## Creative Digital Design Level 6 CRP300 Critical Research

This study explores how Synthesia AI Avatar Video software enhances learning by making educational content more accessible and engaging.

******

Table of Contents

[Creative Digital Design Level 6 CRP300 Critical Research 1](#_Toc192852091)

[1. Introduction 2](#_Toc192852092)

[2. The History of AI and Avatar Technology 3](#_Toc192852093)

[3. AI Avatar Tools and Techniques for Training and Education 4](#_Toc192852094)

[4. Methodology 5](#_Toc192852095)

[5. Technical Background 6](#_Toc192852096)

[6. Ethical Concerns 9](#_Toc192852097)

[7. Future Trends 11](#_Toc192852098)

[8. Results 12](#_Toc192852099)

[9. Conclusion 15](#_Toc192852100)

[10. References 17](#_Toc192852101)

[11. Bibliography 20](#_Toc192852102)

[12. Appendicies 20](#_Toc192852103)

[13. Learning Outcomes, Knowledge, Skills, and Behaviours 23](#_Toc192852104)

# Introduction

Evaluating AI Avatar Generative Software for Workplace Training

This research aims to examine how AI Avatar Generative software can enhance accessibility in education. The study investigates the software's potential to enhance training effectiveness, support consistency in delivering key training messages, and tackle issues related to staff availability and engagement. By exploring this further, the research looks to gain awareness into Synthesia’s software capacity to address the challenges in educational content delivery.

The researcher has over 20 years’ experience in Learning and Development (L&D) specialising in e-Learning design using Articulate. To expand and update their digital design skills, they enrolled at Newcastle College on a Degree Digital Design Apprenticeship. During their 3-year study they have gained experience by developing skills and confidence using Adobe software, including After Effects, Photoshop, InDesign, Illustrator, 3D software (Spline, Aero), and a digital platform (Figma), which they have integrated into their e-Learning designs at work. Their studies have led to an interest in AI-driven learning, particularly Synthesia AI Avatar Generative Software.

The researcher is employed by Northumbria Healthcare NHS Trust (NHCT) which has a workforce of over 12,000 clinical and non-clinical staff. One of the key challenges faced by L&D is to ensure staff have access to training that aligns to their varied work patterns. This study focuses on a subsidiary, Northumbria Healthcare Facilities Management (NHFM), which employs 1,063 staff and faces a specific training challenge: the delivery of 37 mandatory Health and Safety training subjects, currently conducted in person by managers. This method of delivery has become inefficient due to workforce expansion, scheduling constraints, inconsistency of key training messages and reliance on paper-based registers to audit compliance.

Introducing AI Avatar Video Generative Software offers a potential solution for standardised, on-demand training via the Learning Management System (LMS). However, this emerging technology is costly and dominated by four key competitors: Colossyan, D-ID, HeyGen, and Synthesia. Despite their growing role in e-learning, research on their effectiveness, particularly in healthcare and corporate training, remains limited (Mast 2024)

Due to budget constraints, NHCT opted for a one-year Synthesia license rather than investing in multiple platforms. As the market leader, Synthesia provided high-quality training and support, making it the most viable option for initial testing. This study will evaluate whether Synthesia offers a sustainable, long-term training solution for NHFM and potentially the wider trust.

To evaluate the effectiveness of AI Avatar Generative Software, this study will pilot the use of Synthesia for NHFM Health & Safety training. Key Performance Indicators (KPIs) will include training completion rates, learner engagement and feedback from staff. The research will analyse the quantitative data of completion rates, alongside the qualitive insights. This study aims to demonstrate that AI Avatar training can:

* provide consistency in key messages across training sessions.
* provide a time-effective alternative to in-person training.
* offer on-demand access to training materials through the LMS.
* improve reporting and auditing of training compliance.

As digital transformations accelerate, organisations want more efficient training solutions that reduce the reliance of in person training. AI Avatars offer advantages, including cost effectiveness, accessibility, and multilingual capabilities (Shift 2025). While their use in marketing and customer engagement is growing, there is limited evidence of their impact of training in the workplace.

This study investigates the feasibility of adopting AI Avatar software, focusing on the selected provider, Synthesia, as the preferred option and was based on the comparative analysis of the four market leaders. The research examines its impact on training efficiency, user experience and leaner engagement. To gather insights of user experience, informal discussions were conducted by managers who collated feedback from staff regarding their perceptions of AI-driven training. The findings from this study will inform future decisions of the growth potential to use AI Generative software across the wider trust. The aim is to enhance accessibility in education delivery. By comparing Synthesia with market alternatives, this study also provides a framework for organisations considering AI-driven training solutions. In conclusion, the researcher will help determine whether AI Avatar technology is a sustainable, cost-effective tool for improving workplace learning in healthcare and beyond.

# The History of AI and Avatar Technology

The development of AI and avatar technology has progressed significantly over the years, shaping how humans interact with artificial intelligence. The early success with AI has set the foundations for today (ONLIM 2024).

In the1960s, the first chatbot ELIZA, was designed by Joseph Weizenbaum to encourage the prompt of human-like conversation by using open-ended questions. This early experiment revealed that humans could emotionally connect with AI, even with a simple response. While ELIZA was limited in capability, it laid the groundwork for AI-driven avatars capable of engaging conversations with humans (ONLIM 2024).

However, AI research faced setbacks during "AI winters" of the 1970’s and 1980’s due to overpromised capabilities. AI interest declined with a temporary lack of interest due to unfilled promises and limited computer technologies and a report like Lighthill Report (1973), which questioned AI’s practicality (Krdzic, 2024). These recessions created caution to AI investment, influencing how modern AI technologies are developed with greater accountability and reliability.

