ICCECIP 2023

From descriptors to instructions in ESP: material design with the newest technology of the subject Security Technology English for students of Critical Infrastructure in the light of MOP

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Requirements regarding the coursebook and course material:

Validity and authencity:

- Engineering sciences (mechanics, mechatronics, informatics)
- Disaster management
- Fire protection, health safety
- Biometrics
- Economics, business management

ESP applicability:

- Target level
- Methodological freshness versatility

Global Language Levels

- **C2** Can understand with ease **virtually everything** heard or read. Can summarise information from different spoken and written sources, reconstructing arguments and accounts in a coherent presentation. Can express him/herself **spontaneously, very fluently** and precisely, differentiating finer shades of meaning even in more **complex situations.**
- **C1** Can understand a **wide range** of demanding, longer texts, and recognise implicit meaning. Can express him/herself fluently and spontaneously without much obvious searching for expressions. Can use language flexibly and effectively for social, academic and professional purposes. Can **produce clear, well-structured, detailed text** on complex subjects, showing controlled use of organisational patterns, connectors and cohesive devices.
- **B2** Can understand the **main ideas of complex text** on both concrete and abstract topics, including technical discussions in his/her field of specialisation. Can interact with a degree of fluency and spontaneity that makes regular interaction with native speakers quite possible without strain for either party. Can produce clear, detailed text on a wide range of subjects and **explain a viewpoint on a topical issue** giving the advantages and disadvantages of various options.
- Action-centered (CERF) – Skills-centered (DIALANG) descriptions

Mediation Skills

- **C1** Can act effectively as a mediator, helping to maintain positive interaction by **interpreting different perspectives, managing ambiguity**, anticipating misunderstandings and intervening diplomatically in order to redirect the conversation. Can build on different contributions to a discussion, stimulating reasoning with a series of questions. Can convey **clearly and fluently** in well-structured language the significant ideas in long, complex texts, whether or not they relate to their own fields of interest, including evaluative aspects and most nuances.
- The criticism of CERF: lack of level descriptors and subskill descriptors for mediation
- The omission of mediation in written language examination decreases the validity of the whole test paper (Dévény) – the theory and practise of Hungarian language testing should be rethought
- e.g. UNIT E

Productive Language Skills – *Oral* performance – Methods and Trends

- **Tech trends**:
  E-learning market in 2021: 315 Bn USD, growing by 20% annually. Technology-rich modes: gamification, AI, Big Data, cloud-technology, IoT, CALL, MALL, VR – raise dopamin production (point scoring, etc.)
- **Soft skill training**:
  business management, public speech, speaking and leadership skills
- **Nano-learning trend**:
  prompted by the decreasing attention span: bite-size exercises, e.g. Babbel, Duolingo. (Gen Z: 1.3 mp) But Millennials: if the topic is engaging enough, long term attention span can be achieved, if the visual experience and the storyline is perfect
- **Lifelong learning** – teacher soft-skill development, continuous self-improvement

Productive Language Skills – *Written* performance – Methods and Trends

AI: instruments and technologies enable quick testing and marking, the design of personalized lessons

Writing to learn: cursive is the tool of teaching – Finland vs. China (Muller and Oppenheimer: students taking notes with cursive handwriting attain far better results in cognitive and conceptual skills)

The world of work:

Writing for computers – abstract, analysis, synthesis- the computer creates it. Avoiding plagarism softwares.
Writing in coding – using logical relations such as in programming languages

Digital writing – OECD: those, who use the computer for reading aquire a more developed digital writing skills set, too (except for video games), e.g. Emoji ☺

Cambridge: samples, self-assessment

Receptive Language Skills – *Reading* performance – Methods and Trends

- **Meta-analysis** – 50 studies about general instruction strategies. Traditional: in case of any context, practice the same skill set, e.g. What is the main idea of the text? – universal application, result: the hitherto READING INSTRUCTION is not in line with the one proven to be effective. Multilateral: main idea, context, structure, retelling. With or without backgound knowledge? Isolated skill development does not work! Teach main idea? Write main idea!
- **COBRA** (Content-Based Reading Approach) or **CBI** (Content-Based Istruction) integrate subject teaching with the language of instruction – the closest connection to ESP principles, student-centered, facilitating critical thinking (set the stage, provide an input, guide practice, extension activity, theme, topic, thread, transition)COBRA: ELL and LD students have 5 goals: background knowledge, learning experience, vocabulary enrichment, comprehension and study e. g. UNIT B SURVEILLANCE

Receptive Language Skills – *Listening* performance – Methods and Trends

- **Top-down approach** (comprehends overall meaning, instead of decoding, deciphering. General and adequate response)

  e.g. UNIT 1 BASICS

- **Bottom-up approach** (morphemes, words, collocations – based on segments the meaning is constructed often lacking context – e.g. reconstructing a gapped text)

  e.g. UNIT: FIRE PROTECTION

Why do we need change?

