contribute to promoting inclusivity and diversity in learning styles. Graafschap College plays a leading role here, with a specific focus on supporting students with special needs. This suggests that technology is seen not only as a learning tool but also as a means of creating an inclusive learning environment.

Professional development remains a crucial factor in equipping teachers with the necessary skills and confidence to utilize technology effectively. All schools indicate a need for more training, particularly in the ethical and pedagogical applications of technology. Limited time and lack of available training present obstacles, suggesting that schools should invest in accessible and relevant training opportunities to support teachers.

Summary

Together, the schools have laid a solid foundation for technology integration, but further efforts are needed to refine their strategies, ensure equal access to resources, promote inclusivity, and support teachers in their professional development. Building a consistent, well-supported, and inclusive technological ecosystem can lead to a rich, accessible, and innovative learning experience for all students.

Technology Integration in Education

Solid Foundation
Schools have baseline provisions

Need Improvement
Consistency and guidelines needed

Refine Strategies
Promote inclusivity and support

Further Efforts Needed
Refine strategies and ensure access

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Understanding avatars in education.

An avatar in educational settings is a digital representation or persona that can stand in for a teacher, student, or even a fictional character within a virtual or online environment. In the "Teacher as an Avatar" project, the focus is on how teachers can use avatars to enhance teaching, engage students, and adapt to new, tech-driven learning landscapes. Here's a breakdown of what an avatar represents and potential applications within this context:

1. Teacher Representation and Enhanced Engagement:

   - An avatar can serve as a visual embodiment of the teacher in virtual classrooms or online learning platforms. By adopting a digital persona, teachers can create a more approachable and sometimes even playful presence that resonates with students, especially in remote or hybrid learning environments.

   - Through avatars, teachers can creatively adapt their teaching style, adjusting their visual identity and even non-verbal cues to suit different subjects or lessons, which can make the material more engaging.

2. Virtual Reality (VR) and 3D Simulations:

   - In immersive VR environments, a teacher can take on an avatar to guide students through realistic simulations or scenarios. For example, an avatar might represent a science instructor in a virtual lab, a language teacher in a cultural simulation, or a coach in a virtual gym.

   - This use of avatars allows teachers to interact directly with students in a shared, simulated space, promoting active learning and real-world application of knowledge.

3. Pedagogical Role-Playing and Scenario-Based Learning:

   - Teachers can adopt avatars to embody various characters, professions, or historical figures, facilitating role-play-based learning. For instance, an avatar could represent a historical figure for a history lesson or a patient in a healthcare simulation, enabling students to engage in scenario-based learning.

   - This role-playing approach helps students connect with the content on a deeper level, allowing teachers to demonstrate empathy, decision-making, and critical thinking skills in a controlled, immersive environment.

4. Distance Learning and Digital Interaction:

   - In virtual classrooms, avatars enable teachers to create a sense of presence and continuity, even when physical presence is not possible. For students, interacting with a teacher-avatar can reduce the perceived distance and enhance engagement in online settings, promoting a connected classroom atmosphere.
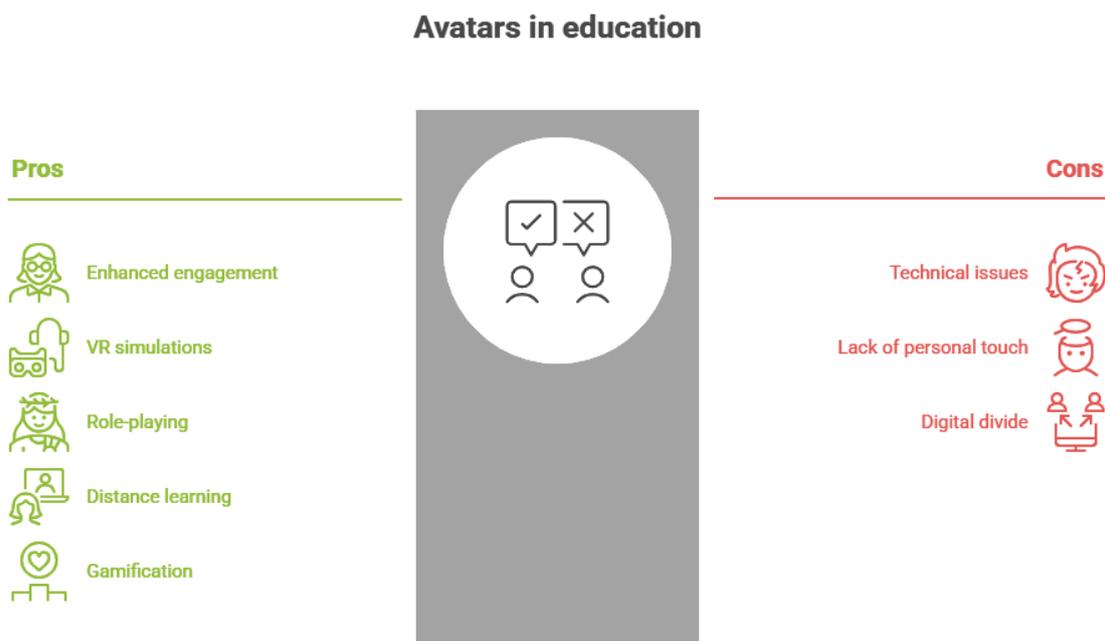
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- This application is particularly valuable in cross-cultural and multilingual settings like Erasmus+ projects, where avatars can bridge communication gaps and foster a sense of community among students from different backgrounds.