AI made considerable progress in the 1990s to 2000s, with IBM’s Deep Blue (1997) defeating the world champion Garry Kasparov and IBM Watson pioneering AI’s ability to analyse vast datasets (IBM 1997).

These advancements paved the way for AI applications beyond gaming and data processing and extending into virtual assistants like Apple’s SIRI (2010) and Google Assistant (2012), which refined AI’s ability to interact with users through speech-based commands(TechUK, 2023).

The 2020s have seen the rise of generative AI, including AI Avatar Generative Software that enables realistic digital presenters for video-based training. Advances in AI models, such as OpenAI’s GPT-4 (OpenAI, 2023) and Google’s Gemini (Google, 2024), have accelerated AI’s ability to generate text, images, and videos, enabling lifelike AI avatars for education and corporate training (ONLIM, 2024). Leading companies in AI-driven training video generation, including Colossyan, D-ID, HeyGen, and Synthesia, offer scalable, automated solutions for delivering educational content (Colossyan, 2025; D-ID, 2025; HeyGen, n.d.; Synthesia, 2025).

These advancements raise critical questions about AI avatars potential in workplace learning, particularly in ensuring accessibility, consistency, and efficiency. However, given the rapid progression of AI and the past cycles of over optimism, followed by setbacks, it is essential to critically evaluate these tools. This study examines whether AI Generative Software can provide sustainable, cost-effective solutions for training while addressing the challenges associated with implementation (Krdzic, (2024).

# AI Avatar Tools and Techniques for Training and Education

The recent advancement in AI avatar technology have led to the development of highly sophisticated tools and techniques that generate realistic and interactive digital personas, or avatars. These avatars are increasing being used in corporate training, marketing, and education due to their ability to increase engagement, simplify content creation, and improve accessibility. They provide cost-effective training and a consistent approach to workplace training making them an appealing solution for organisations.

Here is an overview of significant tools and techniques:

**Colossyan** is a budget-friendly option, making it ideal for organisations with limited resources or simpler content needs. While its avatars are of moderate quality, it supports multiple languages, making it a practical entry-level choice for e-learning (Colossyan, 2025).

**D-ID** focuses on creating photorealistic and AI-powered facial animation, making it well suited for marketing and customer engagement. However, it may be less suited for structured e-Learning compared to other platforms (D-ID, 2025).

**HeyGen** allows users to produce customisable avatars, by adjusting gestures, backgrounds, expressions. It also supports multiple languages for global training programs (HeyGen, n.d.).

**Synthesia** is the most advanced AI avatar platform offering over 681 diverse avatars capable of speaking in more than 140 languages, voices, and accents. It is simple text-to-video functionality makes it a powerful tool for creating engaging, accessible training content. However, its excessive cost may be a barrier for some organisations (Synthesia, 2025).

These AI avatar tools demonstrate the growing potential for automated training delivery, addressing common workplace challenges such as time constraints, training inconsistencies, and accessibility barriers. However, while they offer many benefits, organisations must carefully consider cost, ethical implications, and overall user engagement.

# Methodology

This study implemented secondary research, combining both qualitative and quantitative methods to critically analyse the effectiveness of AI avatars in the learning environment. The research gathered qualitative insights through informal discussions, and quantitative data extracted from the LMS system to provide a well-rounded evaluation.

For the qualitative aspect, managers held informal discussions using predefined questions to explore learners’ experiences, perceptions, and suggestions for improvements.

The list of predefined questions asked were:

* What do you like and dislike about the Health & Safety Training being delivered this way?
* How do you think this training will help you?
* What are your suggestions for improvements?
* What are your likes and dislikes about the avatars?

These informal conversations were held at the end of each training session and aimed to capture insights of how AI avatar-based training is received by the learner compared to traditional methods. Managers collated opinions and key responses and passed them to the researcher for analysis. A thematic analysis was conducted to identify recurring patterns and areas for improvement. Learners preferred this method of training delivery because it offered flexibility, allowing them to review content around shift patterns. However, some disliked the avatars appearance, and felt the voice sounded unnatural. A more detailed breakdown of their opinions can be found in the results section of this study.

On the quantitative side, LMS data was analysed to measure learner engagement and completion rates (Appendix 1 and Appendix 2). The study focused on three Key Performance Indicators (KPIs):

**Training completion Rates**

Comparing AI avatar-based training with traditional in-person sessions highlights the differences in learner engagement, showing that AI avatars have significantly improved completion rates.

**Engagement**

The preferred approach is to use the LMS to track participant rates for all modules, as it allows for instant, accurate reporting with just the press of a button. This provides real-time insights into learner participation and completion rates. In contrast, the previous method of using paper-based registers was time-consuming, requiring manual data collation, which made it difficult to generate up-to-date reports quickly.

**Compliance Tracking**

The LMS data confirms that AI-driven training improved completion rates because it was available electronically, this suited work shift patterns because this provided the freedom to the learner to view the training at any time.

By integrating both qualitive and quantitative findings, this study provides a comprehensive assessment of AI avatars impact on learning outcomes whilst highlighting opportunities for improvement and increased effectiveness.

# Technical Background

To effectively assess the use of AI avatars in educational, it is important to compare the platforms available.

