

<p>What is your initial impression of the potential educational impact of these platforms?</p> <ul style="list-style-type: none"><li>• Promising potential<ul style="list-style-type: none"><li>◦ Improves studying:<ul style="list-style-type: none"><li>▪ Individuell</li><li>▪ Flexible</li><li>▪ Remote</li><li>▪ Inclusive/Accessible</li></ul></li></ul></li><li>• Big change --&gt; could have positive and negativ impact</li><li>• Sceptical<ul style="list-style-type: none"><li>◦ A lot of effort</li></ul></li></ul> <p>1. Evolution of Opinion: Some respondents express initial skepticism but note a positive change in their opinion over time, especially considering recent innovations in VR/AR.</p> <p>2. Crucial Change in Education: Metaverse education is seen as having the potential to bring a crucial change, especially in the context of the transformative impact of COVID-19 on education.</p> <p>3. Security and User-Friendliness: Concerns are raised about the need for security, user-friendliness, and the potential to replace traditional teaching methods.</p> <p>4. Promise of Immersive and Collaborative Learning: The potential impact is viewed positively, with expectations of immersive and collaborative learning experiences that enhance engagement in higher education.</p> <p>5. Individualization and Flexibility: Respondents see the potential for more individualized, flexible, and remote learning experiences, connecting with people globally without leaving one's room.</p> <p>6. Inclusivity and Accessibility: The inclusivity and accessibility of metaverse platforms are highlighted as positive aspects, enabling participation from people worldwide.</p> <p>7. Financial Considerations: Concerns are raised about the potential cost and complexity of implementation, with perceptions that the technology may be advanced but expensive.</p> <p>8. Implementation Challenges: Some express doubts about the ease of implementation and emphasize the importance of overcoming development challenges to fully realize the intended impact on education.</p> <p>In summary, while there is optimism about the potential positive impact of metaverse platforms on education, there are also considerations related to security, user-friendliness, cost, and the challenges associated with implementation and development.</p>	<p>How will advancing metaverse developments affect education?</p> <ul style="list-style-type: none"><li>• More engaging education<ul style="list-style-type: none"><li>◦ Better collaboration</li><li>◦ Virtual experiments</li></ul></li><li>• Less social pressure</li><li>• Accessible</li><li>• Personalized</li></ul> <p>1. Immersive Learning Experiences: Metaverse developments are anticipated to transform education by providing immersive learning experiences, turning lectures into interactive experiences and facilitating global collaboration among students.</p> <p>2. Next Step in Virtual Communication: Metaverse is seen as the next step beyond current virtual communication tools (Zoom/Teams), offering new levels of interaction, collaboration, and personalized learning opportunities for students.</p> <p>3. Increased Motivation and Engagement: Advancements in the metaverse are expected to make learning more interesting for students, potentially increasing motivation and reducing social pressure associated with traditional learning environments.</p> <p>4. Accessibility and Personalization: There is an expectation that metaverse technologies will make education more accessible, interactive, and personalized, with virtual classrooms and collaborative environments redefining traditional learning methods.</p> <p>5. Cost Reduction: Some foresee cost reductions in education as a potential benefit of metaverse development.</p> <p>6. Gamification and Engaging Resources: Anticipations include personalized learning content, increased engagement, and interaction through gamification and the use of innovative resources.</p> <p>7. Support for Special Needs Students: Metaverse developments are seen as providing more opportunities and support for students with special needs.</p> <p>8. Breaking Classroom Boundaries: The metaverse is expected to break the walls of traditional classrooms, enabling new possibilities in education and potentially addressing teacher shortages through effective virtual learning methods.</p> <p>In summary, the consensus is that advancing metaverse developments will have a positive impact on education by providing more engaging, personalized, and accessible learning experiences, potentially transforming the traditional education landscape.</p>
<p>Can you envision specific scenarios where these platforms could be particularly beneficial for teaching information systems concepts?</p> <ul style="list-style-type: none"><li>• More hands on by giving more background to it tasks</li><li>• Groupbased tasks profit from interactivity</li><li>• Real world problem solving</li><li>• Simulations</li><li>• Structure learning process and pace myself</li><li>• Visualization</li><li>• Possibility to dig into topic deeper ( On demand)</li></ul> <p>1. Realistic Simulations: The metaverse can provide realistic simulations of IT environments, allowing students to troubleshoot network issues, engage in cyber security scenarios, and attend virtual conferences to discuss tech trends. This hands-on, immersive approach could make complex concepts more exciting.</p> <p>2. Group Projects and Seminars: Metaverse solutions can enhance group-based projects and seminars, facilitating collaboration among students. The interactive nature of the metaverse could improve student interaction and enable constant progress monitoring.</p> <p>3. Adding Real Backstory to Projects: Metaverse platforms offer the opportunity to add a real backstory to projects, bringing tasks to life. This allows students to experience more realistic scenarios where they can apply their skills and knowledge acquired in their studies.</p> <p>4. Hands-On Lab Experiences: Metaverse platforms can provide hands-on lab experiences, particularly useful when dealing with topics that are challenging to access in real life, such as space, astrology, or specific elements that are difficult to study in a physical setting.</p> <p>5. Global Interaction Platforms: Metaverse platforms could become integral to university life, offering global interaction platforms, interactive simulations, access to realistic case studies, engaging guest lectures, and even the ability for students to structure their learning process at their own pace.</p> <p>6. Visualization of Data and Simulations: Metaverse platforms can serve as large screens for visualizing data and simulations. They can also facilitate collaborative programming among students.</p> <p>7. Virtual Collaboration and Team Projects: Metaverse platforms can support virtual collaboration and team projects, creating simulated environments for practical application of information systems concepts.