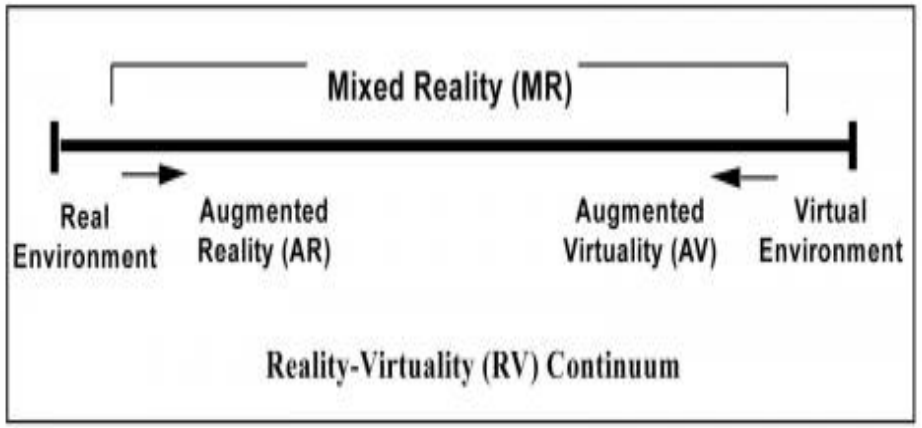
This is how Gen Z looks like…… ☹

Methodologies

- Our colleagues use the ICT platforms to create competitive spirit, and enhance motivation i.e.: Mentimeter, Quizlet, Quizzes, Kahoot, Redmenta, Padlet, Wordwall, BigBlue Button, Moodle, Classroomscreen, Wordwall, Quiz Show, Café method, Mindomo (mindmap), Edpuzzle, Word art etc.
- There are two more methods: the AR (Augmented Reality) and the HY-DE-model: it influences the hyper attention to deep attention by multitasking effects (images, sound, video, ppt and subsequently comes the teaching material (deep knowledge).

Augmented Reality

- AR is still a dynamically developing branch of IT
- Physical world – real time – virtual elements (Matuszka, 2012)



Types of AR:

- marker less or location-based AR
- marker-based AR
- superimposition-based AR

(ThinkMobiles, 2019)



The AR method

- The physical world can be extended to a virtual environment by a computer.
- We assign a virtual content to the physical space
- There are 2 types of AR: one with an image, and one without it
- If I hold a tablet on a call image, then either a video will start, or I can see an object in 3D
- Adaptabilities: military purposes, the entertainment industry, for marketing or medical purposes, in addition, for educational purposes as well. Either a smart phone or a tablet is required.

Why could it be effective? In education it was revealed that…

- enhances the collaboration among students
- improves writing skills, and orthography
- challenge
- promotes digital technology
- the technologies like artificial intelligence (AR), virtual reality (VR), augmented virtuality (AV) and Augmented reality (AR) appear and expected on the labour market
- Student oriented education
- 3 D model labelling
- In Hungary, the Stiefel Interactive LTD created the eduARdo software

