



UNIVERSITY OF
PUBLIC SERVICE
LUDOVIKA

Research Group for
Experiential Digital
Education

The Use of Augmented Reality in ESP classes for Law Enforcement

eduARdo in ESP classes



eduARdo

Stiefel Interactive Ltd.



PROFFORMANCE - International Higher Education Teacher Award Call 2021/2022

The members of the research group

Dalma Lilla Dr. Dominek - Assistant
Professor, UPS, researcher

Balázs Czékmán - PhD candidate, UD,
ICT researcher

Erna Uricska - PhD student, CUB, curriculum
developer, digital communication researcher

Nóra Barnucz - PhD student, UD,
Assistant Lecturer, UPS, ICT researcher

Erzsébet Dr. Bujdosóné Dani -
Assistant Professor, UD

Erika Gallé -
curriculum developer, Stiefel Int. Ltd.

The application

- Interinstitutional cooperation: 3 universities (UPS, CUB, UD)
- International environment (Online Conferences in Turkey, Krakow)
- Innovative teaching and learning
- Student engagement in the teaching and learning practice
- Innovative physical classroom activities
- Bachelor's level
- Innovative methodology to keep motivation and attention during in ESP classes
- Innovative methodology for instructors to implement new good practices in teaching and learning processes

Short description

- digital competence, vocabulary knowledge, communication skill, flow experience
- classroom research - innovative good practices in ESP classes for LE
- **Aim:** to assess the current level of skills and develop them with the use of AR and the HY-DE model, MET model, the model of Flow Pedagogy

Long description

- classroom research - the application of AR and the HY-DE model - assessing and developing the current level of Ss's LE technical language knowledge and professional communication of Ss in ESP classes
- constructive pedagogy & digital education - supporting creativity, motivation and creative activity of the Ss
- Ss can create their own content independently and develop their creativity - a more successful teaching and learning process can be deployed

Long description

Aim: to create a constructive learning environment where Ss are active participants and not sufferers of the lessons - they can work together and help each other - a variety of tools and information resources to achieve the learning objectives and problem-solving activities.

CMALL - various activities and content development

Long description

- In this application - good practices - AR in the classroom environment
- The good practices of AR focus on using content consumption and creation through active and interactive visualisation.
- It provides Ss with an experience of flow [Csíkszentmihályi 1997] and constructivist environment [Nahalka 1997] where AR - for developing Ss' problem-solving and spatial orientation skills

The introduction of the research

Members of the research group:

- Dani Erzsébet Dr. habil. Bujdosóné: the creator of the HY-DE model
- Balázs Czékman – ICT researcher, UDE, HDTI doctoral school, the expert of using AR
- Dalma Lilla Dr. Dominek: the adaption of Flow test , the model of Flow pedagogy – UPS
- Erna Uricska – curriculum developer, MET model, Corvinus University of Budapest
- Erika Gallé – curriculum developer, Stiefel Int. Ltd.
- Nóra Barnucz – ICT researcher, UDE, HDTI doct. sch., UPS, MET model, the leader of the res. group
- Stiefel Interactive Ltd. – AR

The topic of the research: The application of AR, the HY-DE model based on the theoretical framework (MET model and the model of Flow Pedagogy) in language teaching with special regard to the English for law enforcement.

The research: Classroom Research [AR+ HY-DE model [Dani 2014]

Measurement tools

A) **Vocabulary** testing – self-made test for pre & post-tests

B) **Felder-Solomon's learning style questionnaire** – meets the criteria of goodness:

[1] objectivity, [2] validity, [3] reliability]

C) **Flow test** – adapted by Dalma Dominek (UPS, HU)

Descriptive statistics, correlation studies and difference analyses will be performed during the statistical analyses of the results.

Research

- **Theoretical background:** MET model, Mobile Learning (AR), Multimedia (HY-DE model), the model of Flow Pedagogy
- **Classroom Research:** 4*90 min. ESP classes pre-determined & pre-developed topics N= 45
- **Experimental Group1:** with the use of AR, the model of Flow Pedagogy – n=13
- **Experimental Group2:** with the use of AR, HY-DE model, the model of Flow Pedagogy– n=12
- **Control Group:** without the use AR, HY-DE model, the model of Flow Pedagogy– n=15
- **Participants of the classroom research:** full-time Ss, FLE, year of 1-2
- **Conditions of the research participation:** different year; - same teacher; - B2 interm. language exam

An ESP lesson for LE maintained by AR

Part 1

- The 2nd part of the lesson: the 1st task - marker photo - read-in with the AR - 3D model of a riot police officer appears on the screen.
- In the exercise, Ss label the equipment of the riot police officer using the software on their phones, then the checking of the solutions are carried out together.