</p> <p>8. Interactive Teaching Content: In an ideal scenario, metaverse platforms would not only explain teaching content but also interactively answer student questions, allowing for deeper exploration of topics.</p> <p>In summary, the envisioned scenarios emphasize the potential of metaverse platforms to provide immersive, collaborative, and interactive learning experiences, making information systems education more engaging and practical.</p>	<p>In your opinion, how might incorporating 3D metaverse platforms enhance or hinder students' learning experiences in information systems?</p> <ul style="list-style-type: none"><li>• Hands on</li><li>• Grasp Complex concepts in a better way</li><li>• (Negativ) In person learning would e lost--&gt; socializing of university</li><li>• More individual</li><li>• People need training first</li><li>• Motion Sickness</li><li>• Bigger publikum possible</li></ul> <p>1. Enhancement through Immersive Learning: The immersive nature of 3D metaverse platforms is seen as a significant enhancement, providing hands-on, interactive simulations that make it easier to understand complex information systems concepts.</p> <p>2. Improved Collaboration and Interactivity: There is an expectation that incorporating metaverse platforms could greatly improve collaboration and interactivity in information systems modules, offering unique and individualized learning experiences.</p> <p>3. Creating Collaborative Learning Environments: 3D metaverse platforms offer opportunities for collaborative learning environments, where specific examples or subjects can be explored through activities like escape games, enhancing engagement.</p> <p>4. Technical Barriers as Potential Hindrance: Potential hindrances include technical barriers, learning curve challenges, and the need for reliable internet connectivity. There is a concern that people might not be motivated to adapt to a new and potentially complicated tool.</p> <p>5. Enhancement of Engagement and Motivation: The use of metaverse platforms is expected to make learning more exciting, increasing engagement and motivation. However, concerns about the cost of required hardware and potential discomfort, such as motion sickness or headaches from VR glasses, are acknowledged.</p> <p>6. Realistic Simulations and Practical Application: Metaverse platforms are seen as beneficial for realistic simulations of information systems scenarios, facilitating practical application and enabling students to apply theoretical knowledge to real-world situations.</p> <p>7. Fostering Collaborative Learning Experiences: The immersive nature of the metaverse is expected to foster collaborative learning experiences, allowing students to work together in virtual spaces and develop teamwork and communication skills.</p> <p>8. Potential for Distractions or Information Overload: Some acknowledge that the immersive nature of the metaverse could potentially lead to distractions or information overload, making it challenging for students to concentrate on specific learning objectives.</p> <p>In summary, while the consensus is positive about the potential for enhancement through 3D metaverse platforms in information systems education, there is an awareness of potential challenges related to technical aspects, adaptation, and the need for careful consideration of the learning environment.</p>
<p>How feasible do you think it is to integrate 3D metaverse platforms into a Bachelor-level Information Systems curriculum?</p> <ul style="list-style-type: none"><li>• Technology Integration would prepare students for evolving landscape of IT</li><li>• Big Investment</li><li>• Definitely Doable</li><li>• Structure and Plan required first</li><li>• Balance between traditional and metaverse</li></ul> <p>1. Positive Outlook: Many express enthusiasm and find it quite feasible, citing the potential to elevate the learning experience, offer hands-on simulations, and align with the evolving landscape of information systems.</p> <p>2. Resource and Investment Considerations: Several respondents highlight the need for significant investment, both in terms of equipment and the development of tailored solutions. Cost is acknowledged as a factor, making the feasibility contingent on available resources.</p> <p>3. Feasibility with Time: While generally seen as feasible, some emphasize that it will take time. Development and testing phases are identified as crucial, suggesting a gradual implementation.</p> <p>4. Balancing Metaverse and Traditional Learning: Feasibility is seen as contingent on having a balanced concept that integrates metaverse and traditional learning. The adaptability and curiosity of IS students are noted as potential facilitators.</p> <p>5. Potential Challenges: Challenges such as planning, infrastructure, faculty training, and aligning with educational goals are acknowledged. The need for a clear understanding of the institution's vision is emphasized.</p> <p>6. Practical Use Case Considerations: One respondent expresses uncertainty due to a lack of a practical use case in mind, indicating that a clear vision for implementation might be needed.</p> <p>In summary, while the overall sentiment is positive, feasibility considerations include resource availability, investment time, and the need for well-planned</p>	<p>Are there specific topics within the curriculum that you believe could be effectively taught or reinforced using these platforms?</p> <ul style="list-style-type: none"><li>• Coding</li><li>• HCI</li><li>• Project Management</li><li>• Database</li><li>• UX</li><li>• Data Visualization</li></ul> <p>1. Coding/Programming and Project Management: The immersive nature of the metaverse is seen as particularly beneficial for teaching coding/programming and project management, offering a modern and engaging approach.</p> <p>2. Human-Computer Interaction (HCI): HCI is identified as another area where metaverse platforms could be of high benefit, potentially providing interactive and immersive experiences.</p> <p>3. Enterprise Content Management (ECM) and Scenario-Based Courses: Courses like ECM that involve scenarios are mentioned as being well-suited for metaverse teaching, bringing scenarios to life and creating a more enjoyable learning experience.</p> <p>4. Collaborative Learning and Events: While not specifying topics, some respondents emphasize the potential for creating more collaborative learning situations and events using 3D metaverse platforms.</p> <p>5. Database Management, Cybersecurity, Software Development Life Cycles: Practical applications in database management, cybersecurity simulations, and understanding software development life cycles are highlighted as areas where metaverse platforms could be effective.</p> <p>6. Algorithm Visualization: Certain algorithms are mentioned as being well-suited for visualization in the metaverse, providing a deeper understanding of concepts and algorithms.</p>