Why could it be effective? In education it was revealed that…

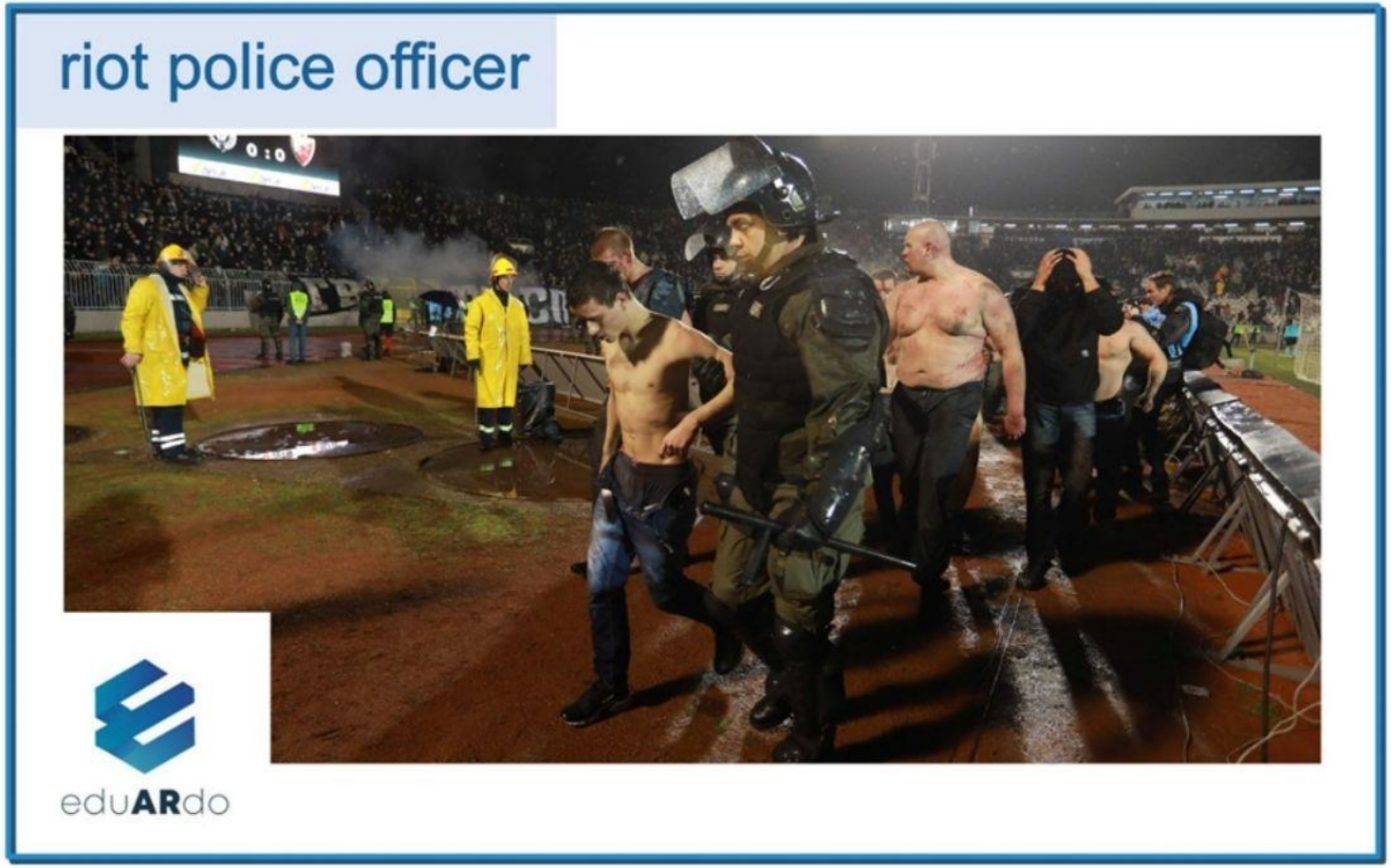
- the cognitive procedures will be on higher level
- provides a motivational basis
- promotes both the project and the team works as well.
- useful for cooperative tasks, for simulation, discussion, debate, presentation, explanation and demonstration as well.
- content production
- 80% of students were motivated (Czékmán-Fehér, 2016).
- the student is active and solves problem as well
- promotes the immersive learning
- game based learning
- **promotes the vocab acquisition**