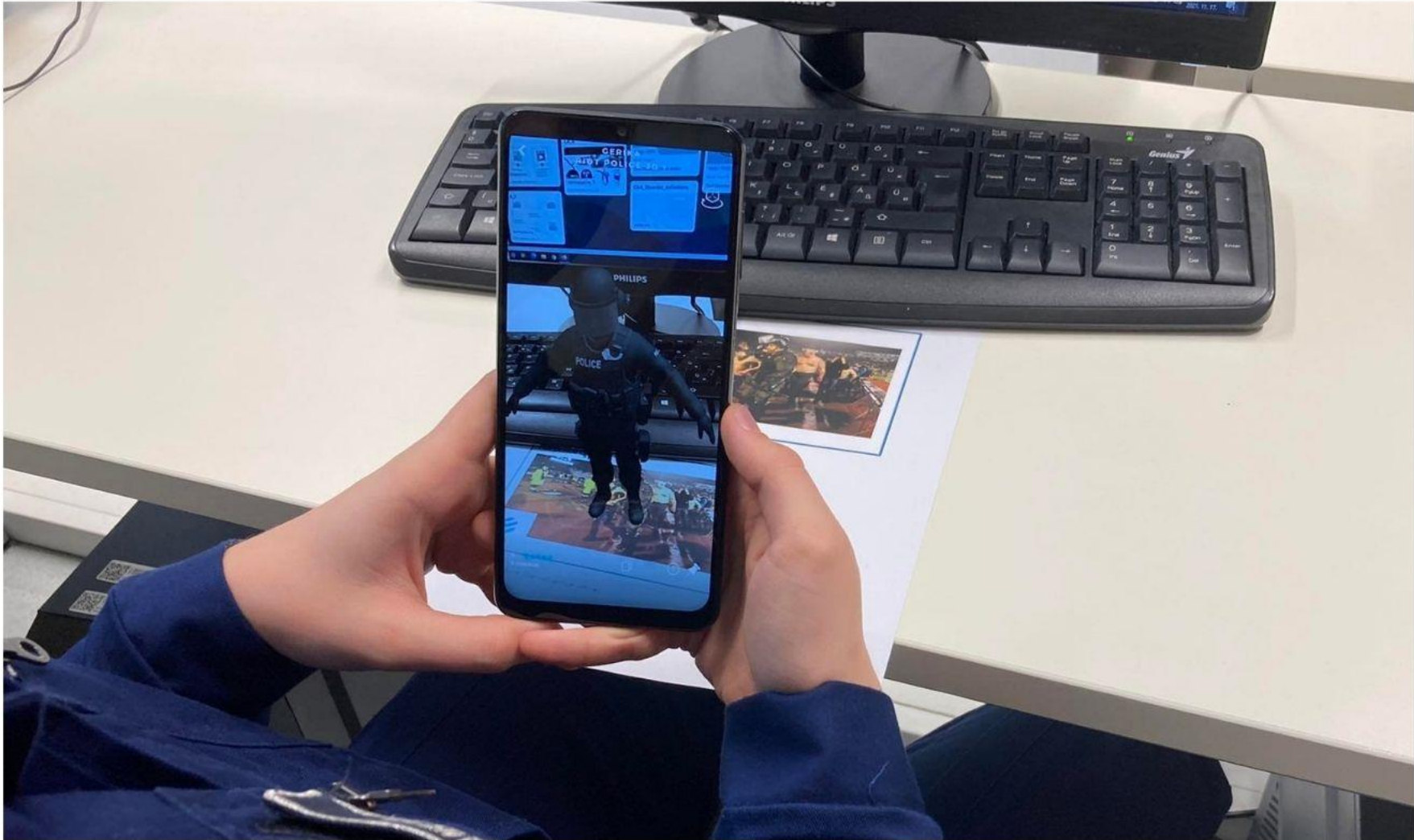
Content consumption - Marker photo 1

riot police officer



eduARdo in ESP classes

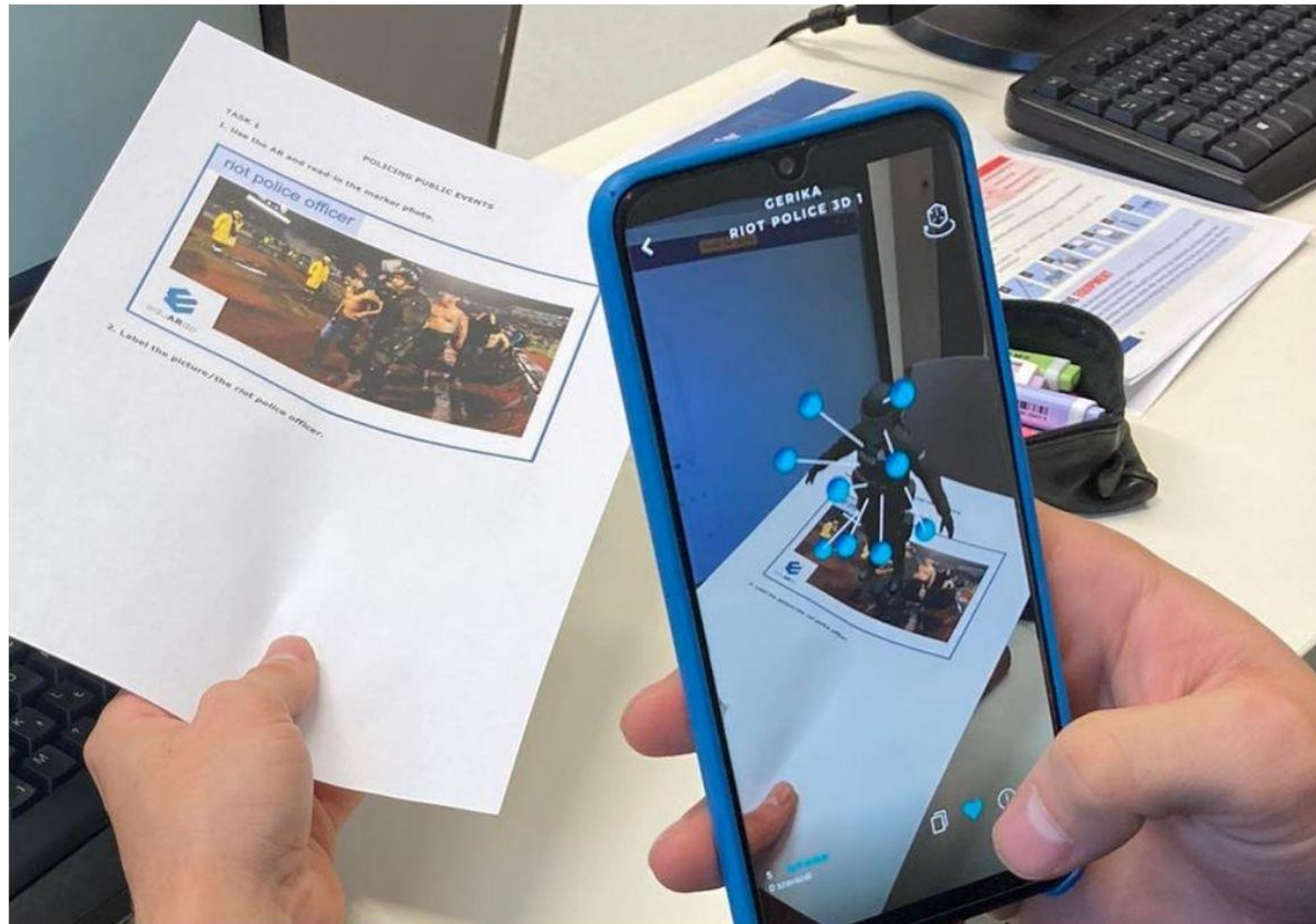
Marker photo - 3D model