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6. **Practical Use Case Considerations:** One respondent expresses uncertainty due to a lack of a practical use case in mind, indicating that a clear vision for implementation might be needed.

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How would you plan to encourage adoption of the metaverse solution among educators and students?

- Pilot Programs
- Show the benefits to all participants
- Workshops
- Provide training

1. **Pilot Programs and Demonstrations:** Advocate for pilot programs or demonstrations to showcase the benefits of the metaverse in enhancing interactivity and digitalization for information systems education. Collaborate with enthusiastic educators and involve students in feedback loops.
2. **Addressing Educator Resistance:** Recognize potential resistance among educators due to the longstanding use of traditional learning materials. Emphasize the benefits, such as the ability to reuse scenarios across semesters, and highlight the positive impact on learning experiences.
3. **Advertise Enhancements and Stress-Free Learning:** Advertise the new technology and its enhancements, emphasizing stress-free metaverse learning to make it appealing to both educators and students.
4. **Workshops, Training Sessions, and Pilot Programs:** Implement workshops, training sessions, and pilot programs for educators to familiarize them with the metaverse. Showcase successful case studies and gather student feedback to demonstrate improved learning outcomes.
5. **Mandatory Projects and Documentation:** Integrate mandatory projects that use the metaverse to create knowledge about the environment. Provide comprehensive documentation, including instruction videos and possibly a chatbot, to facilitate understanding and usage.
6. **Engaging Videos:** Use engaging videos to showcase what is possible with metaverse solutions, creating a desire among educators and students to try the technology.
7. **Comprehensive Training and Technical Support:** Offer comprehensive training for educators and provide sufficient technical support. Recognize the time constraints educators may face and ensure that the technology is user-friendly and not overly time-consuming.