However…

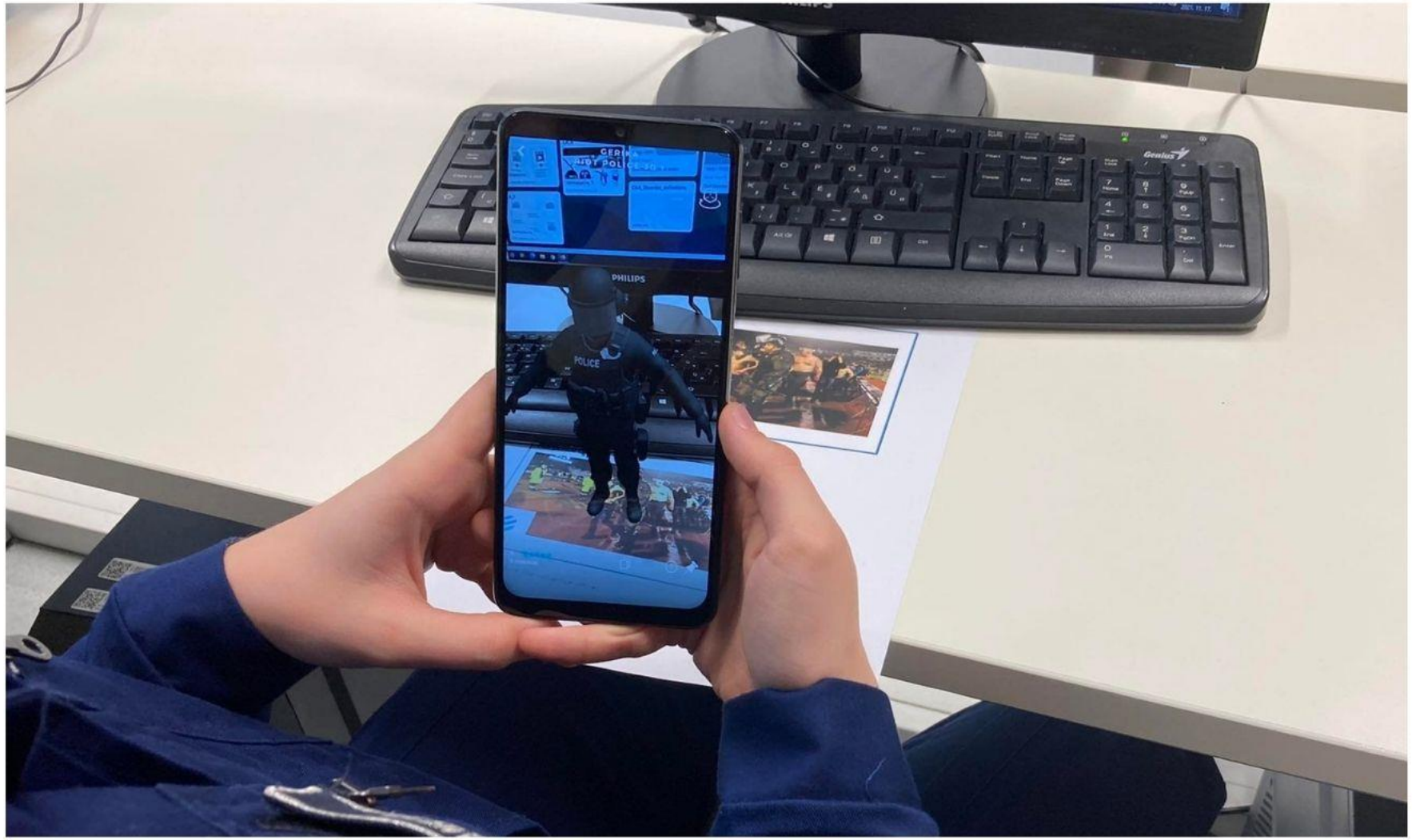
- Reliable Internet and bandwidth are required
- Costly
- It is hard to demonstrate experiments and phenomena

One of our colleagues has tested the effectiveness of the application of the AR on ESP seminar, and she also measured the flow as well, and comparing the pre and post tests, she had good results. (in the topic of civil disorders).

