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The Impact of AI in Game Art and Design Education: Implementing AI into art practice as a tool

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The Impact of AI in Game Art and Design Education: This research examines the transformative role of artificial intelligence (AI) in game art and design education. Beginning with an introduction to AI, its historical development, and key concepts, the study highlights AI tools and technologies currently used in game development, featuring case studies from popular games to illustrate their impact on design processes. The integration of AI into game art and design curricula is explored through case studies of educational institutions, identifying both challenges and opportunities in teaching AI. The role of AI in fostering creativity, including AI-generated content, is analysed, along with ethical considerations. The research also speculates on future trends and innovations, discussing emerging technologies and their implications for educators and students. Through detailed case studies and interviews with educators, industry professionals, and students, the study provides best practices and recommendations for integrating AI into curricula, fostering collaboration between academia and industry, and preparing students for future developments in game design.

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glad Group for Learning in Art and Design in Higher Education

The Impact of AI in Game Art and Design Education

Implementing AI into art practice as a tool

By: Luke West & Martial Bugliolo

Overview

(Ai creator studio, 2024)

Introduction

Luke West: Lecturer on the BA (Hons) Animation & Games at Arts University Plymouth. specialising in game art, QA testing, and 3D modelling, with expertise in immersive technologies that enrich the creation of interactive experiences. Passionate about advancing art and technology in education, fostering innovation, and mentoring future game industry professionals.

Martial Bugliolo: Senior Lecturer and Course Leader for BA (Hons) Animation & Games at Arts University Plymouth. He focuses on integrating new technologies like AR and VR into the curriculum. An active researcher and speaker at international conferences, Martial also contributes to the Studio Lab for Embodied Media, promoting sustainable tech integration.

Research Aims:

This research develops methods and workshops to integrate AI into art education, focusing on the ideation and iteration stages. It explores AI's potential benefits, challenges, and ethical concerns, preparing future designers to navigate and utilise this evolving technology effectively.

Objective 01

To use and implement AI within the artists design workflow as a tool and not a replacement.

Objective 02

To create practice based workshops for art education on AI tools that are acessable.

Objective 03

Market research and data collection on student using AI. Benefits and limitations of using AI within the design process and workflow.

Objective 04

Present and reflect the student data on benefits and limitations of using AI within the design process and workflow.

Overview of AI in Animation and Games

AI-Generated Art:

AI-generated art refers to the creation of visual art using algorithms and machine learning models to create visual imagery outputs.

- Example: Rick and Morty Creator's Game: High on Life (Tassi, 2022).

3D Procedural Generation, Terrain and Environment Creation:

AI and algorithms generate vast and complex game worlds, including landscapes, cities, and dungeons, enhancing realism and variety without extensive manual input.

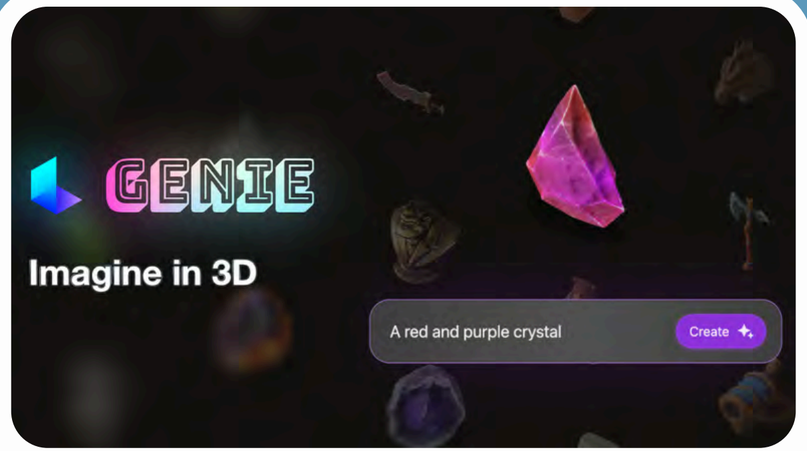
- Example: No Man's Sky uses procedural generation to create its massive universe with diverse planets and ecosystems (Ikeda, 2023).

Motion Capture and Character Animation:

AI enhances motion capture by refining the captured data, creating more fluid and natural movements for characters.