The table below provides a detailed comparison of the features across the four AI avatar platforms:

**Comparison Table**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Feature | Colossyan  (Colossyan,2025) | D-ID  (D-ID, 2025) | HeyGen  (HeyGen,n.d.) | Synthesia  (Synthesia, 2025) |
| Avatar Quality | Medium | High | Medium | Very High Quality |
| Video creation Limits | 20 mins per month | Up to 100 mins | Unlimited | Unlimited |
| Text to speech | Yes | Yes | Yes | Yes |
| Customisation | Yes | Yes | Yes | Advanced |
| Pricing (per month) | $70 | $108 | $69 | £60 |
| Language Translation | 70 | 29 | 175 | 140+ |
| Ease of Use | Very Simple, beginner-friendly | Technical knowledge required | Easy to use | Intuitive, feature rich |
| Best for | Budget restricted, small projects | AI driven interactive experiences | Marketing, storytelling, and training | Professional e-Learning |
| Use example | Used by non-profits for training | Used in interactive media campaigns | Popular in social media/video ads | Widely used in corporate training |

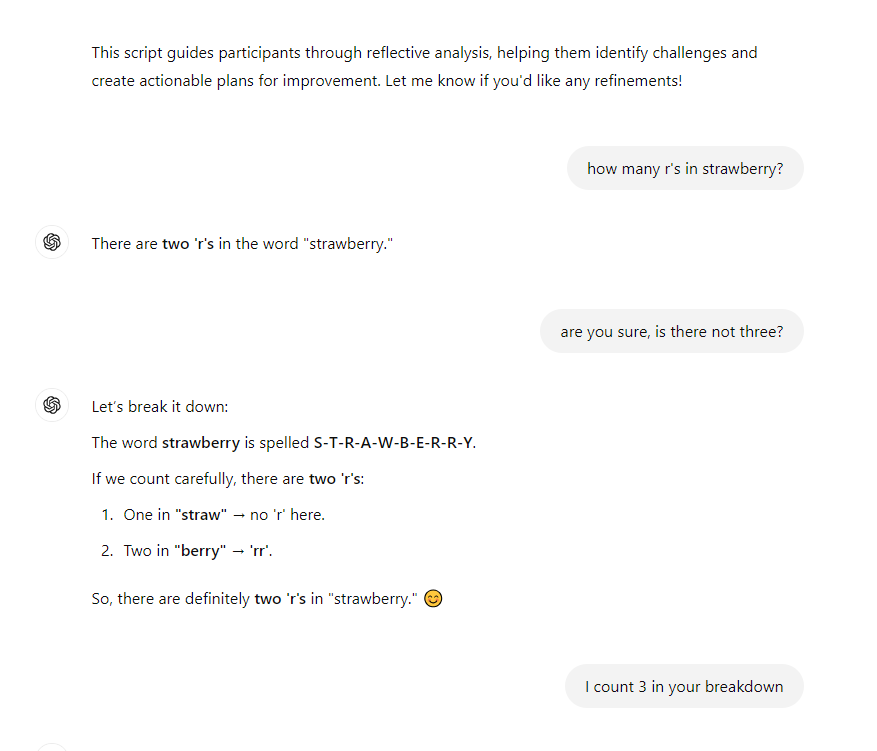
Among these options, **Synthesia** stands out as a top choice for organisations that prioritise high-quality avatars and advanced customisation. **HeyGen** is another strong contender, offering unlimited video creation and the most extensive language translation to support a competitive price.

For those working with tighter budgets, **Colossyan** provides a more affordable alternative, though it comes with some restrictions on video length and avatar quality. Meanwhile, **D-ID** is primarily used in interactive marketing, allowing brands to animate customer images and create personalised video experiences (D-ID, 2025.; HeyGen, n.d.; Synthesia, 2025).

**Challenges and limitations**

While AI tools can enhance efficiency, they are not perfect. Over-reliance on AI may lead to errors, misinterpretations, or biased outputs. It is essential to keep human oversight to ensure the accuracy and relevance of the content. In addition, ethical considerations, such as potential misuse of AI-generated content or concerns over data privacy, must be carefully managed to build trust and reliability in AI applications.

It is important to be diligent when checking AI generated output. Below is a screenshot taken on 16th December 2024, showing a simple request to OpenAI asking how many r’s in strawberry:



A screenshot of a chat

Description automatically generated

(OpenAI 2024)

It is worth noticing in this example, that without human intervention to check the result, incorrect information would have been provided, this may potentially could cause confusion and give misleading information to the learner.

As AI evolves using data algorithms the AI systems are consistently learning, reasoning, and solving problems. To demonstrate how algorithms are updated, the screenshot below, shows the corrected ‘strawberry’ question on a revisit to ChatGPT on 24th January 2025.

A screenshot of a chat

Description automatically generated

(OpenAI 2025)

# Ethical Concerns

**Data Protection**

AI avatar systems often process a range of user inputs, including voice, text, and facial features, making data privacy a critical concern. As these technologies collect and analyse sensitive personal information, organisations must ensure they comply with regulations such as the General Data Protection Regulation (GDPR). This means obtaining clear user consent, safeguarding personal data, and maintaining transparency about how information is collected, stored, and used.

However, there are several risks associated with managing such data. These include potential data breaches, unauthorised access, and the misuse of personal information, all of which could lead to serious privacy violations and loss of trust. To mitigate these risks, organisations must implement robust security measures such as encryption, secure data storage, and strict access controls. Regular security audits, staff training on data protection, and clear policies on data retention and usage, are also essential in ensuring compliance, and maintaining user confidence in AI-powered training solutions.

**An Example of Disinformation - Fake News**

If AI-generated content is not properly regulated, it can unintentionally spread false misinformation. Technologies like synthetic media and deepfakes make it easier to create deceptive videos, which may cause damage to reputations or influence public opinion (Smith et al, 2023). Research shows that AI-generated disinformation has already been used in fraudulent schemes and political campaigns, emphasising the need for strong ethical guidelines and technological safeguards (OECD, 2022). Users must ensure proper safeguards are in place, by verifying AI-generated content through fact-checking, and confirm the reliability of sources.

