

Experiences of digital education from the students’ perspective

According to some literature about communication in a target language, digital competency and creativity are highly important, and achieving this is exceedingly feasible with the methods employed in experiential education. The aim of the present study was to identify the advantages and disadvantages of the online and offline digital education of students at the University of Public Service (hereinafter: UPS) in Budapest, Hungary, utilizing planned experience-based research. The relevance of the research covers two independent and separate quantitative research themes: 1. digital education during the first period of the coronavirus pandemic; and 2. online quantitative exploratory research. The results of the research support the planned experience-based research and confirm it is suitable for measuring the “flow state” of students, where flow is the optimal state where someone is fully engaged in a task at hand with little distraction. It was revealed that students can reach a high flow state when participating in a digital learning environment, which facilitates high motivation to participate in the lessons and has positive effects on the development of the students’ communication and digital competences.

Keywords: *digital education, flow, multimedia, experiential education, social network sites, higher education*

Author Information

Dalma Lilla Dominek, University of Public Service, Faculty of Public Governance and International Studies, Department of Social Communication, Assistant Professor
<https://orcid.org/0000-0002-8460-640X>

Nóra Barnucz, University of Public Service, Faculty of Law Enforcement, Department of Foreign Languages for Specific Purposes, Assistant Lecturer
<https://orcid.org/0000-0001-7832-3465>

Erna Uricska, Corvinus University of Budapest, Doctoral School of Sociology and Communication Science <https://orcid.org/0000-0002-5371-0650>

László Christián, University of Public Service, Faculty of Law Enforcement, Department of Private Security and Municipal Policing, Associate Professor, Head of the Department, Vice Rector <https://orcid.org/0000-0001-9809-4890>

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1. Introduction

One of the most important tasks of higher education is to develop students' competences that can be used in the labour market, particularly students' active language abilities. Such language skills development is essential at all national and international institutions of higher education. In order to develop these skills, teachers commonly aim to use the flow channel in education (Csíkszentmihályi 2010; Dominek 2021a). Here, "flow", such as in the saying "in the flow" (asking to someone being "in the zone"), is a mental state in which a person is totally absorbed in the task at hand, and where that person has an energised focus and full involvement in the task to the point where they can lose track of both time and self. In the teaching context, when students do not perceive spending time in the lesson or focus on the environment surrounding them in the class, they can get into the flow channel, and then teachers have a great opportunity to develop their creativity by grabbing their undivided attention and engagement (Dominek 2021b).

The purpose of this study was to identify the advantages and disadvantages of online and offline digital education according to the students' perceptions as part of a planned experience-based research. Its theoretical background and the role of multimedia and mobile devices in education have already been published (Barnucz and Uricska 2020, 2021). In this paper, first we present the theoretical background, giving the definition of the concept of flow and its relevance in education, and second, we present the qualitative and quantitative results of our study into the effectiveness of digital education delivered online and/or offline.

The theoretical background and research introducing the experiences of digital education from the perspective of students largely confirmed the relevance of the planned research. In the near future, we aim to carry out classroom research by creating a digital and multimedia-based environment with the application of augmented reality (AR) in line with prior literature (Czékmán 2017a; Aknai, Czékmán, and Fehér 2021) and considering the HY-DE model (an acronym derived from *HY*per and *DE*eper attention, as outlined in Dani 2014) in the classroom. The research cohort comprised students at the Faculty of Law Enforcement, UPS (hereinafter: FLE) who were studying English for law enforcement. The purpose of the research is to assess and ultimately improve the level of the students' digital and verbal communication and vocabulary knowledge in the framework of English for Specific Purposes (ESP) classes. In addition, the pilot research also focuses on the development of the flow state in students.