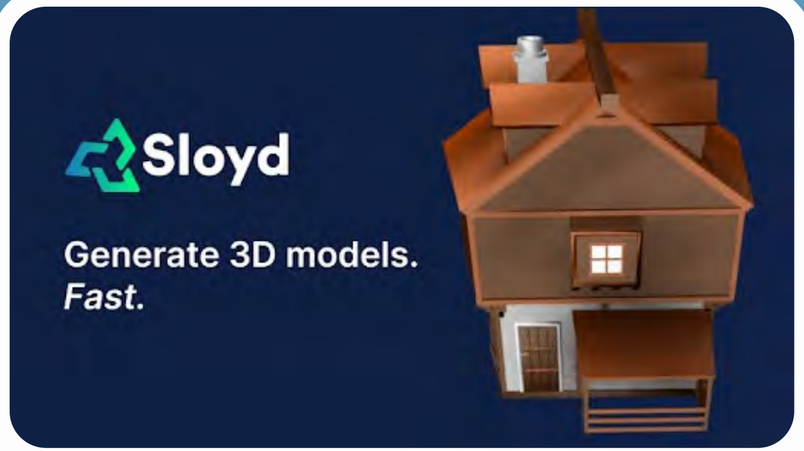
- Example: Hellblade: Senua's Sacrifice employs AI to improve the quality of its motion-captured animations (Goodall, 2019).
- Example: Cyberpunk 2077 uses AI for lifelike character animations and facial expressions.

AI Tools for 3D Art



Luma AI Genie

Luma AI Genie is a cutting-edge AI tool for creating high-quality, photorealistic 3D models from images or videos.



Sloyd AI

Sloyd AI is a tool that creates 3D models using artificial intelligence, automating and enhancing the modeling process for designers.

Move AI

Move AI is a technology that captures human movement for animation and gaming using artificial intelligence and machine learning.

AI Tools for 2D Art

Stable Diffusion

Stable Diffusion is a text-to-image model that generates high-quality images from textual descriptions using advanced AI techniques.

Image 2 Go

Image 2 Go AI is a tool for generating images based on text descriptions, enhancing creative and educational projects.

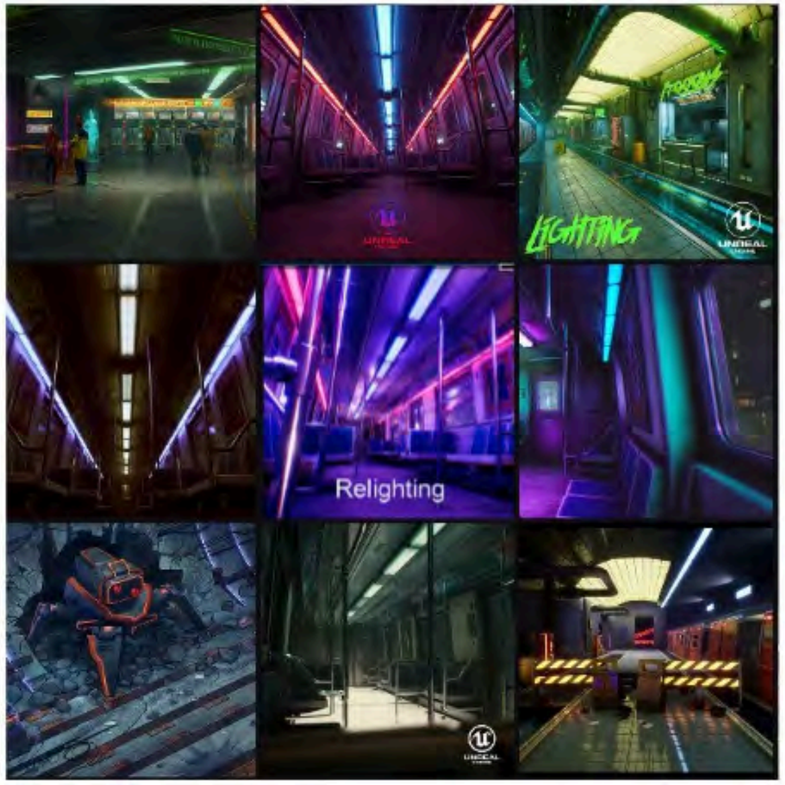
Adobe Photoshop AI

Adobe Photoshop AI leverages artificial intelligence to enhance photo editing, offering automated tools for retouching, selection, and creative effects.

Case Studies and Practice

“The things that make AI undesirable for certain use cases are positives in a combined human-computer creative process”
Thomas W. Malone, MIT Sloan Professor (Eastwood, 2024).