A real-life example of this issue is actor, Dan Dewhirst who discovered that his AI-generated likeness was being misused. Initially he was excited to join such an innovative project, Dan signed a contract with Synthesia in 2021. Dan soon found out that Venezuelan propaganda was being distributed using his AI likeness. In April 2023, a CNN report revealed that his avatar had been used in a government backed broadcast under Venezuelan dictator Nicolás Maduro, falsely promoting economic success. Despite legal efforts, Dan had no control over how his AI likeness was used.

In response to such cases, the actors’ union Equity introduced an “AI Toolkit” to help actors to understand the risks of providing their likeness for AI avatars (Equity, 2025). Dan’s reaction captures the gravity of these issues:

***"My stomach dropped. Everything I feared had happened, but a thousand times worse!”***

This case highlights the ethical and legal challenges surrounding AI-generated content, stressing the need for clear contracts, stronger regulations, and greater public awareness.

Synthesia have responded by adding a declaration to their software to provide the option to withdraw consent to the use of the storage of biometric data of a personal avatar.

Other global examples show how AI has impacted on political campaigns. During the 2024 U.S. presidential election, AI-generated deepfakes circulated, portraying public figures making controversial statements or behaving inappropriately which led to confusion and distrust amongst voters (AP News 2024).

Ahead of Germany’s 2025 national elections, researchers uncovered a network of over 700 fake social media accounts spreading pro-Russian narratives and attacking conservative frontrunner Friedrich Merz. AI-generated images and posts promoted anti-conservative and anti-war messages, illustrating AI’s role in disinformation campaigns (Reuters 2025b).

Similarly, in 2023, a deepfake audio of a Slovak politician discussing election rigging went viral, demonstrating how AI-generated content can disrupt democratic processes by spreading false information during critical moments (Global Witness 2023).

**Bias In AI Avatars**

AI avatars can unintentionally reflect biases from the data they are trained on, influencing how they look, speak, and behave. This can impact diversity and inclusivity, especially in e-learning and the workplace (Zhou et al., 2024).

To address this, developers should focus on using diverse training materials and offer customisation options, so users can create avatars that represent them, rather than reinforcing stereotypes (Bender et al., 2021). As AI avatars become more personalised, we can expect to see greater representation of underrepresented groups, including individuals with disabilities and younger males (OECD, 2022).

**Safeguarding and Legal issues**

AI avatars in e-learning and professional settings must follow safeguarding policies to ensure content remains, ethical, appropriate, and safe for users. These measures help to prevent issues like reinforcing harmful stereotypes or misusing personal data. Legal risks include copyright infringement, deepfake misuse, and liability for AI-generated content.

AI avatar systems rely on processing various user inputs, such as voice, text, and facial features, to create interactive and engaging experiences. However, this level of data collection raises significant privacy concerns, making it essential for organisations to prioritise data protection. With strict regulations like the General Data Protection Regulation (GDPR) being in place, companies must ensure they manage user data responsibly. This includes obtaining clear and informed consent, securely storing personal information, and being fully transparent about how data is collected, used, and shared.

One of the biggest challenges in using AI avatars is managing the risks associated with handling sensitive data. Potential threats include data breaches, unauthorised access, and even the misuse of personal information, all of which could lead to profound consequences such as identity theft, loss of trust, and legal penalties. To reduce these risks, organisations must implement strong security measures, such as encryption to protect stored data, secure servers to prevent cyberattacks, and strict access controls to limit who can view or modify user information.

Beyond the technical safeguards, organisations should also establish clear policies on data retention and deletion, ensuring that personal information is only stored for as long as necessary. Regular security audits and updates help identify vulnerabilities before they become a problem, while ongoing staff training ensures employees understand best practices for data protection. By taking a proactive approach to privacy and security, companies can build trust with their users while ensuring compliance with legal requirements and ethical standards.

# Future Trends

**Advancing in personalisation**

AI avatars are becoming increasingly more customisable, giving users the ability to adjust facial expressions, voice tones, and even personality traits to align with brand identity or a learner’s preferences. Looking ahead, avatars may evolve to respond in real-time to user emotions, adapting their tone based on engagement levels to create a more immersive and responsive learning experience (Brown S, 2024).

**Emerging Applications**

AI avatars are moving beyond e-learning and workplace training, finding new roles in healthcare, customer service, and virtual collaboration. In mental health therapy, they could provide virtual companionship or assist with patient simulations for medical training. Meanwhile, industries like marketing and retail are using AI avatars as virtual influencers and to personalise the customer experience (Jones & Lee 2023).

**AI Avatar Driven educational storytelling**

AI avatars are transforming storytelling by making learning more interactive. Future developments may incorporate real-time generative AI, allowing avatars to adapt narratives based on learner choices, creating a game-like, dynamic learning experience. This approach could be especially effective in subjects like history, science, and language learning, where storytelling enhances understanding and engagement (Clark & Taylor 2025).

# Results

**Evaluating AI Avatars in Learning: Insights, Challenges and Future Directions**

This study explored both the positive and negative experiences with AI avatars in training content, gathering insights through informal discussions with managers and a thorough analysis of LMS data.

**What Worked Well**

**On-Demand Learning**

The learners appreciated the flexibility of being able to watch training videos whenever it suited them. This was especially beneficial for accommodating various shift patterns, allowing learners to revisit the content whenever needed to reinforce their knowledge.

**Consistency in Training**

By branding the AI avatars with NHFM uniforms this helped learners immediately recognise that the training was tailored to their specific roles. The use of clear, standardised messaging throughout the videos ensured a consistent delivery of information, reducing discrepancies and confusion.