5. Avatars in Gamification and Student Motivation:

- By embodying an avatar, teachers can tap into gamified learning techniques. For example, a teacher-avatar might award "points" or guide students through a "quest," fostering motivation and active participation. Avatars can help teachers build a playful, dynamic classroom environment that rewards student achievements and promotes positive competition.

- This approach can be tailored to a range of subjects, making learning both fun and challenging, which can be especially engaging for younger students or those who benefit from interactive learning methods.

In the context of your Erasmus+ project, "Teacher as an Avatar," exploring these applications provides insights into how avatars can support diverse learning needs, encourage digital literacy, and foster innovative teaching strategies that prepare students for a tech-centric world.

Avatars in education

Pros
- Enhanced engagement
- VR simulations
- Role-playing
- Distance learning
- Gamification

Cons
- Technical issues
- Lack of personal touch
- Digital divide

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The Use of AI and Avatars in Relation to the Hype Cycle

In the world of educational technology, the rise of artificial intelligence (AI) and avatars has become a significant topic of discussion. AI systems capable of automating tasks, supporting personalized learning, and even simulating human interactions via avatars, promise to transform the future of education. However, as with any emerging technology, we must critically examine the current state of AI and avatars in education within the context of the Hype Cycle.

What is the Hype Cycle

The **Hype Cycle**, developed by the research firm Gartner, provides a graphical representation of the maturity, adoption, and societal application of technologies. The cycle consists of five stages:

1. **Technology Trigger**: A new technology appears and gains significant attention through scientific breakthroughs or discoveries.
2. **Peak of Inflated Expectations**: The technology experiences a great deal of hype, often leading to exaggerated expectations about what it can achieve.
3. **Trough of Disillusionment**: Reality sets in, and it becomes clear that the technology cannot fully live up to the hype.
4. **Slope of Enlightenment**: A more realistic view of the technology is developed, and its strengths and weaknesses become clearer.
5. **Plateau of Productivity**: The technology matures, becomes widely adopted, and delivers valuable results.
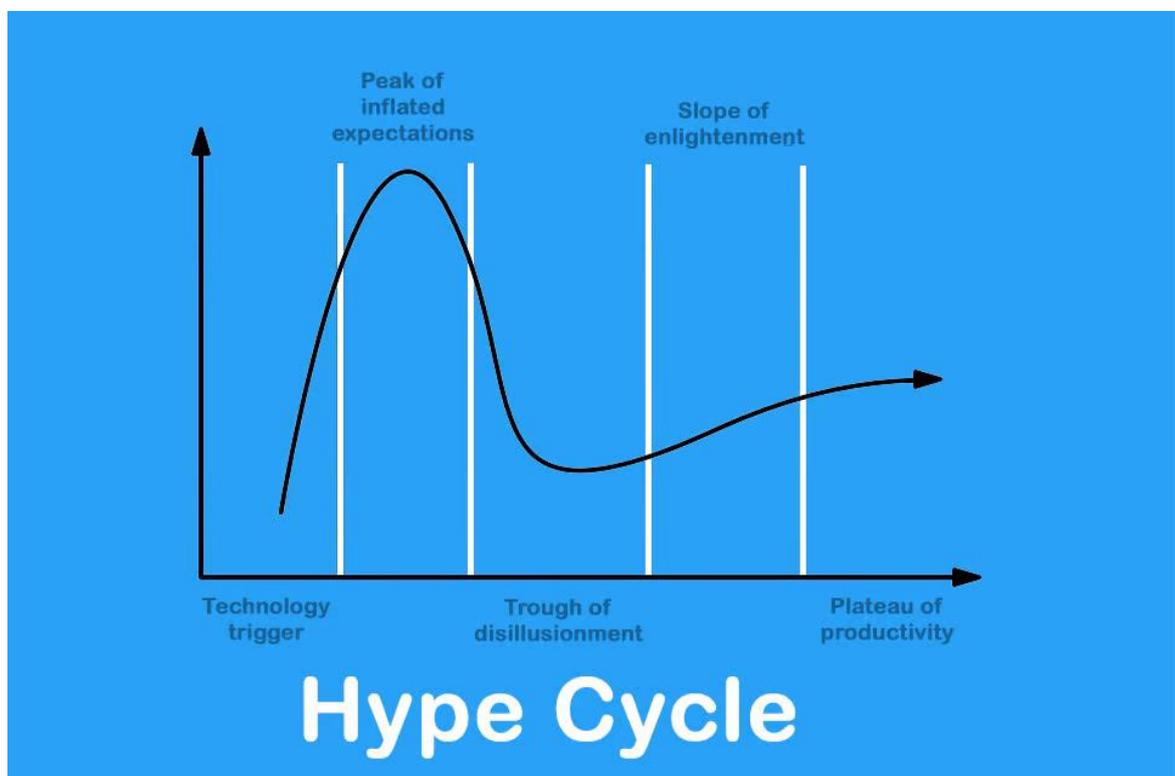
AI and Avatars: Where Are They on the Hype Cycle?

The emergence of AI and avatars in education is currently somewhere between the **Peak of Inflated Expectations** and the **Trough of Disillusionment**. There are significant expectations about how AI will support personalized learning, reduce administrative burdens on teachers, and even provide one-on-one interactive learning experiences via avatars.

Peak of Inflated Expectations

The hype surrounding AI and avatars in education has largely been fueled by innovations in machine learning, natural language processing, and advanced visual simulations. AI tools are promoted as solutions for personalized learning and improving the learning experience through immediate feedback and automated guidance. Avatars are viewed as AI embodiments that could potentially support teachers by offering virtual assistance. In this phase, AI and avatars are presented as the key to improving access to education and enhancing learning outcomes.

Trough of Disillusionment

While AI and avatar technology is advancing quickly, it is becoming clear that the practice often falls short of expectations. Many schools and educational institutions experience that AI and avatars are not yet ready for large-scale implementation, facing challenges such as insufficient data quality, privacy concerns, limited technical infrastructure, and the need for specialized teacher training.

It is also evident that avatars cannot replace human interaction in a learning environment. Although avatars can be useful as virtual assistants, the teacher's role is indispensable for providing social and emotional support. The **Trough of Disillusionment** is marked by the realization that AI and avatars are far from perfect and that further development and adaptation are required before they can be broadly applied.

Slope of Enlightenment

As the initial hype diminishes, educational institutions are beginning to focus on more achievable and realistic applications of AI and avatars. This primarily involves specific tasks such as adaptive learning (AI systems tracking individual progress and offering personalized suggestions), automated feedback systems, and simple educational chatbots. These applications offer short-term value and support education without creating unrealistic expectations.

Plateau of Productivity

In the future, when AI and avatars become mature technologies, they will be widely applied and integrated into educational environments. It is expected that AI will enable personalized learning, while avatars may play supporting roles in specific, repetitive, or practical tasks. Importantly, teachers in this phase will be supported by AI and avatars without losing their human interaction and emotional guidance.

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Conclusion

The use of AI and avatars in education is a fascinating yet complex development that is still in the early stages of the Hype Cycle. While there are promising prospects, we must critically follow the technology, experiment with practical applications, and remain realistic about current limitations. Ultimately, as the technology matures, education is likely to benefit from AI and avatars, but only if these technologies are integrated in a supportive and ethically responsible manner.