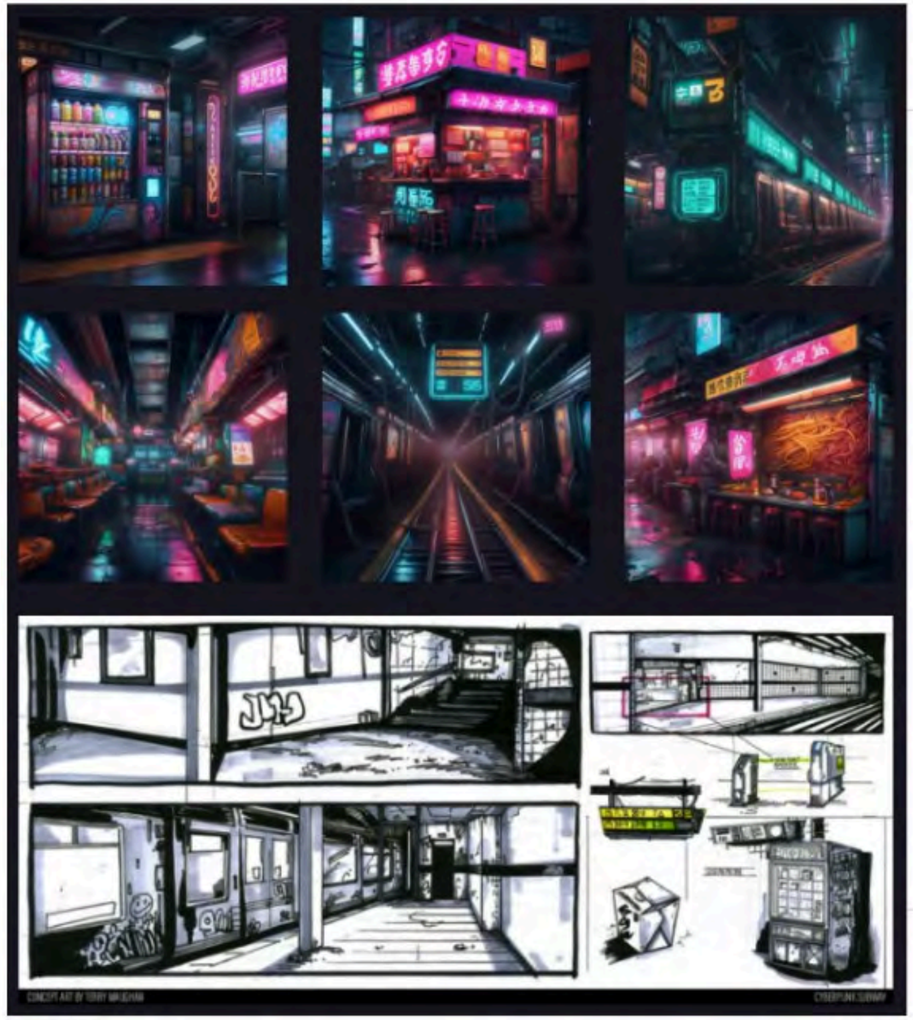
Originality and Inspiration, Human and AI



Human made artwork and inspiration board (Artstation, 2014).

AI made artwork and inspiration board Night Cafe, (2019).