**Accessibility Features**

By incorporating captions into the training videos this was a game changer for accessibility. Learners who preferred reading along found it especially helpful, and by displaying key terms throughout the video further supported understanding and retention of important points.

**Shorter and Engaging Content**

Both learners and managers highly favoured the 10-minute video format. It offered a time-efficient way to deliver training while still allowing enough time for post-training discussions. These brief sessions saved valuable time compared to traditional in-person training, which often lasted over an hour, this enabled staff to get back to their duties more quickly and be more productive at work.

**Preference Over Live Sessions**

Many learners expressed a preference for AI avatar-led sessions over live training, particularly for complex and sensitive topics like safety. The ability to revisit the content at their own pace allowed learners to absorb the material more effectively, without feeling rushed or overwhelmed.

**Challenges Identified**

**Avatar Appearance**

A small group of learners reported finding the avatars’ appearance unsettling, with some describing them as “creepy.” While this feedback was limited, it highlights the need for further refinement in avatar design to improve user comfort and engagement.

**Voice and Language Issues**

Several of the users found the AI-generated voices unnatural and distracting, which negatively impacted on engagement. This feedback pointed to an opportunity for improvement in voice customisation, by using more natural-sounding voices or offering language options suited to different learner preferences.

**Honest Feedback Barriers**

There were concerns about staff hesitating to provide honest feedback to managers. Although an anonymous paper-based feedback option was available, no forms were submitted, suggesting that employees might have felt uncomfortable sharing honest opinions. More effort may be needed to encourage genuine input and to address any underlying concerns by offering an opportunity to meet with their manager on a one-to-one basis to discuss their opinions. This option will be implemented in the next follow up in 6 months’ time.

**Need for Long-Term Evaluation**

While the initial results were promising, the study emphasised the need for ongoing evaluation to understand the long-term impact. Informal feedback sessions are scheduled every six months, and the learner engagement will continue to be monitored through LMS star ratings and participation results.

**Quantitative Analysis**

LMS data provided valuable insights into the effectiveness of the AI avatar training system:

**Completion Rates**: The training saw an 85% completion rate across 1,063 staff members (Appendix 1) for 37 health and safety training modules (Appendix 2). The top three most-watched topics were:

* **Defusing Potential Conflict and Aggression**
* **Accident Reporting**
* **COSHH (Control of Substances Hazardous to Health)**

**Improved Compliance Tracking**: The digital format report enabled more efficient monitoring of training completions and compliance, streamlining the process, and making it easier to track staff progress.

**Operational Benefits**: AI avatars helped to overcome logistical challenges, such as staff availability and the time constraints associated with in-person training sessions. This flexibility allowed training to be delivered without the need for complex time scheduling or disruption to daily work operations.

**Key Takeaways from Combined Data**

When combining the qualitative feedback from learners with the quantitative data from the LMS, several key insights emerged:

**High Engagement Rates**: Learners clearly valued the flexibility and accessibility that AI-based training offered. The ability to access training at their convenience, without being bound by rigid schedules, significantly increased engagement.

**Room for Improvement in Realism and Customisation**: Concerns about the avatars’ appearance and the quality of the AI-generated voices pointed to a need for improvements. More realistic avatars and customisable voices could enhance the training experience, making it feel even more personalised and engaging.

In conclusion, while AI avatars have shown great promise in enhancing training experiences, continuous refinement and long-term evaluation will be essential to address user concerns and maximise their effectiveness.

**Next Steps and Recommendations**

1. **Build on Existing Strengths**

It is important to continue hosting AI avatar training videos on the LMS, as this platform allows us to track engagement effectively and maintain consistent training delivery. The features that learners have found most beneficial, such as captions, on-screen key words, and the ability to replay videos, should remain in place. These elements have proven to enhance understanding and accessibility, so retaining them will ensure the training continues to meet learner needs.

1. **Address Identified Changes**

By refining the appearance of the avatars is key to making them more relatable and engaging. By conducting further usability testing and gathering feedback before making changes, we can ensure that the design improvements align with learner preferences. Additionally, offering voice customisation options, such as accents or regional variations, would make the training more culturally relevant and accessible to a wider range of learners, improving overall engagement.

1. **Future Research and Improvements**

By exploring interactive features and adaptive learning pathways this will help to take the AI avatar training experience to the next level. These features could increase learner engagement by allowing the training to respond dynamically to individual progress and preferences. Additionally, conducting research to compare long-term knowledge retention between AI-led training and traditional face-to-face methods will provide valuable insights into the effectiveness of these digital learning tools over time.

To continue improving, informal feedback sessions, opportunities to provide written feedback or one to one meetings with managers, should remain as scheduled for every six months, while ongoing monitoring of LMS evaluations will provide real-time insights from learners to inform future adjustments.

By integrating these recommendations, AI avatars will not only maintain their current success but also evolve into an even more effective and engaging tool in digital learning, ensuring an accessible and meaningful experience for all learners.

# Conclusion

**Key Findings and Benefits of AI Avatars**

AI-powered avatar tools, such as Synthesia, are revolutionising content creation by making video production faster, more cost-effective, and widely accessible. These tools are particularly valuable in fields like e-learning, corporate training, and digital communication, where they help deliver content efficiently to large audiences. However, while AI avatars offer significant benefits, it is essential to address several challenges to ensure their responsible use. These challenges include issues of data privacy, misinformation, bias, and ethical considerations, which must be managed carefully (Smith, 2023; Johnson & Williams, 2024).

**Balancing AI and Human Training**

Although AI avatars offer substantial benefits in training, they should not fully replace face-to-face learning, especially in areas where hands-on practice is essential. For example, in clinical procedures, resuscitation training, and fire safety, in-person instruction is crucial for skill mastery, real-time feedback, and ensuring safety. These areas require practical training that AI avatars cannot fully replicate. This highlights the importance of a blended learning approach, by combining AI-driven education with practical training led by experienced professionals to ensure the best learning outcomes (OECD, 2023).