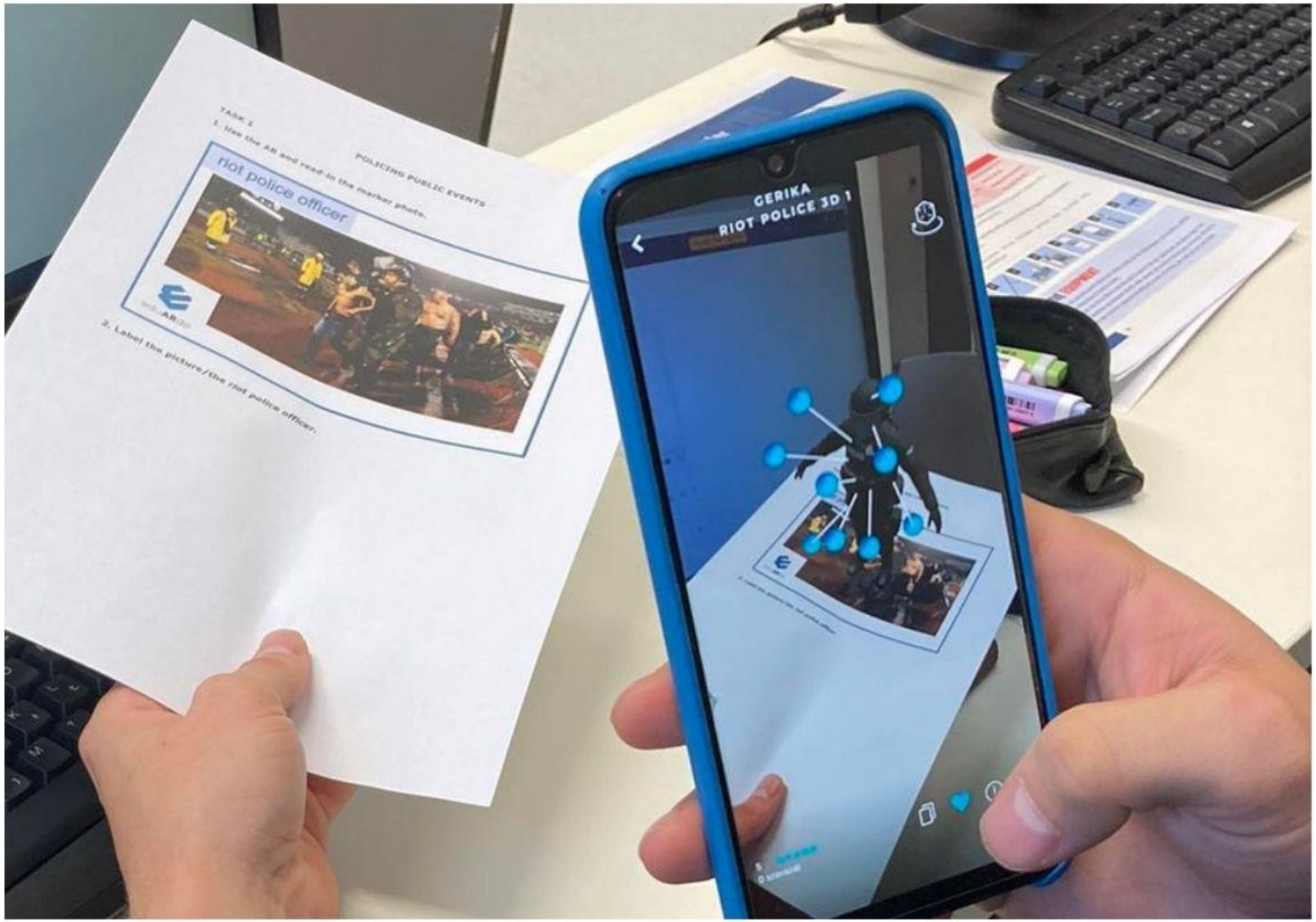
Content consumption - Marker photo 1

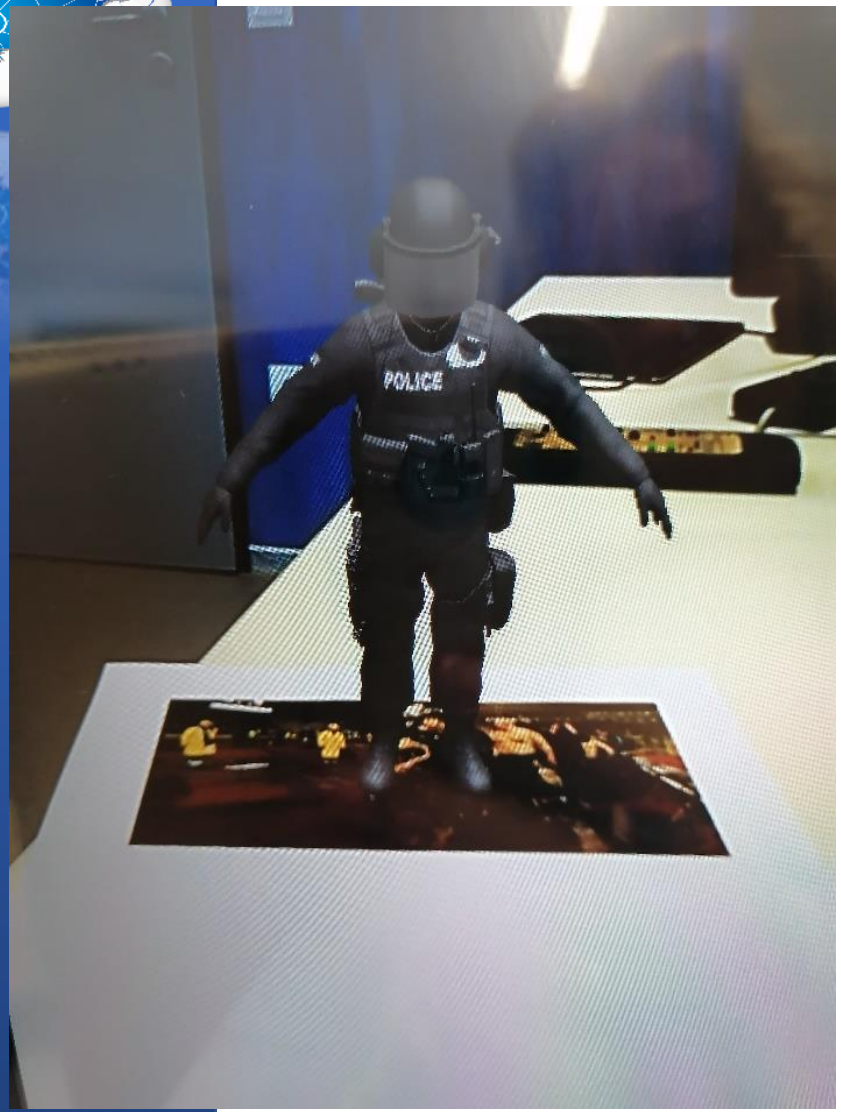


Marker photo - 3D model



Marker photo - labelling the 3D model