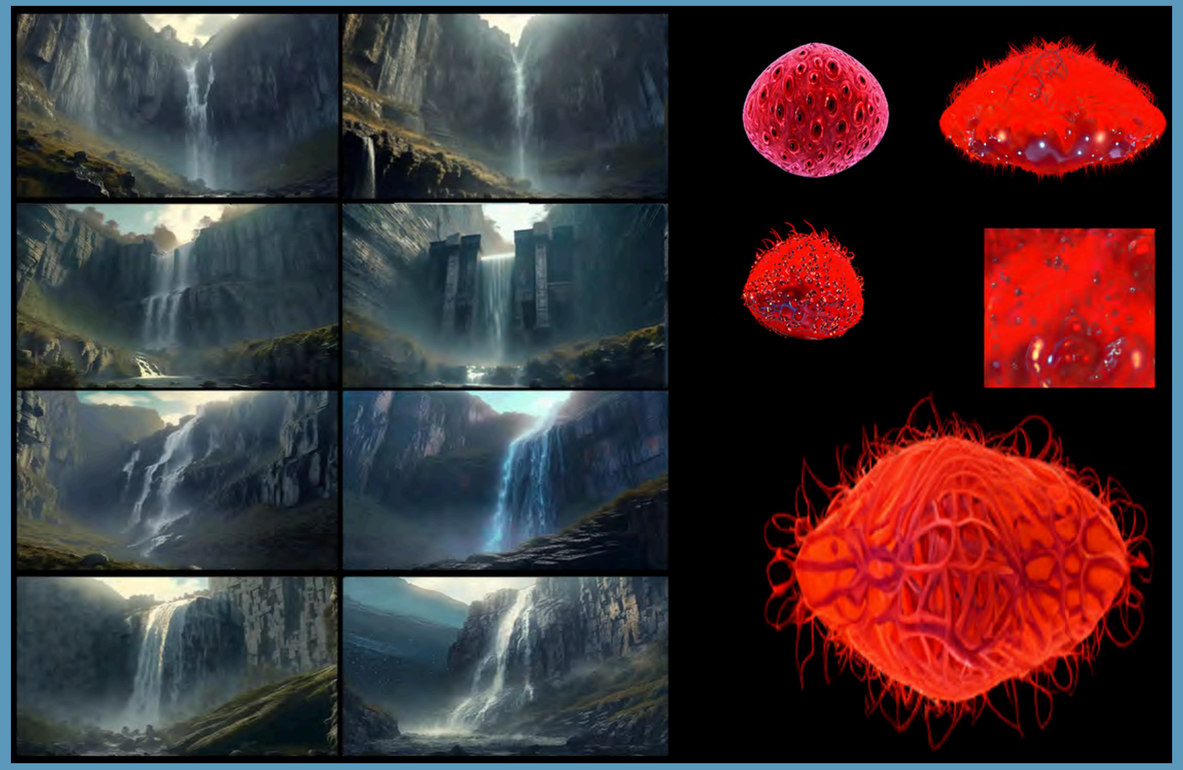
Implementation, AI as Idea Generation



NightCafé

SUBSTANCE PAINTER · Pt · 3 AUTODESK 3DS MAX · Ps Adobe Photoshop

Implementation, AI as Idea Generation



Adobe Photoshop IMG2GO

Adobe Photoshop

AI and Iteration of Concepts

(Neil Blevins, 2022)

BBC CAPTURES STUDENTS' EMBRACE OF AI IN CREATIVE PRACTICE

Friday, 16 February, 2024 — BBC journalists visited the Arts University Plymouth campus to learn more about the impact of generative AI and its effect on the creative industries.
https://www.aup.ac.uk/posts/bbc-captures-students-embrace-of-ai-in-creative-practice

Joseff Jones, 2024. Image generated in Stable Diffusion.

Sam Hart, 2024. Original image generated in GenCraft; artist enhanced in Sketchbook Pro.

‘AI and the Horizon of Creative Practice’ student symposium

AI and the Horizon of Creative Practice

Students came together to lead ‘AI and the Horizon of Creative Practice’, a student symposium introducing the history of generative AI and giving students the opportunity to talk about their own experiences and research into the ethical implications and opportunities of these emerging technologies.

Approaches:

AI has been increasingly integrated into creative education, serving as a powerful tool that enhances the ideation process, provides inspiration, and facilitates iterative development. Here are the main ways AI, particularly generative AI, has been implemented in creative education within Animation and Games at Arts University Plymouth as a potentuial tool:

1. Idea Generation and Brainstorming

- Automated Curation: Generative AI can gather images, color schemes, textures, and other visual elements from various sources to create mood boards that align with a given theme or concept.
- Style Transfer: AI can apply the style of famous artists or specific art movements to images, providing unique inspirations that can spark new ideas.
- Trend Analysis: By analyzing current trends across different creative domains, AI can suggest relevant themes and concepts for inspiration boards.