In summary, the suggested approaches focus on hands-on experiences, addressing resistance, showcasing benefits, and providing comprehensive training to educators. Demonstrating successful implementations and involving both educators and students in the adoption process are key strategies.

In your view, what strategic advantages do you believe a metaverse solution brings to university education, and how can it transform the overall learning experience for students, educators, and institutions

1. **Increased Interactivity and Participation:**
  - Emphasizes improved interaction between teachers and students, promoting independent learning.
2. **Time-Independence and Flexibility:**
  - Suggests metaverse solutions, coupled with AI, can create a time-independent learning experience, allowing for flexible course selection.
3. **Transformative Impact on Engagement:**
  - Highlights transformative impacts such as enhanced student engagement, dynamic content delivery, and innovative tools for educators.
4. **Institutional Advantages:**
  - Points out benefits for institutions, including expanded reach, cost-effective virtual campuses, and quick adaptation to evolving educational needs.
5. **Global Collaboration and Flexibility:**
  - Emphasizes fostering collaboration, breaking down geographical barriers, and providing flexible learning environments.
6. **Economic and Diversity Benefits:**
  - Highlights intensified exchange, low-cost opportunities, and attracting a wider range of students as economic and diversity advantages.
7. **Immersive Learning and Motivation:**
  - Mentions immersive learning environments, innovative teaching methods, and increased motivation and engagement.
8. **Catalyst for Understanding and Research:**
  - Suggests metaverse solutions can lead to better understanding, sparking interest in specific topics and promoting further student-led research.

In summary, the consensus is that metaverse solutions offer a range of benefits, from enhancing individual learning experiences to transforming the entire educational landscape by making it more interactive, flexible, and globally connected.

Looking ahead, what do you think is the future role of 3D metaverse platforms in Information Systems education?

1. **Immersive Learning and Practical Skill Development:** 3D metaverse platforms are expected to play a pivotal role in Information Systems education by providing immersive learning experiences and facilitating practical skill development.
2. **Individualized and Tailored Learning:** The metaverse is seen as a tool that can transform education by offering individualized and tailored learning experiences for students.
3. **Hands-on Learning and Collaborative Projects:** The future role involves using 3D metaverse platforms for hands-on learning, collaborative projects, and immersive simulations, bridging the gap between theory and practice.
4. **Challenges and Considerations:** Despite the potential, challenges such as accessibility, technological infrastructure, and inclusivity need to be addressed to ensure the effective integration of 3D metaverse platforms in Information Systems education.
5. **Combining Metaverse with AI:** Some see the synergy of 3D metaverse platforms with AI as a powerful combination, enhancing visualization and accessibility of information in real-time.
6. **Gradual Adoption:** While the potential is recognized, it is acknowledged that widespread adoption will take time, and the integration of metaverse platforms into education will be a gradual process.
7. **Pioneering Role in IS Education:** As the technology gains attention, there is a belief that 3D metaverse platforms can play a pioneering role in Information Systems education.

5. **Database management, Cybersecurity, Software Development Life Cycles:** Technical applications in database management, cybersecurity simulations, and understanding software development life cycles are highlighted as areas where metaverse platforms could be effective.
  6. **Algorithm Visualization:** Certain algorithms are mentioned as being well-suited for visualization in the metaverse, providing a deeper understanding of concepts and strategies.
  7. **Big Data Visualization:** There is a mention of the potential for big data visualization, indicating that complex data concepts could be effectively taught using metaverse platforms.
  8. **Network Design and Management, User Experience (UX) Design:** Metaverse platforms are suggested as beneficial for teaching network design and management, as well as UX design.
- In summary, the identified topics range from technical aspects like coding, project management, and cybersecurity to more interactive areas like HCI and scenario-based courses. The consensus is that 3D metaverse platforms can offer practical, immersive, and engaging learning experiences across various Information Systems topics.