2. Multimedia – Mobile Learning – Flow

The language learning methods mentioned above can be applied in *multimedia environments*, which are highly prevalent in today's education system. In terms of the effect of multimedia on learning foreign languages, Mayer (2001), based on Wittrock's

generative learning theory and Paivio's dual coding theory (Paivio 1969; Paivio and Desrochers 1980), stated that memory and cognitive abilities have an effect on sensory impression. According to such theories, when students use both verbal and visual systems, they can code the information they are given, and the information that they have gained is then learned and stored in their long-term memory. In contrast, when students use only the verbal system for learning, it is less likely that the gained information will be stored in their long-term memory. A curriculum built on multimedia can decrease the pressure on the memory, and this has been found to be particularly important in the acquisition of a foreign language (Zhongyuan 2013; Teng and Zhang 2021).

Not only multimedia, but *mobile devices*, such as tablets and/or smartphones, are also effective tools in this system (Czékman 2017b). National and international researchers agree that "mobile learning" means those learning materials and experiences that are available anywhere and at any time, but it is important to remember that "*mobile learning is an activity controlled not by technology but by students*" (Turner 2012). Thanks to the use of mobile devices, there is a possibility to create new mobile learning environments (MLEs) that allow a focus on, among others, thinking processes at an advanced level, the development of 21st century skills, personalized learning environments, and the establishment and maintenance of motivation (McQuiggan et al. 2015), as well as for taking advantage of compensating effects for overcoming social disadvantages.

Just as these methods described above have been applied in the field of environmental education, similar positive results could be achieved in ESP classes for law enforcement. The target categories in environmental education at the individual level that have been studied in the literature include an openness to facing problems (i.e. the use of metacognitive models during language learning by Chamot, Uhl, and El-Dinary 1999; Barnucz and Uricska 2021), and developing appropriate knowledge and skills, and a proper attitude, and active participation (motivation), as well as the sustainability of the whole production and consumption system at the level of societies (Dominek 2021c). In this context, the development of target categories in environmental education can also be realized in a multimedia environment and the experience of "flow" can be expected to energise the learning process. It should be mentioned that flow is not directly proportional to happiness, and we look to positive psychology that deals with the science of happiness for a greater understanding of this. In positive psychology, the "PERMA" model, in which there are five different factors (1. Positive feelings, 2. Engagement, 3. Relationships, 4. Meaning, and 5. Achievements) that are building blocks that contribute to a person reaching a state of wellbeing and happiness (Dominek 2021d). Flow is a part of this psychological research area. When students experience a state of flow, they exclude the environment and time factors around them. During their activities when they are in the flow, the students can carry out intense work, which means they can address challenges and find a balance, while they are able to enhance their skills through their increased focus, including their motivation, patience, creativity, problem-solving, independent thinking, to reach optimal peak performance.

The concept of flow derives from the theory of creativity (Dominek 2021d). According to Rhodes' (1961) theory, there are four aspects that influence creativity, often called the four Ps: the person, the process, the press (i.e. the external environmental effects), and the product (i.e. the end results). Creativity can be developed, and this is the essential point where the theory of Csíkszentmihályi's flow is derived from (Dominek 2017). In his work "Flow", the author explained that when people experience a high degree of joy, their concentration can better focus on a challenging task, and they can achieve the perfect experience at this point. Csíkszentmihályi's research (2010, 2015) also addressed how ordinary people experience flow mostly during their work. Work can become a real creative activity by providing the right experience for a person. New feelings and desires can be formed by ordinary people through their experiences, while immersion in variety, the exploration of novelty, and taking part in the decision-making process can be experienced by people through work. Such experiences can lead to great happiness in people. Csíkszentmihályi (2015) wrote how it is possible to reach an optimal experience when limits and barriers disappear, and people can tap into a new dimension. Boswijk and co-authors (2007) wrote about the richness of experiences and stated that the most important thing in an individual's life is to gain experience. According to Csíkszentmihályi, people can exceed the things expected of them when they are in the flow channel and they can gain such experiences that they may not have expected before (Dominek 2020).