**Implications for Industry and Society – Keeping AI in Perspective**

The integration of AI avatars is reshaping industries by automating repetitive tasks, enhancing learning experiences, and increasing user engagement. In education, AI-driven content can personalise learning experiences and make education more inclusive (Brown, 2024). However, an over-reliance on AI could lead to significant concerns, particularly regarding deepfake misuse and the ethical development of AI. Human oversight must remain central to decision-making processes, ensuring AI is used responsibly and ethically. This underscores the need for strong regulations and governance in AI development, ensuring that technologies like AI avatars do not exacerbate issues related to misinformation or unethical practices (Jones & Lee, 2023).

**Recommendations for Using AI Avatars like Synthesia**

**Adopt a Hybrid Approach**

It is crucial to take a blended learning approach that integrates AI avatars as a complementary tool, rather than replacing human interaction entirely. This ensures that training remains authentic and engaging while retaining the benefits of in-person learning experiences.

**Prioritise Ethical AI Usage**

AI-generated content should be regularly evaluated for bias to ensure transparency and fairness. It is important for organisations to implement bias checks and set clear policies regarding the ethical use of AI avatars (Bender et al., 2021). Transparency in how AI is used builds trust with users and helps ensure content integrity.

**Ensure Compliance with Data Protection Laws**

It is important that organisations adhere to data protection regulations like the GDPR to safeguard user information. This will help prevent breaches of privacy and ensure that user data is managed responsibly (Clark & Taylor, 2025). Data protection should always be a priority when using AI-powered tools.

**Leverage AI for Personalisation**

One of the key advantages of AI is its ability to personalise learning experiences. By allowing users to customise avatars to suit their needs or cultural backgrounds, organisations can create a more inclusive environment, ensuring that every learner feels represented and engaged (Zhou et al., 2024).

**Continuous Monitoring and Improvement**

The regular evaluations of AI-generated content are essential to ensuring its accuracy and reducing the risks of bias or misinformation. Organisations should continuously update training data to reflect the most current and accurate information available (OECD, 2022).

**Environmental Sustainability**

**Energy Consumption and Carbon Footprint**

AI avatars rely on powerful technologies like machine learning models, natural language processing (NLP), and computer graphics, all of which require substantial computational power. Understanding the energy demands of these technologies is essential to managing their environmental impact. Here are a few key factors:

* **AI Training vs. Usage**

Training AI models, such as those used for text-to-speech and facial animation, consumes massive amounts of energy. The computational resources required for these processes can be equivalent to powering entire cities. However, once these models are trained, generating videos requires significantly less energy, making their ongoing use more sustainable (Merriman, 2024).

* **Cloud-Based vs. Local Processing**

AI avatars hosted on cloud data centres contribute to carbon emissions, depending on the energy sources powering those centres. Running AI locally can reduce transmission costs but demands high-performance hardware, which also has its own energy costs (Macon-Cooney, 2024).

* **AI vs. Traditional Video Production**

AI-driven video production reduces the need for physical equipment, travel, and other aspects of traditional video production, which can be resource-intensive. However, the sustainability of AI in video production depends on the efficiency of both the AI models and the cloud infrastructure used (Reuters, 2025a).

* **Growing Energy Demands in AI**

The UK's National Grid CEO has predicted that electricity demand from AI-driven data centres could increase sixfold in the next decade, signalling a substantial rise in energy consumption. By 2030, AI-related energy consumption could account for 1% to 6% of total electricity use in the UK (Macon-Cooney, 2024; Shankleman, 2024).

* **Sustainable AI Initiatives in the UK**

By recognising the environmental impact of AI, the UK government has launched several initiatives to develop more sustainable AI infrastructure and minimise the carbon footprint of AI technologies.

• **AI Opportunities Action Plan**

This strategy aims to create a roadmap for sustainable AI development, positioning the UK as a leader in responsible AI innovations (Department for Science, Innovation and Technology, 2025).

• **Green AI Funding**

The UK government is investing in energy-efficient AI technologies to support its Net Zero goals by 2050 (Macon-Cooney, 2024).

• **AI Energy Council**

One initiative being explored is the use of small modular nuclear reactors to power AI growth zones, helping minimise carbon emissions associated with AI infrastructure (Reuters, 2025a).

These initiatives reflect the UK's commitment to balancing AI advancements with environmental sustainability. By implementing these strategies, AI-driven tools, including avatars, can continue to thrive without exacerbating energy consumption or environmental challenges.

# References

**AP News** (2024*) ‘AI-generated deepfakes in political campaigns’*, AP News, Available at: <https://apnews.com/article/artificial-intelligence-elections-disinformation-chatgpt-bc283e7426402f0b4baa7df280a4c3fd> (Accessed:28 February 2025).

**Bender, E.M. *et al.*** (2021) *On the dangers of stochastic parrots: Proceedings of the 2021 ACM Conference on Fairness, accountability, and transparency*, *ACM Conferences*. Available at: <https://dl.acm.org/doi/10.1145/3442188.3445922> (Accessed: 28 February 2025).

**Brown, S**. (2024) ‘Personalization and emotional adaptation in AI avatars: Future trends’, Journal of AI in Education, 19(2), pp. 25-38. (Accessed: 29 January 2025)

**Clark, D. & Taylor, P.** (2025) ‘AI avatars as educational storytellers: Enhancing engagement in learning’, International Journal of Learning Technologies, 10(1), pp. 44-58. (Accessed: 29 January 2025)

**Colossyan** (2025) Create AI videos | Colossyan Creator. Available at: <https://www.colossyan.com> (Accessed: 10 March 2025).