What role do you think 3D metaverse platforms play in engaging students with course content

- Tailored content
- Supporting
- Visualization
- Collaboration
- Communication

1. **Transformation of Course Content:** 3D metaverse platforms are seen as crucial for transforming course content into interactive and immersive experiences. They enable hands-on simulations, collaborative problem-solving, and real-world applications, creating a dynamic and exciting learning environment.
2. **Tailoring Content to Progress:** The ability to tailor content to students' progress is emphasized, enhancing engagement by allowing learners to proceed at their own pace. This adaptability can provide additional information for better understanding or allow skipping aspects already known.
3. **Enhancement of Learning Engagement:** 3D metaverse platforms are recognized for enhancing learning engagement, collaboration, and comprehension. The interactive and dynamic nature of these platforms is seen as a key factor in encouraging active participation.
4. **Immersive Exploration of Concepts:** The immersive nature of 3D metaverse platforms is highlighted, providing students with a more immersive way to explore complex concepts and facilitating a deeper understanding of the material.
5. **Supporting Other Teaching Formats:** Some acknowledge that 3D metaverse platforms can play a supporting role, complementing other teaching formats to create a more comprehensive and effective learning experience.
6. **Individualized Engagement:** The level of engagement is considered individual, with some seeing it as a game-like experience at the moment.
7. **Realistic Visualization for Easier Understanding:** Realistic visualization is mentioned as a valuable feature for enhancing understanding, particularly for new and complex concepts. Visual examples can make ideas more accessible compared to traditional text-based approaches.

In summary, 3D metaverse platforms are viewed as transformative tools that enhance engagement through interactivity, adaptability, and immersive exploration of course content. They offer a dynamic and individualized learning experience that goes beyond traditional teaching formats.

What potential challenges do you foresee in implementing 3D metaverse platforms in an educational setting?

1. **Technical and Accessibility Issues:**
  - Challenge: Technical glitches, accessibility concerns, and the need for training both educators and students.
2. **Knowledge Gap and Change Management:**
  - Challenge: Lack of knowledge on implementation, change management, and substantial investment, reflecting potential barriers to adoption.
3. **Costs, Learning Curve, Bugs, and User Experience:**
  - Challenge: Costs, learning curve, bugs, and ensuring a positive user experience, highlighting various practical and usability challenges.
4. **Infrastructure Costs and Resistance to Change:**
  - Challenge: Initial infrastructure costs, resistance to change from educators, and alignment with educational objectives.
5. **Social and Behavioral Concerns:**
  - Challenge: Loss of real-life interaction, potential for negative behavior, and security and privacy concerns, emphasizing social and behavioral drawbacks.
6. **Resource Constraints and Tradition:**
  - Challenge: Limited resources, reluctance to depart from traditional methods, and the time-consuming nature of finding effective concepts.
7. **Security and Privacy Issues:**
  - Challenge: Security and privacy concerns, particularly regarding student data, highlighting the critical importance of data protection.
8. **Technology Development Perception:**
  - Challenge: Skepticism about the perceived lack of real examples, suggesting a potential gap between technology perception and actual development.

In summary, addressing these challenges is crucial for a successful integration of 3D metaverse platforms into educational settings.

Should there be a focus on AR-Metaverse solutions to keep the physical aspects of in person education modules?

1. **Balancing Physical and Virtual:** There is a recognition of the importance of maintaining a balance between physical and virtual elements in education.
  2. **Benefits of Interaction:** Some emphasize the value of physical proximity for social interaction and believe that AR-Metaverse solutions can provide a middle ground.
  3. **Blended Learning Approach:** Many suggest a blended learning concept, combining the strengths of both physical and digital environments to offer a more comprehensive and interactive educational experience.
  4. **Preserving Connection to the Real World:** Maintaining a connection to the real world is considered important, and AR-Metaverse solutions are seen as a strategic choice to achieve this.
  5. **Personalized and Nuanced Approach:** AR-Metaverse solutions are viewed as offering a nuanced approach that caters to diverse preferences, aligning with the evolving landscape of educational technology.
- In summary, the responses suggest a positive inclination towards integrating AR-Metaverse solutions as a means to preserve physical aspects while leveraging the benefits of immersive technology in Information Systems education. The emphasis is on finding a balanced and personalized approach to enhance the overall learning experience.

3D metaverse platforms can play a pioneering role in Information Systems education, contributing to innovation in practical applications.  
In summary, the general sentiment is optimistic about the future role of 3D metaverse platforms in Information Systems education, emphasizing immersive learning, practical application, and collaborative experiences, while also acknowledging the need to address challenges for effective implementation.

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