As opposed to this, some studies prove (e.g. Brown 1994; Kelemen and Talabér 2014) that the language learning process is not considered an ideal experience for language learners in several cases. It has also been proven that there exist breakpoints in the development of communication in a target language, which can have both psychological and pedagogical reasons. According to national and international research (e.g. Dicheva et al. 2015; Niyetbaeva et al. 2016; Borszéli 2019; Molnár and Uricska 2019; Barnucz and Fónai 2020), while there is a wide variety of pedagogical reasons for such breakpoints (i.e. the lack of appropriate methodology of the teachers, low institutional infrastructure, etc.), the psychological reasons for breakpoints can be derived from a lack of the development of creativity (Dominek 2021a). In our earlier research into students' level of creativity in higher education, with a cohort of 3509 students, we found that the strongest components of the students' creativity were playfulness and humour, while the weakest characteristics were nonconformity and impatience (Dominek and Ceglédi 2021).

Overall, according to the literature, we can say that creative-based pedagogy is indeed able to get the participants in education into the flow channel. Consequently, the pedagogical model of flow can be an effective method for promoting creative-based learning. Given this, Dominek's new educational model, the flow-based pedagogical model (Dominek 2022), which includes and involves creativity, flexible thinking, playfulness, humour, and brainstorming, would be a valuable tool to integrate into higher education to improve students' learning. Her empirical results show that when teachers use these elements, the students can get into the flow channel (Dominek 2020, 2021c).

3. Introduction to the Research: Methods and Sample Cohort

The relevance of the present research is given by two independent and separate quantitative research studies involving the students of UPS. The aim of this study was to prove the relevance of the research built as part of the planning of the curriculum for the development of vocabulary and digital competence in a student-centred learning environment (see in the introduction of the planned research) (e.g. Wurdinger and Carlson 2009; Wurdinger and Allison 2017). We would like to contribute to the strategic objectives of the Creative Learning Program of UPS, including the realization of a pedagogical, methodological change in education concentrated on the effective development and evaluation of students' abilities, the mentoring of the individuals' ways of learning, and the maintenance of the professional communities built on the individuals' professional knowledge. We intend to join the direction of the pedagogical development along with the objectives we mentioned above and the three principles of the Institutional Development Plan (2020–2025) of UPS, namely *community learning – creation – individual development*.

- One of the research studies (hereinafter: research into digital education) observed the experience of digital education among the students during online teaching. An online questionnaire was sent to all the students of UPS (N=5670). The leader of the research was Dalma Lilla Dominek. The individual research took place at UPS between August and September 2021.
- The other pillar of the relevance of the present research was an online questionnaire that included two surveys; one of them observed the role of social networking sites played in language use and in students' obtaining information and doing distance learning during the pandemic period, and the other observed the usefulness and effectiveness of education supported by Internet platforms among the students studying English for law enforcement (N=180).

The research into digital education – based on an online questionnaire dealing with the students' experiences of online teaching and learning – was carried out at the end of the academic year 2020–2021, and at the beginning of the academic year 2021–2022. The questionnaire covered three dimensions. The database contained data from 702 respondents. The first group of the questions measured creativity (Dominek 2021a), the second focused on the students' flow experience (Dominek 2021d), and the third one studied the students' experience of digital education, and the results are presented in the study. During the research, we planned a representative sampling procedure for the students, and thus the results can be considered representative. In addition to other researchers (e.g. Ürmösné and Kovács 2022; Szabó and Buda 2022), we examined what the students think about digital education and how they could acquire the learning material they needed during the pandemic period. Moreover, we asked how they could imagine education in the future. According to our hypothesis, the usefulness of digital education during the pandemic was unquestionable, however, effective knowledge transfer from the instructors requires further methodological development (Sung, Kuo-En, and Tsu-Chien 2016). We also assumed that the students would see the usefulness of digital education mostly

in a flexible and liveable organization of everyday life (Mathes 2019; Soffer, Kahan, and Nachmias 2019).