2. Iterative Design and Development

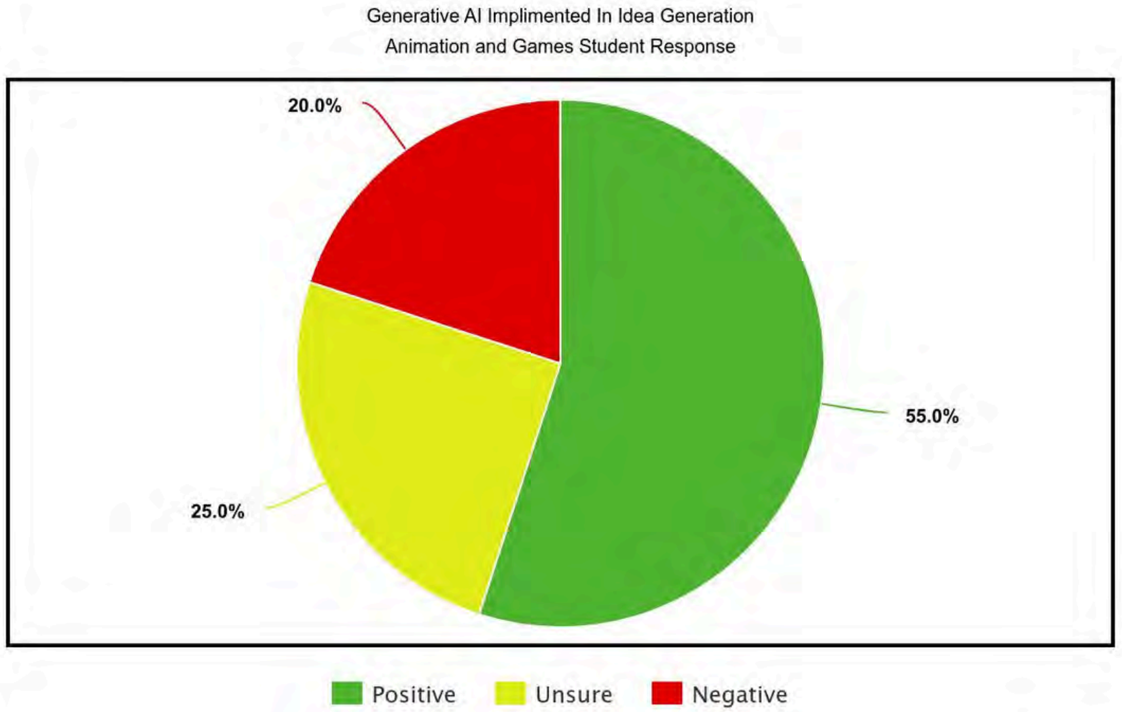
- Multiple Iterations: Generative AI can produce numerous variations of an initial design, allowing students to explore a wide range of possibilities and identify the most promising directions.
- Style Exploration: AI can generate different styles and variations of an idea, helping students see their concepts from various artistic perspectives.
- Rapid Prototyping: AI-driven tools can quickly create prototypes of designs, enabling fast experimentation and iteration.