PROFFORMANCE - International Higher Education Teacher Award Call 2021/2022

eduARdo in ESP classes

Marker photo - labelling the 3D model

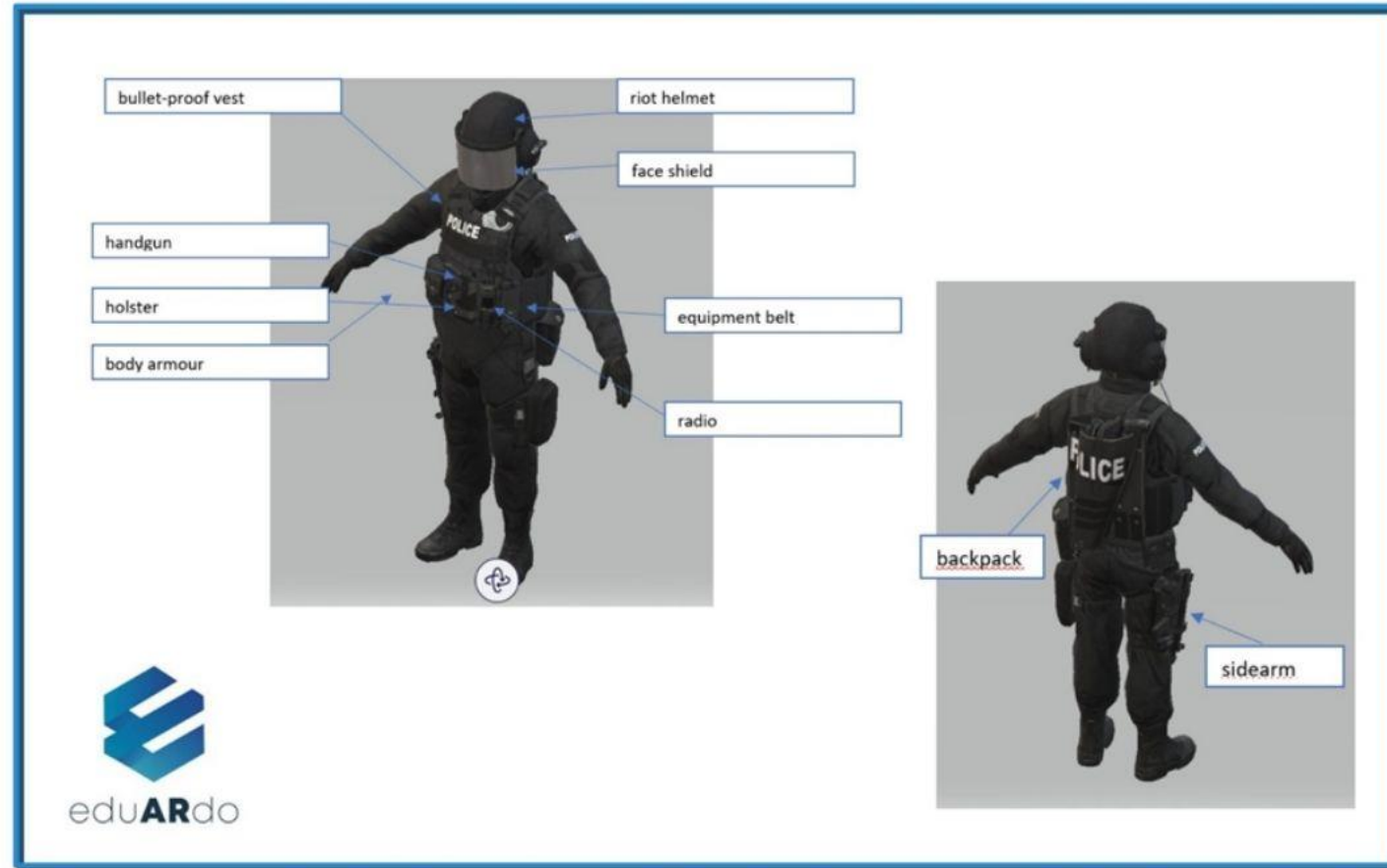


PROFFORMANCE - International Higher Education Teacher Award Call 2021/2022

Part 2

Marker photo 2

The 2nd task: marker photo - read in with the AR - 3 different videos - fill in the gaps - listening