The questionnaire on the utilization of social network sites in the teaching process covered five dimensions and consisted of 16 questions. We conducted non-full-scale research. The research was carried out in the spring and autumn semesters of the academic year 2020–2021. The self-administered questionnaire was completed by 67 persons. The validity of the research was not influenced by the digital education during the pandemic as various online sources and programmes, digital platforms, and social network sites had also been used in the lessons before the first wave of the pandemic.

The questionnaire for the research into the use of digital platforms covered five dimensions and consisted of 21 questions. The self-administered questionnaire was completed by 68 students. When compiling the questionnaire, we identified questions related to the background information of the respondents, and the habits of the use of the Internet and e-materials. In the research, e-materials were considered as learning materials made on or downloaded from different Internet platforms by the teacher (e.g. flashcards to develop vocabulary). It is a fact that because of the frequent use of Internet-based platforms (e.g. Kahoot, Quizlet, Mentimeter, Padlet) and social network sites (e.g. Instagram, Facebook) in ESP classes, the switch to digital education was more flexible during the pandemic. In this case, we did not plan a representative sampling procedure, and thus the results are not considered to be generalized; however, they are suitable for exploratory research.

3.1. Descriptive statistics of the research

In the research into digital education, the distribution of students by gender was relatively well balanced, whereby 44.3% of the respondents were female, while 55.7% were male. The distribution by age showed that the questionnaire was completed mostly by full-time students, with 42.3% of them between 18–25 years old and 15.8% of them between 26–33 years old. Also, 41.9% of the students attended correspondence training; 7% of them attended courses with any specialization, and 9% of them participated in any training course.

In the case of the other two surveys, the distribution of the students by gender was also relatively well balanced. Regarding the research into the role of social network sites, 46.3% of the respondents were female, while 53.7% were male. Regarding the research into the use of Internet platforms, 44.1% of the students were female, while 55.9% were male.

The distribution by age shows that the questionnaires were completed mostly by full-time students. In the case of the research into the role of social network sites, 83.58% of the respondents were between 18–23 years old, while 11.94% of them took part in correspondence training, and the distribution of their age ranged between 24–34 years old. Also, 4.48% were between the ages of from 35 to 48 years old. The average age of the participants was 21.53 years old. In the case of the research into the use of Internet platforms, the rate of full-time students was 82.4% who were

aged between 18–23 years old, while only 8.8% of the respondents between the ages of 24–34 years old attended correspondence training. The average age of the participants was 22.63 years old.

4. Qualitative Results

In this section, we focus on the students' experiences of digital education during the pandemic based on the open questions of the third block in the questionnaire (see chapter 2). We analyse the manifest contents of the answers with content analysis.

One of the most important results was that 41.7% of the respondents would like hybrid education in the future, that is, a combination of traditional and digital education: *"I prefer digital education in a hybrid way, but in my opinion, face-to-face consultations are also necessary."* *"I would gladly take part in hybrid education in the future in a correspondence training. It is easier to complete when a person has a job and a family [...]."* Only 27.4% of the respondents preferred traditional education, while others (30.9%) imagined their future university education in a digital way.

Overall, 67.4% of the respondents declared that the online teaching and learning during the pandemic had been appropriate at the university, and 63.4% of them would like to continue their studies in a digital way. The following comments verify the satisfaction of the students: *"As it is a correspondence program, and with the introduction of digital education, the transfer of the educational curriculum has become much more effective and more successful, regarding time management. It is accomplished through multiple channels, much more information is available, and the lectures can be watched again, which is impossible in case of traditional education. I am less tired, because I have to travel from the countryside so I can avoid several hours of travelling. In the winter period, I was often late because of the break in the overhead line, freeze or a mechanical failure. There is no chance for that in digital education. It costs less money, because I do not have to pay for fees and accommodation."* *"In certain programs there is no need to be present on lessons, the same knowledge can be given online."* *"Since the introduction of digital education my life has been much more balanced. Now, before the morning lectures I can run or do exercises for an hour on a daily basis."*