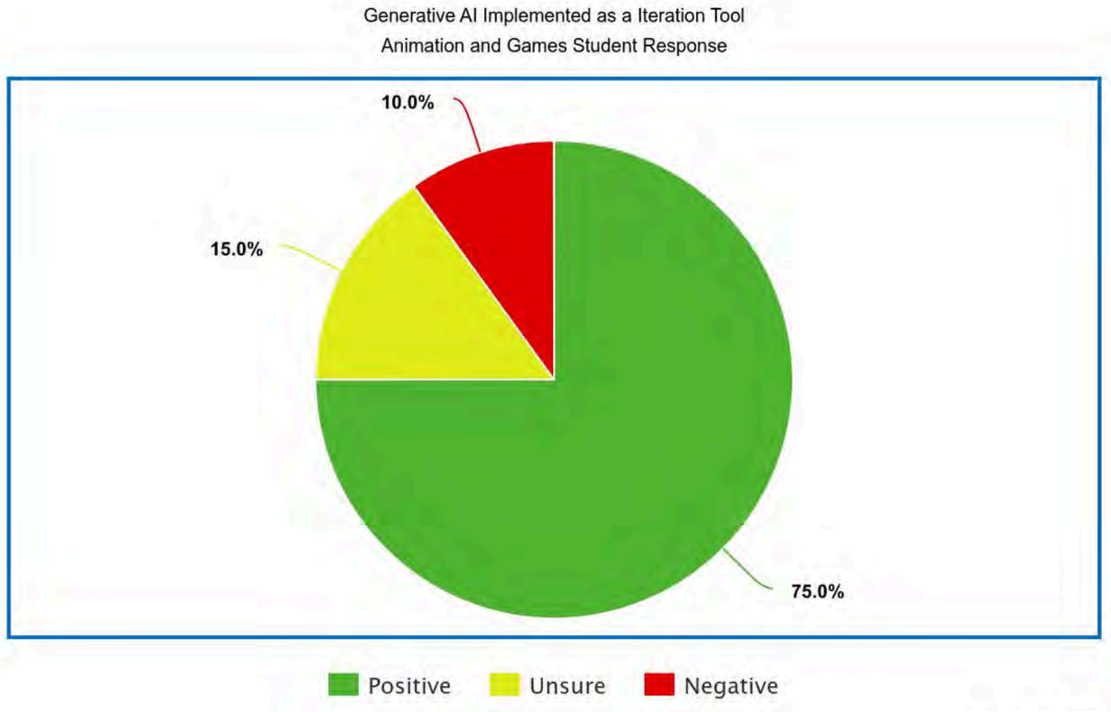
3. Enhancing Visual Creativity

- AI-Assisted Drawing and Painting: Tools like AI-powered drawing assistants can help students by providing suggestions for shapes, lines, and colors, or even by completing parts of their artwork.
- 3D Modeling: AI can assist in generating 3D models from sketches or 2D designs, allowing students to visualize their ideas in three dimensions.