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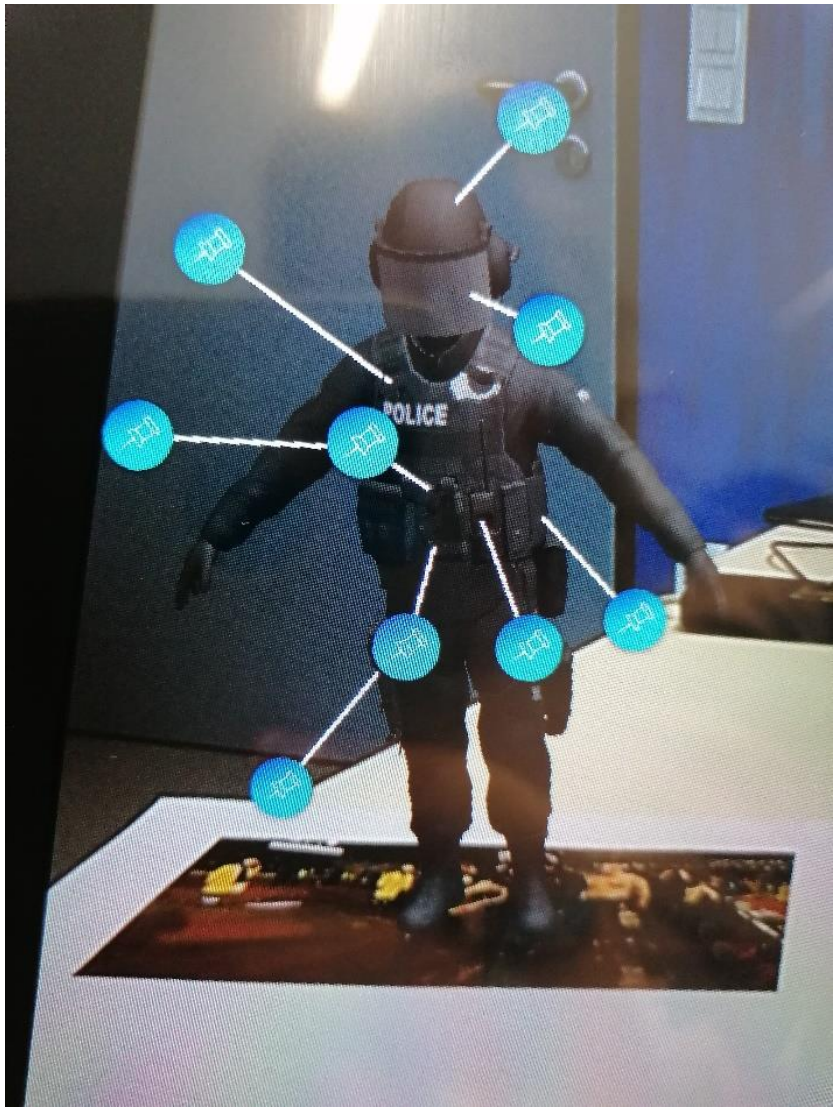
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Thank you for your kind attention!