The next closed question concerned the quality of the digital lectures and practical courses, and included an open question, which gave the student an opportunity to explain their answer. Overall, 88.6% of the students were satisfied with the digital availability of the lectures, and according to their feedback, they were able to listen to the uploaded lectures online with no difficulties. Based on their arguments, it can be stated that the education was delivered at a high level in the online environment, while the students did not miss lectures, and all the technical conditions well supported the teaching and learning.

In contrast, 55.4% of the respondents were not satisfied with the digital practical courses. According to their feedback: *"Practical lessons of my specialization can rarely be called practical, I would rather call them lectures."* *"In practical lessons, practice and not theory should be in focus."* *"Almost none of my practical lessons have been kept online properly, in my opinion, they should have been kept face to face, if it is possible."*

“Practice cannot be transferred digitally. The main point of practice is that students can do the steps themselves, use machines, devices and so on. It can be presented online like a theory, and it could not be transferred into practice later almost impossible.”

The students were asked to present examples of an appropriate and an inappropriate practice. The students mostly emphasized the importance of ESP classes, from which many examples could be given relevant to our planned research. As one example, some students mentioned that they had been taking part in ESP lessons with the camera and sound turned on, or they had been working in Team-rooms or how it had been good to solve Quizlet tasks. Not only ESP classes but also practical lessons for practising techniques for negotiations were also mentioned. The students worked in pairs in classes, and they had to organize a conference, for example. They also emphasized that it had not been appropriate when the teacher had been talking continuously for 90 minutes without involving the students. In contrast, when students were given tasks that they had to solve together, they were motivated to do the task and to participate in class. Their expectations had been identified in line with the teachers, and thus the questions of flexibility, the expanding of creativity, the use of appropriate and effective communication, and more shared content, videos, interactive tasks (e.g. voting, quizzes in classes) were also important for the students.

The students also expressed their views about their expectations and critical comments about teachers. In their opinion, it is important that *“teachers must be trained to handle online educational programmes properly and professionally. Many of the teachers are still not capable to run the given programmes properly.”* Besides, *“They must be student-centric, they must listen to students’ needs and organize lessons by students’ best interests.”* It is important that teachers *“should be creative, they should not only explain the curriculum, but give practical examples, show presentations to demonstrate the curriculum. They should inform the students about the requirements of tests, assignments and exams in writing, as soon as possible.”* The importance of written notifications was also emphasized by one student: *“Written notification should be compulsory outside of class as well, as some of my peers are unable to attend the class and miss important information that the teacher is given verbally without any written information before and after the class.”*

Last, but not least we asked how suitable digital education was considered according to their experiences. Overall, 70.7% of them were satisfied with it, while one of them said that it was like the *“third world”*, or another one said that *“digital education is a kind of convenience in a broad sense. Lessons for correspondence students last from Friday afternoon to Friday evening and all day on Saturday. It is twice or three times more difficult to be there in the lesson than in case of digital education. Those, who have kids, nurse their parents, live on the other side of the country, are sick at home, have financial problems and cannot pay the fees of travelling and accommodation, they are all grateful for digital education.”*

Moreover, the most successful initiative is summarised in the following paragraph: *“recording and publishing lectures on webinar (can be watched any time); make Probono materials public (outstanding curriculum); the introduction of compulsory use of Moodle both for the instructors of the departments and students (all requirements, curriculums, teams links can be found in one place).”*

And finally, some proposals were also formulated by the students: *“For me, digital education means the 21st century. I do not say that traditional, face-to-face education is out of date, but its extent should be reconsidered and give more space to digital education in correspondence training. If it is possible, please do not take these from students who take part in distance education, but keep them informed. I would also support that the traditional lectures were recorded and they would be available online linked to the Neptun code and the possession of a medical certificate for those students who were absent (sickness, maternity leave, other obstructions).”*

5. Quantitative Results

In this section, the role of social network sites and Internet platforms in language teaching is examined. This section contains the basic statistical results of the two exploratory research studies above, which sufficiently contribute to the relevance of the planned research. A more specific, deeper statistical analysis will be carried out in another study.

