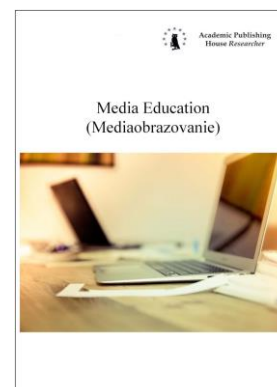




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## Educational E-escape Room as an Educational Method of Media Literacy Training for Future Teachers During the COVID-19 Pandemic

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### Abstract

In the face of the global crisis of the Covid-19 pandemic, the training of future teachers, just like the whole formal education, has mostly moved to e-learning or blended-learning. This also applies to increasing media literacy knowledge, skills and competences.

Media education – understood as developing an informed, critical, selective and comprehensive approach to media, information and digital competences with regard to the multilateral creation of messages and the use of technological tools – has become an even clearer necessity in the age of the Covid-19 pandemic. The global situation calls for new innovative methods and techniques that can be implemented in distance learning.

The article presents studies on the use of a digital escape room in the distance training of future teachers in the field of media competences. The studies apply participatory observation as part of virtual ethnography and analysis of audio-visual works in the form of digital designs of escape rooms made by students of various faculties. The main problem comprises three specific research problems: 1. What thematic content dominated in the escape room designs and how did it relate to the media competence category in *the Catalogue of Media, Information and Digital Competences*? 2. What are the advantages and disadvantages of designing a digital escape room in media education as perceived by the active creators/authors of such rooms? 3. How do passive players rate the potential of the escape room method in extending media literacy?

The results of the exploration and analyses indicate that the educational digital escape room has a great potential for effective increase in media literacy among young people and young adults.

**Keywords:** media education, escape room, Covid-19 pandemic, post-pandemic media literacy, gamification.

### 1. Introduction

The global Covid-19 pandemic and the resulting progressive social revolution in the world of media and technology have clearly shown how many advantages there are in new media and technologies, but also revealed the associated risks. On the one hand, researchers and analysts as well as almost every citizen could observe how in a relatively rapid period of time many economic activities, industries and education areas started to use the media space, including in particular cyberspace – more or less effectively – in order to continue their activities and operations. People in many countries around the world have moved their work, education as well as establishing and maintaining contacts online. This can be called “digital citizenship” (Buchholz et al., 2020).

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However on the other hand, new problems and challenges have emerged; they are of technological nature (e.g. inability to use devices and tools; global overload of internet links); economic and technological nature (e.g. widening the gap in access to technological devices) and social nature (e.g. intensifying the spread of fake news on the Internet in particular in the context of the pandemic; disrupting bonds and direct contacts).

Taking into account especially the last aspect – the social one, it can be assumed that the need for functioning in the world of the media and new technologies in an open, critical, selective but also creative way in terms of knowledge, skills and social competences is particularly immense nowadays.

Media education is seen as a response to this challenge. Hence, who should educate how to receive media messages and how to function in the media reality? The family, school teachers, public and non-governmental organisations and the media themselves are the ones in charge. Experts emphasise how crucial it is to involve numerous entities and institutions (Fedorov, Levitskaya, 2015). Very often this is not the case and it is the teacher who is expected by the society to disseminate media literacy (especially among the youngest users).

This is why it is so important to implement media education issues in formal teacher training programmes. There is currently a high degree of differentiation among countries in the field of higher education and teacher vocational training policies. The ever-changing environment is forcing the future expansion of these issues in education programmes for tutors, educators and school teachers.

Due to the Covid-19 pandemic in Poland from March 2020 up to mid-2021, a fully distance or hybrid model of learning was mostly used to train future teachers at universities (Dubey, Pandey, 2020; Malak, 2020). Consequently, new channels of communication and teaching were introduced (e.g. MS Teams, Skype, Moodle, Zoom, Google Classroom, ClickMeeting) and methods of working with students were instantly adapted to the remote reality.

This also applies to the new faces of media education. This article describes the context of using the method of a digital escape room in media education for future teachers.

The aim of the following studies was to address the research problem, which was formulated as follows: how can a digital escape room be used for training future teachers in media education?

## 2. Materials and methods

Two qualitative test methods were used to address the formulated research problem: participatory observation as part of virtual ethnography (Jemielniak, 2013); analysis of works which comprised audio-visual resources in the form of digital designs of escape rooms

In addition, the literature on the subject was reviewed and a document entitled *the Catalogue of Media, Information and Digital Competences* was analysed. The document was created in 2014 and its authors referred to two scientific models: the model of access to new media by J. van Dijk and the model of “information-wisdom” by N. Postman (Budzisz et al., 2014). The Catalogue contains 10 competence categories, broken down by education stages.

The study was conducted in the academic year 2020/2021, when media education related content was implemented in the curricula of various courses. Students of pedagogy, early school and pre-school education, biology, chemistry, materials engineering, library science and foreign languages philology at the University of Silesia in Katowice (Poland) were introduced to selected aspects of media education (most often in the form of lectures or classes) during remote meetings on the MS Teams platform. At a later stage, they took part in a virtual escape room game. At a final stage, they prepared in pairs designs of their own e-escape rooms using the Genial.ly platform in the broad sense of media literacy.