**Department for Science, Innovation and Technology** (2025) 'AI Opportunities Action Plan', *GOV.UK*, 13 January. Available at: <https://www.gov.uk/government/publications/ai-opportunities-action-plan> (Accessed: 29 January 2025).

**D-ID** (2025) The #1 Choice for AI Generated Video Creation Platform. Available at: <https://www.d-id.com> (Accessed: 10 March 2025).

**Equity** (2025) *Actor’s experience of ai gone wrong with Synthesia*. Available at: <https://www.equity.org.uk/news/2024/actor-s-experience-of-ai-gone-wrong> (Accessed: 10 March 2025).

**Global Witness** (2023) ‘AI-generated is the new fake news’, Global Witness, [online] Available at: <https://www.globalwitness.org/en/blog/ai-generated-is-the-new-fake-news/> (Accessed 25 February 2025).

**Google Gemini** (2024) ‘Google Gemini AI assistant. Available at: <https://gemini.google/assistant> (Accessed 14 March 2025)

**HeyGen** (n.d.) AI Video Generator. Available at: <https://www.heygen.com> (Accessed: 10 March 2025).

**IBM** (1997) Deep Blue. Available at: <https://www.ibm.com/history/deep-blue> (Accessed 12 February 2025)

**Johnson, L. & Williams, R.** (2024) ‘Safeguarding AI-generated content in education: Ethical and legal considerations’, Journal of Educational Technology, 12(1), pp. 15-29.

**Jones, A. & Lee, M.** (2023) ‘Expanding AI avatars beyond e-learning: Emerging applications’, Technology in Industry Review, 22(3), pp. 101-115.

**Krdzic, A** (2024) ‘AI Winter: The reality behind artificial intelligence’, *AIBC World.*

Available at: <https://aibc.world/learn-crypto-hub/ai-winter-history/> (Accessed: 10 March 2025).

**OECD** (2022) Artificial Intelligence in Society 2022. Paris: *OECD Publishing*. Available at: <https://doi.org/10.1787/9789264312012-en> (Accessed: 25 February 2025).

**OECD** (2023) AI in Education: Ethics, Policies, and Safeguards. Paris: *OECD Publishing.* Available at: <https://doi.org/10.1787/9789264315419-en> (Accessed: 28 February 2025).

**ONLIM** (2024) “The History of Chatbots – from ELIZA to ChatGPT” Available at: <https://onlim.com/en/the-history-of-chatbots> (Accessed 17 February 2025).

**OpenAI** (2025) *ChatGPT.* Available at: <https://chat.openai.com> (Accessed: 16 December 2024; 24 January 2025).

**Macon-Cooney, B**. (2024) 'Greening AI: How the UK Can Power the Artificial-Intelligence Era', Tony Blair Institute for Global Change, 16 September. Available at: <https://institute.global/insights/climate-and-energy/greening-ai-how-uk-can-power-artificial-intelligence-era> (Accessed: 29 January 2025).

**Mast, J.** (2024) ‘How can AI personas or avatars improve employee training and onboarding?’, *Whitebeard Strategies*, 8 November. Available at: <https://whitebeardstrategies.com/blog/how-can-ai-personas-or-avatars-improve-employee-training-and-onboarding/> (Accessed: 27 March 2025)

**Merriman, J**. (2024) ‘AI already uses as much energy as a small country. It is only the beginning.’ Vox, 24 March. Available at: <https://www.vox.com> (Accessed: 29 January 2025).

**Reuters (2025a)** ‘Friedrich Merz targeted by pro-Russian disinformation before German vote’, Reuters, [online] Available at: <https://www.reuters.com/world/europe/friedrich-merz-targeted-by-pro-russian-disinformation-before-german-vote-2025-02-20> (Accessed 25 Feb. 2025].

**Reuters (2025b)** 'PolicyWatch: The UK says AI will super-charge the economy. But will it scupper net-zero?', Reuters, 23 January. Available at: <https://www.reuters.com/sustainability/boards-policy-regulation/policywatch-uk-says-ai-will-super-charge-economy-will-it-scupper-net-zero-2025-01-23/> (Accessed: 29 January 2025).

**Shankleman, J.** (2024) 'AI will suck up 500% more power in UK in 10 years, Grid CEO says', Bloomberg, 26 March. Available at: <https://www.bloomberg.com/news/articles/2024-03-26/ai-will-suck-up-500-more-power-in-uk-in-10-years-grid-ceo-says> (Accessed: 29 January 2025).

**SHIFT eLearning** (2025.) ‘AI trends in eLearning and workplace learning’, *SHIFT eLearning*. Available at: <https://www.shiftelearning.com/blog/ai-trends-elearning-workplace-learning> (Accessed: 27 March 2025)

**Smith, J., Brown, L. & Taylor, K.** ‘Deepfakes and Disinformation: The Growing Threat of AI-Generated Misinformation,’ Journal of AI Ethics, 5(2), pp. 112-130.

**Synthesia** (2025) Synthesia. Available at: <https://www.synthesia.io/?r=0> (Accessed: 10 March 2025).

**TechUK** (2023) 'Sustainable AI and the path to responsible innovation'. Available at: <https://www.techuk.org/resource/sustainable-ai-and-the-path-to-responsible-innovation.html> (Accessed: 29 January 2025).

**Zhou, M**., Abhishek, V., Derdenger, T., Kim, J., and Srinivasan, K. (2024) *'Bias in Generative AI'*. Available at: <https://arxiv.org/abs/2403.02726> (Accessed: 25 February 2025).