The relevance of the research plan (see in the next chapter) is presenting the students' positive feedback in connection with the digital platforms and social network sites used within the framework of ESP classes. In the case of the habits of obtaining information online, 63% of the respondents chose social network sites, 33% read online news sites, and only 4% did not read online sources. In the research into using social network sites in class, 94% of the respondents read some kind of social network sites to obtain information: more than 90% reported using Facebook, 75% YouTube, and approximately 70% Instagram. Social network sites have primary importance for students in obtaining information (Uricska 2022; Uricska and Molnár 2022). The third unit of the survey examined the role of social network sites from the viewpoint of language learning due to the coronavirus, and the new circumstances it prompted. The results show that the use of social network sites resulted in vocabulary expansion both in English and Hungarian. This result was also justified by the vocabulary collection written during the pandemic period (Uricska 2021; Barnucz 2021, 2022).

In connection with the research into using Internet platforms in class, the frequency of Internet use was examined on a five-grade Likert scale (from 1 = not at all to 5 = almost every day). We created a dummy variable in order to make the interpretation easier (0 = never used; 1 = often used). Overall, 97.1% of the students claimed that they often use various online sources in ESP classes. After that, we were interested in what purposes the online sources/curriculums had been used for in the ESP classes. The results showed that they were used the most for practising (91.2%), for vocabulary development (69.1%), for individual learning (63.2%), and for solving online tests and making presentations (54.4%). On the contrary, online sources were the least used for project work (42.6%), tests (39.7%), entertainment (29.4%), and individual project work (19.1%) (note, results all below 50%). The frequency of the listed activities refers to the diverse methods applied in ESP classes and by ESP teachers with many methodological instruments available.

6. Discussion

The aim of this study was to prove the relevance of the classroom research carried out in a digital learning environment with two basic research studies: (1) research into the students' experiences about the digital education they received during the pandemic; (2) research with an online questionnaire, including research focusing on the roles of social network sites in education, obtaining information, and learning habits during the pandemic period and research regarding the usefulness of education supported by Internet platforms. This study presented mostly the students' experiences concerning the digital education they received during the pandemic and consisted of basic statistics of using social networks sites and Internet platforms in education.

According to our first hypothesis, the usefulness of digital education during the pandemic is unquestionable; however, effective knowledge transfer requires further methodological development. Both parts of the first assumption were confirmed, as the majority of the students (60%) thought that the usefulness of digital education is indisputable from several aspects. The students emphasized the easier predictability, better scheduling, family reasons (parenting, nursing elderly parents), lower costs, etc. as particular benefits of digital education. A minority (approximately 30%) would prefer hybrid education.

The second part of the hypothesis was also justified by the result that nearly 90% of the students were satisfied with the digital availability of lectures. Others (55% of the students) pointed out that currently teachers do not have a satisfying toolkit to operate digital education effectively, and because of this, they expressed some dissatisfaction regarding the digital practical classes. The respondents also provided some critical comments, expectations, and suggestions concerning mostly the importance of more flexible teachers' duties, giving information about dates, and the evaluation of tests and assignments.

According to our second hypothesis, the students considered the usefulness of digital education mostly to be in the availability of a more flexible organization of their daily routine. This viewpoint seemed to be verified, as the students reported they were comfortable with the digital education despite the initial difficulties that might have been derived from their inexperience with the unfamiliar situation, and the lack of methodology in place initially.