## 3. Discussion

Game Based Learning (GBL) is an increasingly popular trend in formal and informal education across various areas. Both school (child and youth) and university classrooms as well as in adult training, games are increasingly present and the entire teaching process can be gamified (Rodwald, 2019; Swacha 2015; Vanek, Peterson, 2016). LARP, ARG and escape rooms in the context of education are also the subject of scientific and methodological considerations (Connolly et al., 2011; Maragliano, 2020; Vanek et al., 2016). In 2017, researchers in the UK conducted pilot studies among 13 college teachers and it turned out that the respondents showed a strong interest

in escape room-based education (“EscapeED”) in their own professional practice. The study looked at offline escape rooms (Clarke et al., 2017: 84; Fotaris, Mastoras, 2019).

Researchers emphasise the need to use teaching methods that engage and motivate to act to a greater degree, highlighting the benefits of escape room games from the point of view of the participant – the student (Wise et al., 2018). According to Fotaris and Mastoras, who reviewed scientific literature on escape rooms, this is an innovative method that promotes cooperation, teamwork, commitment and perseverance in the performance of tasks as well as strengthening social relations and learning through group decisions (Fotaris et al., 2019).

An escape room in physical classroom setting is not always possible or optimal. Recently, researchers have also been describing escape rooms based on technology, online space, cyberactivity and network activities (López-Pernas et al., 2021; Makri et al., 2021; Neumann et al., 2020; Vergne, et al., 2020). Researchers in Spain used the Genial.ly platform to teach mathematics in secondary schools and demonstrated that the students were more motivated and rated teamwork higher, while at the same time their qualifications increased (Jiménez et al, 2020).

The global coronavirus pandemic forced a sudden and unprecedentedly intense revolution in remote digital education. The common global challenges faced by both educators and students were quickly recognised (Dubey et al., 2020).

New digitised teaching and distance learning methods were also quickly searched for and implemented. One of them is a digital escape room described below.

Can an escape room of this type be used effectively not only in the training of future teachers, but also as a way of educating about media through media? The comprehensive change and continued flexibility of the media and digital competence development programme have long been promoted (Buckingham, 2009), but the focus on these issues in today’s world seems particularly important.

#### 4. Results

The study was conducted during classes carried out through the MS Teams platform in the academic year 2020/2021. At the first stage, 91 students of various faculties – who are preparing to work in the teaching profession – were acquainted with the issue of media education, including in particular: the essence of the media literacy concept, ways of developing media competences and media operation mechanisms, including opportunities and threats related to the so-called new media and technologies. At the next stage, all the participants took part in solving puzzles in some of the digital escape rooms. The educational method of escape rooms itself was introduced and throughout the project the students had access to audio-visual resources on the subject. At the third stage, the students divided into 3-5 member teams and were requested to prepare an escape room related to any topic and story.

10 escape rooms which fell within the thematic scope of media education in the broad sense were selected for further analysis. In total, 42 people participated in the creation of such escape rooms.

To find the answer to the question raised in the main problem, three specific problems were formulated and the results were presented in relation to these problems.

*What topics dominated in the escape room designs and how did they relate to the media competence category?*

All the analysed escape room designs were prepared by the students in an interactive form on the Genial.ly platform. The task of the participants was to get out of some kind of a labyrinth of the created premises or/and places; to make a passage or complete a mission (e.g. to set the main character free). All the ideas referred to the concept of original escape rooms that operate as a place of entertainment in the physical offline world based on a quest cage or escape room. The adventure or criminal theme dominated in the designs. In order to perform the task, the participants had to solve a number of puzzles and tasks set up in media education issues, most of which applied to the new media. In 60 % of the designs, the story was additionally based on a film motif. The teams that prepared such works got acquainted with the films at the first stage. Thus, the analysis of cinematography was an added value in this case.

10 escape rooms were analysed qualitatively in content terms. The presence of content was assessed in ten thematic areas of media, information and digital competences according to *the Catalogue of Media, Information and Digital Competences* (Budzisz et al., 2014). The analysis results are shown in Table 1.

The table shows the degree of content presence in the following areas of competence:

I. *Use of information* – about the effective search and organisation of information, as well as an assessment of how reliable the sources are.

II. *An individual in the media environment* – about communicating via the media, building an image and acting in online communities.

III. *Media language* – about the meaning of words, picture and sound, as well as functions of media messages and communication culture.

IV. *Creative use of the media* – about creating and presenting the user’s own creativity in the media.

V. *Ethics* – about seeking answers to questions about good, evil and freedom limits in the media.

VI. *Security* – about anonymity, privacy and basic principles for safe use of the media.

VII. *Law* – about the rights of media users and institutions established to defend such rights.

VIII. *Economic aspects of media activities* – about advertising, the value of information, financing and the media market.