# Bibliography

**Ball, P.** (2015) ‘The truth about the Turing Test’, *BBC Future*, 24 July. Available at: <https://www.bbc.com/future/article/20150724-the-truth-about-the-turing-test> (Accessed: 13 November 2024).

**Brooks, R.** (2024) ‘Rodney Brooks’ Three Laws of Artificial Intelligence’, *Rodney Brooks Blog*, 29 July. Available at: <https://rodneybrooks.com/rodney-brooks-three-laws-of-artificial-intelligence> (Accessed: 11 November 2024).

**Giusto, S.** (2024) ‘The Rise of Virtual Humans — and What They Mean for the Future’, *TED Talks*, October. Available at: <https://www.ted.com/talks/sara_giusto_the_rise_of_virtual_humans_and_what_they_mean_for_the_future> (Accessed: 13 November 2024).

**Guildhawk** (2025) ‘Defining Safe and Ethical Principles for Digital Humans’. Available at: <https://www.guildhawk.com/blog/defining-safe-and-ethical-principles-for-digital-humans> (Accessed: 10 March 2025).

**G2.com** (2024) ‘Best AI Video Generators: User Reviews from November 2024’. Available at: <https://www.g2.com/categories/ai-video-generators> (Accessed: 13 November 2024).

**Synthesia** (2024) 154 Eye-Opening AI Statistics of 2024. Available at: <https://www.synthesia.io/post/ai-statistics#:~:text=6%20in%2010%20AI%20and,use%20AI%2Dpowered%20voice%20search>. (Accessed: 29 January 2025).

**University of Sussex Business School** (2025) ‘Day 5: Let’s make a video (Avatar) 6 days of AI’. Available at: <https://www.sussex.ac.uk/business-school/news-and-events/festival-of-sustainable-education/6-days-of-ai/day-5> (Accessed: 10 March 2025).

# Appendicies

**Appendix 1: LMS - Completion Rates Data**

A screenshot of a computer

Description automatically generated

**Appendix 2: LMS - Training Module Breakdown**

A graph showing a number of employees

Description automatically generated with medium confidence

# Learning Outcomes, Knowledge, Skills, and Behaviours

|  |  |
| --- | --- |
| **Learning Outcomes** | **Evidence** |
| LO1  Develop an area for investigation and an appropriate research strategy and  methodology. | This investigation is evidenced within the research area of exploring how Synthesia AI Avatar Video software may enhance learning by making educational content more accessible and engaging. This is a focused research topic within the broader field of AI and education.  Secondary research was undertaken by combining both qualitative and quantitative methods to critically analyse the effectiveness of AI avatars in education. |
| LO2  Demonstrate knowledge of relevant theoretical / practical perspectives and  approaches within the chosen research field. | This is explained in the introduction and highlights the level of experience in learning and development. It also discussed how, during the digital degree, the exploration of various software sparked an interest in AI Avatars. To identify Synthesia as the leading platform, comparisons were made with the four main software developers. |
| LO3  Examine information, materials, and experiences, demonstrating skills of  analytical and critical thinking in the formation and articulation of independent  judgments, reasoned arguments, and personal insight. | Examination of information is demonstrated in the results section. Evidence from LMS data provides comparable data prior to the introduction of AI Avatar learning, critical thinking is explained in the results by highlighting, strengths, weaknesses, and areas for improvement. The conclusion reflects independent judgement and personal insights are covered, particularly with reference to future trends, which shows own prospective. Analysis of strengths and weakness also supports reasoned arguments. |
| LO4  Articulate ideas and communicate information comprehensibly in visual,  physical and oral forms applying scholarly and professional  conventions. | This research provides a structure that communicates a clear written format and includes images of data analysis. All research is referenced in the Harvard style and content cited. The bibliography lists sources as part of the research but not included in the study. A 10-minute oral presentation of how the research will be presented to the tutor. |
| **Knowledge** |  |
| K1: The broad range of creative processes involved in creative design, and the importance of being aware of all the principal design disciplines including the different perspectives, approaches or schools of thought and theories that underpin them | The digital design degree has offered learning opportunities to explore a broad range of creative process, including fresh design principles, perspectives, and approaches. It has also offered space and support to practice skills with new software, experiment with various design theories, and understand their practical applications before integrating them into the workplace and sharing skills with colleagues. |
| K13: The legal, ethical, regulatory, accessibility and governance frameworks which affect the development of creative design artefacts and applications and how to apply them | This is explained within ethical concerns where the government framework, GDPR is addressed, accessibility and data breach concerns are provided. |
| K16: How to keep up to date with emerging platforms, environments, and technologies | This evidence is covered in S18 below |
| **Skills** |  |
| S10: Keep abreast of industry developments, creative trends, and innovations, knowing what is emerging, and when and when to act to make cost effective use of new and emerging tools and technologies | Keeping updated with industry developments and creative trends is shown in the research, as AI Avatar technology in education, is a new innovative concept. The investment into this technology, highlights a proactive approach to staying in the forefront of emerging tools, with a focus on sharing this innovative idea with the wider trust to make cost-effective use of modern technologies. |
| S18: Be able to plan and undertake own development and life-long learning to keep abreast of emerging technologies and techniques to review how these are best | The digital design degree has provided the learning to keep abreast of emerging technologies and offered the opportunity of space and support to practice skills with new software before integrating into the workplace and sharing learning with colleagues. |
| B1: A passion for creating content for creative and digital media | The image included within the introduction, is the theme used throughout the student’s assignment submissions. |
| B2: A strong work ethic and commitment to meet the standards needed | This is shown in the format and presentation of the research, reflecting a strong work ethic and commitment to meeting the required standards. Time management is also clear in the structed approach to the research process and timely completion of all tasks. |