The descriptive results of the other two research studies presented in the paper (the use of social network sites for obtaining information, the use of Internet platforms in class) emphasize that the key to the development of a country is the quality of the knowledge of its citizens (Hanushek 2019) and to achieve this, the development of 21st century competences in class is essential both in online and offline education. The expectations of the students also verified the demand for developing creativity, innovation, critical-thinking, and problem-solving on the one hand, and for the development of communication and solution-centred cooperation on the other hand (Barnucz and Uricska 2021).

The results show that two essential circumstances must be seen to reach an authentic result in the process of teaching/learning. First, the learning habits of gen-

eration Z (i.e. those born between 1995 and 2000) that have already appeared both in public and higher education have changed compared to previous patterns, and teachers in all forms of education need to respond to this. Second, one of the most important tasks of higher education is to develop the competences of students so that they can use these skills well in the labour market. In fact, establishing the congruence of higher education and the labour market deserves particular attention (e.g. Bócsi 2013; Christián and Erdős 2020; Christián 2022; Christián, Hautzinger, and Kovács 2021), because new positions have appeared that need digital skills (e.g. digital police communications officers) (Metropolitan Police Service 2020). The development of digital literacy and communication is essential (Uricska 2020a, 2020b) to carry out these duties. Although our planned research requires offline education, it contributes to the expansion of the teachers' methodological toolkit. In addition, the research contributes to the suggestions of the methodological development of the ESP language teaching, and can be a good starting point for the creation of a more student-centred learning environment, where students will expectedly feel well in themselves to be able to meet challenges that encourage them to think, solve problems, and cooperate.

7. Future Perspectives

In the near future, we aim to assess the digital competence and vocabulary of students studying English for law enforcement, where the focus will be on the digital/multimedia environment created by applying the AR and HY-DE model in classes. We will try to identify the pedagogical reasons for the breakpoints in ESP teaching and learning with the research, and make suggestions on how to eliminate them. During the research, we will test the tools so that the relevant breakpoints of teaching/learning foreign languages and the development of communication can be recognized and – within the system of each method – we will make suggestions on how to eliminate difficulties (e.g. difficulties with the development in acquiring vocabulary).

In this research, we examined the judgement of the utilisation of teaching English for law enforcement supported by digital devices among full-time students (N=100). Pilot research was carried out in the 2021/2022 academic year at the Faculty of Law Enforcement, but it is an on-going research, and we are planning to expand the research to three other faculties of the university in the following two academic years. The research consists of three steps: (1) classroom research; (2) quantitative research (questionnaire); (3) qualitative (interviews in focus groups, in-depth interviews). The measurement tools are: written pre- and post-tests to test the vocabulary knowledge of the students and a flow-test that is filled out at the end of the test lessons to measure the flow state of the students both in the test and control groups. The measurement is based on a test for experiencing flow that was elaborated by Mihály Csíkszentmihályi, and it has been applied just a few times for measuring the degree of such experience (Szabó 2014; Dominek 2020) because it is difficult to find a more obvious, adequate, and trustworthy procedure for measuring flow.

In our research, we try to answer the question of how the application of AR and the HY-DE model in classes can affect the development of the students' digital competence, communication in a target language, vocabulary knowledge, and the activation of their motivation in class. We also examine whether students can experience flow with a positive psychology in the digital environment, or whether they may be able to reach a higher performance in the flow state. We research what areas of language skills can be developed by digital technology, and how the quick development of information technology can affect language teaching, and the acquisition of ESP. We assume that the digital and verbal communication of the students can be developed due to the involved language learning methods, and that the application of digital technology in classes can affect the motivation of the students and the development of the language skills in a positive way (Barnucz 2019a, 2019b; Uricska 2020c; Uricska and Suták 2022). We reveal that the students who are treated during the research can experience higher flow than those in the control group (Dominek 2020, 2021a).

The responses of the students may reveal a more intensive demand for developing a situated and constructive learning perception and at the same time how to reach a state of flow (Nahalka 1997; Sharma and Gupta 2016).

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