eduARdo in ESP classes

Marker photo - listening comprehension



PROFFORMANCE - International Higher Education Teacher Award Call 2021/2022

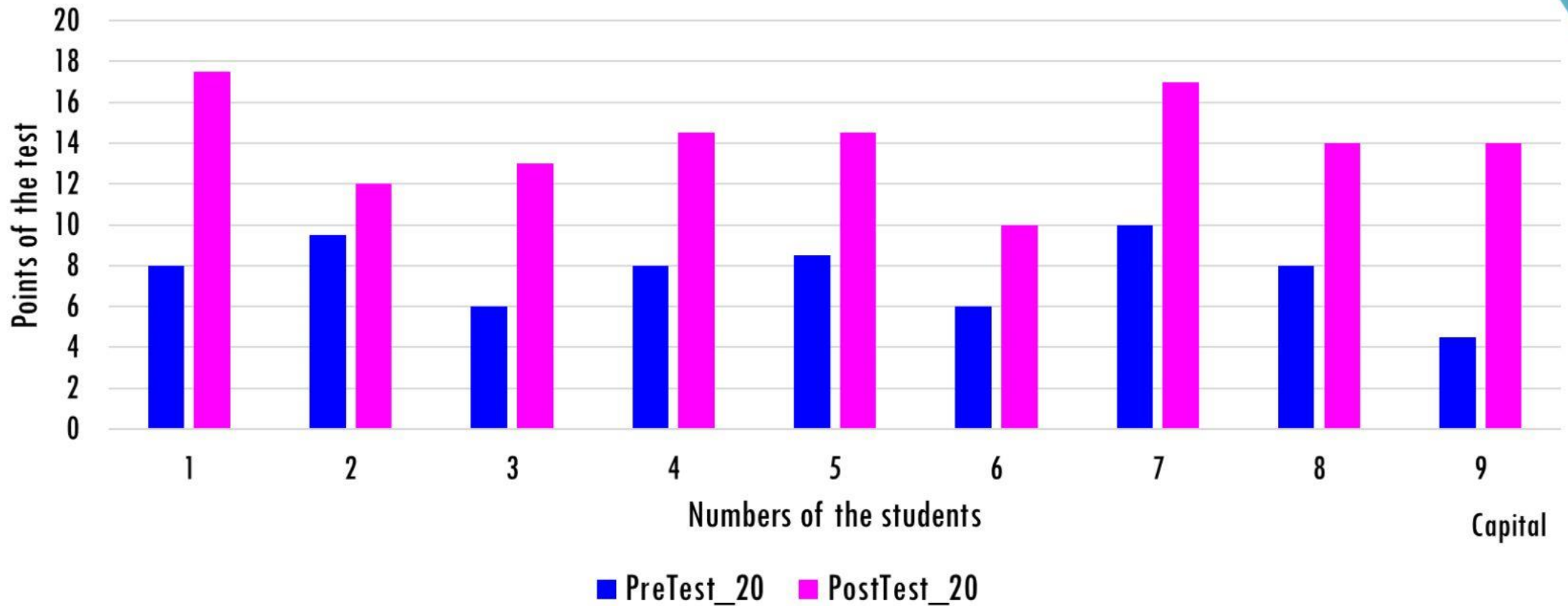
Part 3

Content creation with AR

The 3rd task: content creation

- In the third exercise, Ss work in groups
- Write a short summary about the topic covered during the lesson.
- Record the summary in video format on his/her phone (read out) and save it to the gallery of the phone.
- Take a group-selfie, which is also saved in the gallery.
- marker picture / group, which is taken a photo and saved to the gallery.
- Then they create their own content by logging into the application of eduARdo.
- First, they give a name to the content, and then upload the items saved in the gallery: a marker photo; the group selfie as a cover photo; a short video (max. 1. minute) as their own content. When the content is uploaded, the marker picture is positioned by using the camera of eduARdo and finally the content is created by tapping the button of the content creation.

Results of the 1st test lesson - vocabulary (pre- & post tests)



First results of the Ss' flow-state - 1st test lesson

<i>Pearson and Spearman's test *p<0,005</i>	n	Mean	Percentage	Standard Deviation	Group
Challenge & Competence (C&C)	12	46,92	85,31	6,32	Study Group 1
Merging of Action (MA)	12	36,42	80,93	5,76	Study Group 1
Challenge & Competence (C&C)	11	45,82	83,31	6,98	Study Group 2
Merging of Action (MA)	11	37,00	82,22	4,40	Study Group 2

Student's comment

Justification

Please describe shortly why this good practice is recommended.

I have never tried anything related to augmented reality before. It surprised me because it was better than I expected. I enjoyed the application of it in the lesson and would use this app again.

