Resilience Against Al-generated Disinformation

Designing an educational toolkit for youth resilience against Al-generated extremist disinformation

This thesis presents the design and development of an Educational Toolkit aimed at building the resilience of 15-16-yearolds against AI-generated extremist disinformation. With the rise of generative AI, tools are rapidly increasing in sophistication and accessibility. Malicious actors, mainly extremist groups, leverage these technologies to manipulate, recruit, and radicalise youth through disinformation. Examples include deepfakes, memetic warfare, and AIenhanced grooming. Existing media literacy interventions have not yet addressed these developments, and a digital media literacy tool for this specific target group is still lacking. This thesis aims to respond to this need.

To address this gap, an educational toolkit was designed, combining inoculation theory with an interactive, gamified experience. The toolkit consists of multiple lessons, each paired with a serious game that simulates real-world disinformation tactics in a

controlled and ethical environment. Lessons focus on manipulation techniques such as meme-based manipulation (memetic warfare), source impersonation through AI, and emotionally charged misinformation campaigns.

The lesson structure is guided by Gagné's Nine Events of Instruction and Kolb's Experiential Learning Cycle. One notable feature is a GenAl sandbox: a fictionalised chatbot and image generation interface that lets students experiment with AI prompt creation in a safeguarded setting, supporting learning by doing.

Two prototypes were developed, one using Twine and one through ChatGPT's custom GPT function. A guest lesson at a high school shifted the project's focus toward educational environments instead of standalone serious games. During the lesson, students created AIgenerated memes containing disinformation,



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Committee

Dr. rer. nat. T.D. Dingler Prof. Dr. P.A. Lloyd

Faculty of Industrial Design Engineering

followed by reflection on narrative techniques and emotional impact. A general survey and classroom observation further supported the need for a combined approach of gameplay and teacher-led theory and reflection.

While the toolkit lays a strong foundation, further steps are needed to bring it into practice, including further development of the lesson theory and corresponding serious games, and validation in high schools. Completing these steps would turn the Educational Toolkit from a high-level researchbased solution into a working digital media literacy intervention.

This thesis contributes to the field of design for digital resilience by offering a research-based educational toolkit that addresses the evolving threat landscape enabled by generative AI. It also provides a replicable framework for integrating serious games into digital media literacy education.





Delft University of Technology