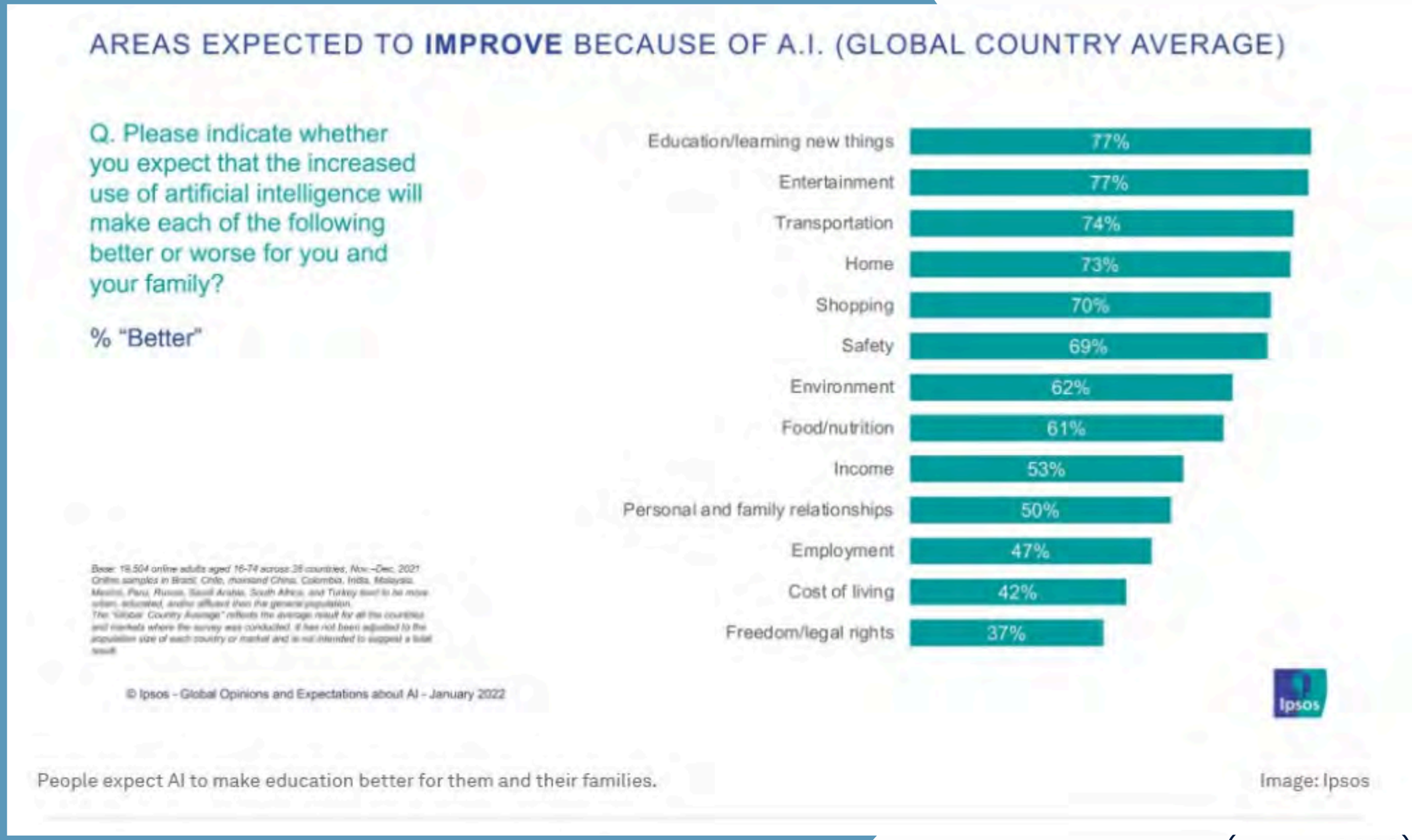
Statistics

AUP Student Data/Response on AI
Implemented In Design Workflow (2023).





World Economic Forum AI Data



People expect AI to make education better for them and their families.

Image: Ipsos

(Myers, 2022)

Benefits and Challenges of AI in Education

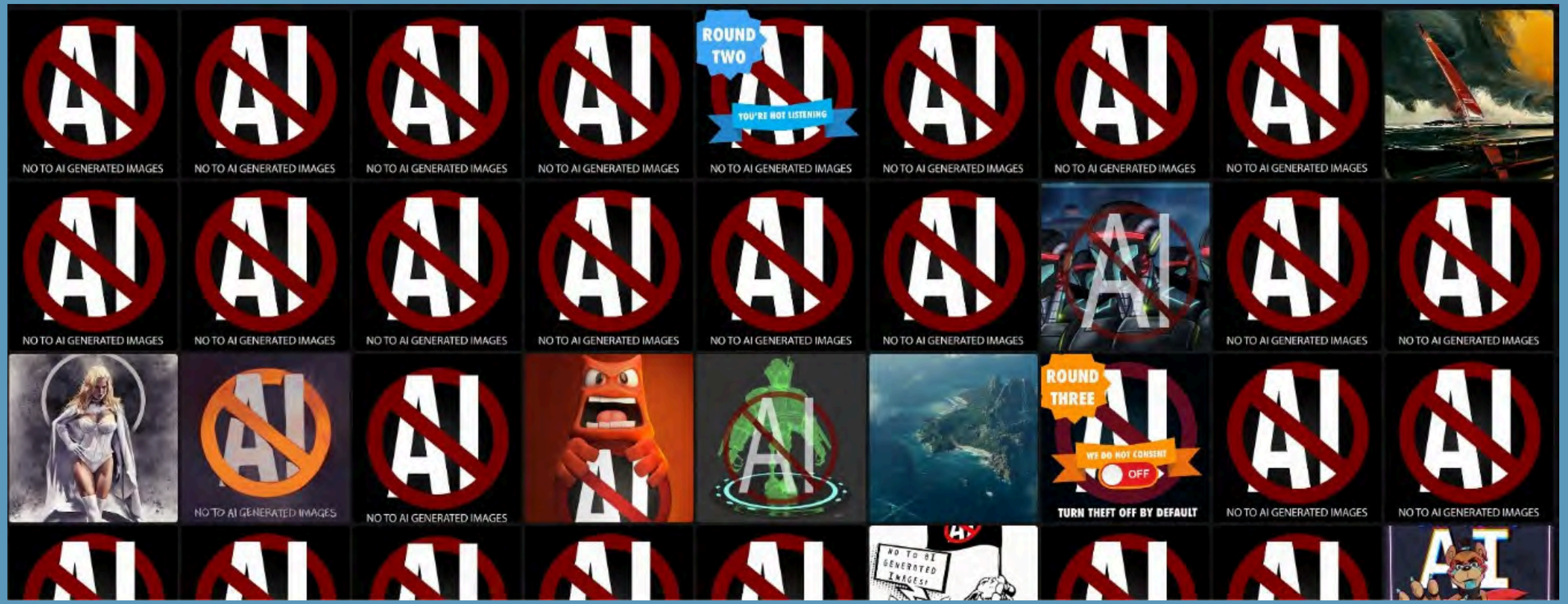
The Current Ethical Downsides of Using AI Art Generators:

- **Copyright violation is the biggest problem alongside the ongoing debate on whether AI-generated images are real art at all.**
- **Most AI generators learn from artists images online without artists' permission.**
- **AI generators don't compensate or give credit to artists.**
- **Data/cloud storage and usage for AI (carbon footprint).**
- **Scale and downsize of Studios and creative jobs due to AI replacing and making workflows/processes faster and or more efiicent.**

The Current Pros of Using AI Art Generators:

- **Innovation: AI art generation can help artists innovate by providing new tools and techniques for artistic expression.**
- **Efficiency: AI art generation can create large amounts of art within a short period. This can save time.**
- **Accessibility: AI art generation makes art creation easier and more accessible to everyone. People with no artistic abilities can use AI art tools to create visually appealing pieces.**

(Avey, 2023)



Social media *Artstation* “Say no to AI” movement 2022.