Sources in Europe:

6. UNESCO, AI Competency Framework for Teachers, 2024.
7. European Commission, Digital Education Action Plan 2021-2027.
8. European Union, Ethical Guidelines for Trustworthy AI, 2020.

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Guiding teachers on AI use and misuse in education

"AI processes vast information, generates new content, and helps decision-making through predictive analyses. In education, AI has transformed the traditional teacher–student relationship into a teacher–AI–student dynamic. This shift requires a re-examination of teachers' roles and the competencies they need in the AI era. Yet, few countries have defined these competencies or developed national programs to train teachers in AI, leaving many educators without proper guidance.

The AI competency framework for teachers addresses this gap by defining the knowledge, skills, and values teachers must master in the age of AI. Developed with principles of protecting teachers' rights, enhancing human agency, and promoting sustainability, the publication outlines 15 competencies across five dimensions: Human-centred mindset, Ethics of AI, AI foundations and applications, AI pedagogy, and AI for professional learning. These competencies are categorized into three progression levels: Acquire, Deepen, and Create.

As a global reference, this tool guides the development of national AI competency frameworks, informs teacher training programs, and helps in designing assessment parameters. It also provides strategies for teachers to build AI knowledge, apply ethical principles, and support their professional growth"(AI competency framework...).

AI for Teaching and Learning

In the context of teaching and learning, AI is applied in several key areas, each with its own subtopics and relevant competencies:

1. **Adaptive Learning Technologies**: These technologies use AI to adapt content and tasks based on individual student needs, promoting personalized learning experiences. Key competencies include adaptive task selection, content creation, and curation.

2. **Monitoring & Feedback**: AI tools support real-time diagnostics, learning analytics, and adaptive feedback to track student progress and adjust the learning process accordingly.

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3. **Task Automation**: AI automates administrative and educational tasks such as grading, assessment, and the use of educational chatbots. This frees up teacher time and enhances efficiency in managing learning environments.

4. **Early Warning Systems**: AI-powered systems can identify students at risk of falling behind and trigger timely interventions. These systems include advanced monitoring tools, digital twins, and AI-infrastructure specific to educational settings.

AI in education also raises ethical questions concerning data privacy, transparency, and the balance between human and AI interactions. As AI increasingly integrates into education, competencies related to ethics and privacy, as well as human-AI relations, become crucial for educators to navigate effectively. Through its various applications, AI supports the development of hybrid human-AI relations and ethical frameworks that prioritize the rights and needs of students and teachers alike.
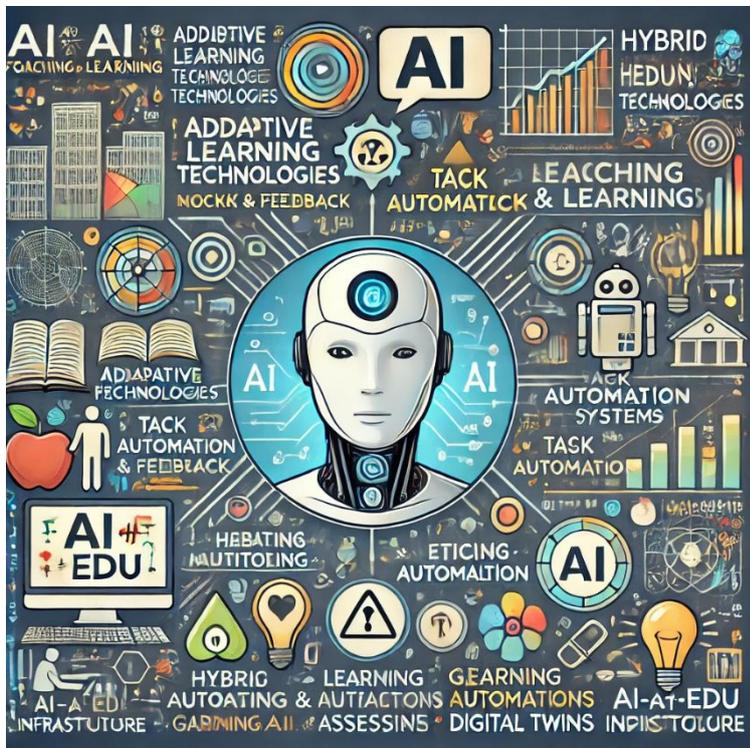
Ai isn't still there yet, text is difficult.

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