I wouldn't have thought that a 3D image with labels or a video could be so exciting, and it can make learning new phrases and words faster. The software needs some updates, but still, in this initial stage, it was enjoyable. Nowadays, students do not get easily bored while looking at their phones/tablets, so this app can make learning terminology easier because it can engage the students better than a simple book. It can improve the students' listening skills, as they need to watch videos and solve exercises after, it can develop vocabulary while looking at illustrations and labelling them. It cultivates collaboration skills as students need to work in a group. We can learn the topic whilst summarising it, making a short text about it, recording it, uploading it to the software and connecting it to a picture that we could choose.

In summary, this app can be useful in classes and make learning easier. I would recommend it to

Dorottya Takács, student, UPS FLE

Positive results of the research

- The development of general, communicative competencies for the communication in English;
- The development of the features of the digital competence
- The development of the Ss' motivation, creativity and higher attention during the lessons
- **The research can be a guide:**
- Ss feel comfortable in such a digital environment where they are challenged;
- They are driven to think, solve problems and collaborate
- developing the competencies that are essential - labour market and performing police duties

Conclusion

Adaptability, sustainability, promoting

Sustainability:

- Alignment of the good practice with the strategy of the University: the new Institutional Development Plan of the University [hereinafter: IDP] [2020-2025] - increase students' satisfaction with the quality and effectiveness of education.

Adaptability:

- The testing of the use of AR as a good practice can be a good initiative to formulate proposals for the development of English for law enforcement
- to launch efforts to apply them in practice
- AR and its methodology can be adapted regardless of the subject

Promoting:

- to extend the method by disciplines/specializations within and outside the faculty (e.g., other faculties of the University, etc.)
- national and/or international level with the involvement of the partner institutions (public and higher education)

Digitalization and Innovation

- digitalization and innovation are involved at once
- digitalization iAR software works with mobile devices interactively combining the real and virtual worlds in real time. the tool is considered innovative in higher education - classroom research has been carried out related to its impact on students' vocabulary knowledge, communication skill and digital competence

References

GrandViewResearch (2020): Education Technology Market Size, Share & Trends Analysis Report By Sector (Preschool, K-12, Higher Education), By End User (Business, Consumer), By Type, By Region, And Segment Forecasts, 2020 – 2027. <https://www.grandviewresearch.com/industry-analysis/education-technology-market>

Barnucz Nóra (2019b): IKT-eszközökkel Támogatott (Rendészeti) Nyelvoktatás. Magyar Rendészet, 19. 4. sz., 15–31.

Czékmán Balázs (2017b): Mobiltechnológia a tanórán: oktatási tartalmak, oktatást segítő digitális megoldások. In: Fehér Péter és Aknai Dóra Orsolya (szerk.): I. Mobil eszközök az oktatásban konferencia. Válogatott tanulmányok az I. Mobil eszközök az oktatásban konferenciáról. Debreceni Egyetem Kiadó, Debrecen, 249–254.

Dani Erzsébet (2014): A kétfázisú HY-DE-modell: a hiper- és mélyfigyelem fázisváltásai a katedrától a hallgatói önfejlesztésig. Informatika a felsőoktatásban 2014 konferencia. <https://bit.ly/2XWlvHI>

Dominek Dalma Lilla: Creativity in higher education through the flow channel BELVEDERE MERIDIONALE: 33 4 pp 5-12 (2021)

Hsiao, T. Y. és Oxford, R. L. (2002): Comparing theories of language learning strategies: A confirmatory factor analysis. Modern Language Journal, 86. 3. sz., 368–383.

Oxford, R. L., Cho, Y., Leung, S. és Kim, H. J. (2004): Effect of the presence and difficulty of task on strategy use: An exploratory study. International Review of Applied Linguistics, 42. 1. sz., 1–47.

Paivio, A. és Desrochers, A. (1980): A dual coding approach to building memory. Canadian Journal of Psychology, 34. 4. sz., 388–899. DOI: <https://doi.org/10.1037/h0081101>

Uricska Erna (2020): Közösségi rendészet – közösségi oldalak: Elméleti háttér és a rendészeti digilektus fogalmának bevezetése. Magyar Rendészet, 20. 2. sz. 153-168.

THANK YOU FOR YOUR ATTENTION!

Nóra Barnucz

barnucz.nora@uni-nke.hu

Dalma Lilla Dr. Dominek

dominek.dalma.lilla@uni-nke.hu

Erna Uricska

uricska.erna@gmail.com

Balázs Czékmán

balazs.czekman@gmail.com