Conclusion:

AI in art education offers transformative benefits, including personalised learning, access to diverse artistic techniques, and enhanced creativity. However, challenges such as ethical concerns, the risk of devaluing human creativity, and the need for technological literacy remain. The rapid evolution of AI in this field is inevitable, necessitating ongoing human input, adaptation, and discourse. AI and AI-generated art will always rely on human oversight to ensure they complement rather than replace traditional artistic practices, fostering a collaborative future that enriches both education and artistic expression.

“Collaborate and Share Best Practices: To truly harness the potential of AI in education, it is essential for teachers to connect with other educators who are also embracing AI in their classrooms” (Culican, 2023).

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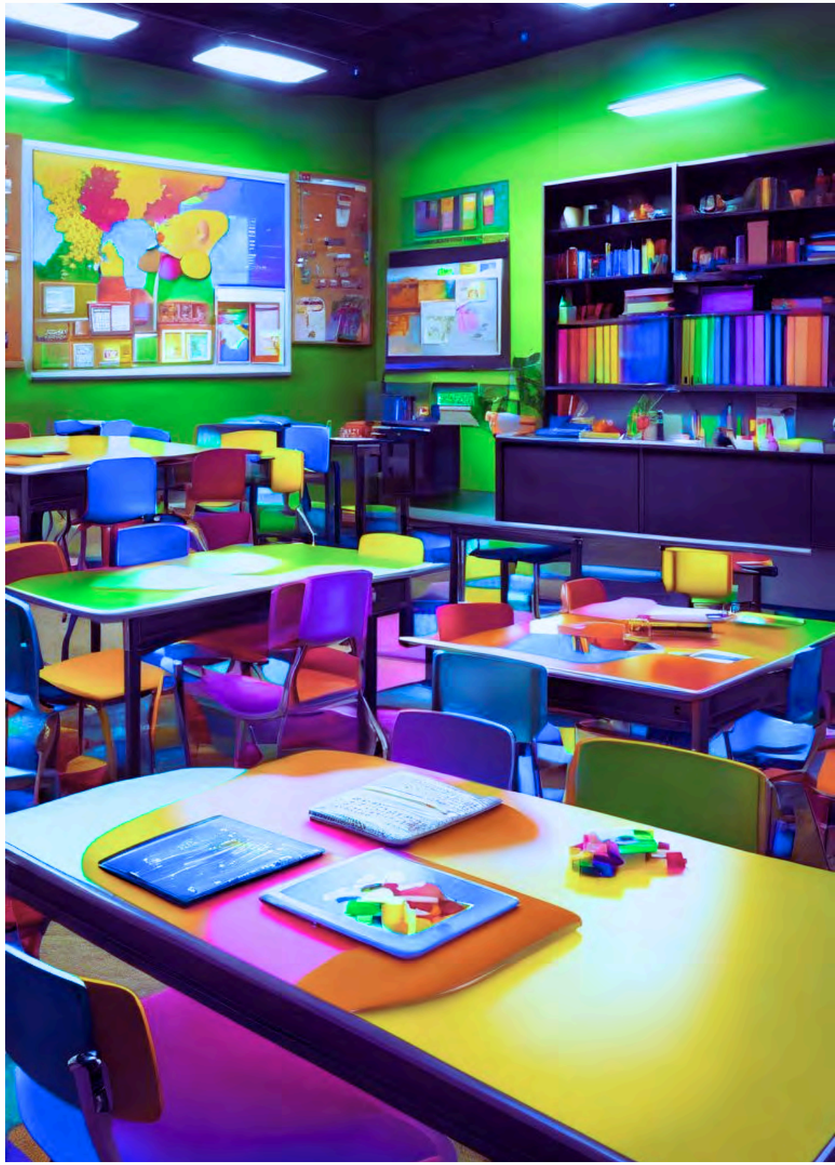
THANK YOU!

5 min Q&A



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