IX. *Digital competence* – about the basics of computer use and in particular IT thinking.

X. *Mobile security* – safe use of mobile devices (Budzisz et al., 2014).

**Table 1.** Presence of media literacy content in the analysed escape rooms with reference to media competence categories

Authors’ own titles of media education escape rooms created by students	Thematic areas of competences according to the “Catalogue of Media, Information and Digital Competences” by Fundacja Nowoczesna Polska (“Modern Poland” Foundation)									
	I	II	III	IV	V	VI	VII	VIII	IX	X
<i>Pixel's Adventures</i>	XXX	-	-	-	X	XX	-	-	XXX	XXX
<i>Harry Potter and Cyberspace Secrets*</i>	XXX	X	X	-	XX	XXX	-	-	XXX	XXX
<i>Cybercrime</i>	XXX	X	X	-	X	XXX	X	-	XX	XXX
<i>Kevin Alone in Cyberspace (Home Alone)*</i>	XX	XX	XX	X	X	XX	X	-	X	XX
<i>Harry Potter and Prisoners in Cyberspace*</i>	XX	X	-	-	XXX	XX	XX	-	XX	XX
<i>Do Not Trust Anyone (Casa de Papel)*</i>	XX	XX	-	X	X	XXX	X	-	-	X
<i>Identity Theft (Shrek)*</i>	XX	-	-	-	-	X	XX	-	-	XX
<i>“Cyber hate-saurs” (Jurassic Park)*</i>	X	X	-	-	-	-	-	-	-	X
<i>Lesson Learned by Adam</i>	XX	X	-	-	XX	X	-	-	XX	X

<i>Murderer</i>	-	-	-	-	-	XX	-	-	-	XX
Presence Indicator (PI) – total in the category	20	9	4	2	10	20	7	0	13	20
<p>- no content in this thematic area  <i>X</i> low degree of presence in this thematic area  <i>XX</i> average degree of content presence in this thematic area  <i>XXX</i> high degree of content presence in this thematic area</p>										

\* *Escape room based on a film or series story (in addition to media education, the authors had analysed the film and created a story on its basis for their design)*

Each of the analysed escape rooms contained content from at least two areas. None of them related to all of the 10 categories. The most common content connected with developing media, information and digital competences referred to areas I, VI and X (Presence Indicator PI = 20). In the case of Categories VI “Security” and X “Mobile Security” all 10 designs referred to this category. 9 out of the 10 escape rooms covered topics falling under Category I “Use of information”. Digital safety (DL) is one of the key components of digital literacy, but it is a heterogeneous topic (Tomczyk, 2020) and the educational effects in this field are usually varied.

It should be stressed that the designs which had content relating to security in the media, anonymity, privacy as well as information search and processing rules were mainly connected with the new media: the Internet and mobile phone. Generally, the only link with the issue of traditional media, namely the Triad: the press – radio – television is the leitmotif of the story in the escape room, which is based on a film, often a cinema motion picture.

None of the analysed escape rooms covers educational effects in Category VIII “Economic aspects of media activities” (PI=0). This issue applies to the financing of the media market, advertising mechanisms and the value of information. As results from the observations of the groups during the work on the designs, this may be due to the difficulties which these issues pose to the authors themselves. A very low content presence indicator (PI=2) was also recorded in Category IV “Creative use of the media”. This may be worrying because, given that in the new media environment every user is at present both the recipient and the sender of media messages – the process of creating and disseminating information is extremely important. Media education also includes creating a creative and active attitude among media users. In this case, the tasks in the escape room designs largely ignored this aspect. This may be due to the specificity of the method itself. The creative aspect is strongly present at the stage of creating the escape room (i.e. for the active creator), but no so much for the players.

*What are the advantages and disadvantages of designing a digital escape room in media education as perceived by the authors of the designs (active creators)?*

The analysis of the works was complemented by observation and a group interview of the participants. The researcher was interested in the opinion of the students – the authors of the analysed designs (N=42) on the advantages and disadvantages of a digital escape room as a method in media education.

The positive aspects of the teamwork on the project included:

- broadening their own knowledge of media education;
- improving skills to use technological and digital tools, i.e. escape rooms;
- converging the theoretical knowledge of media education and the use of digital tools in creating the design;
- developing the social interaction online in the creation of a digital design (MS Teams, Genial.ly, Facebook);
- edutainment and gamification which are the essence of the use of escape rooms in education.

According to the respondents, the negative aspects of the study included:

- difficulties of translating selected issues of media education into puzzles and specific tasks in the escape room formula;
- large workload in creating the design;
- the assignment was time-consuming.

*How do the respondents (passive players) rate the potential of the escape room method in extending media literacy?*

In addition to analysing the works and observation of people who decided to prepare the escape rooms aimed at improving media literacy (N=42), all those who participated in the media education classes and resolved the quest in the escape rooms prepared earlier (N=91) were asked for their opinion on the potential of this method. The results are presented in [Table 2](#).

**Table 2** Assessed potential of the effective implementation of a digital escape room in selected areas of media education (N=91)

Range of the method potential	Potential rating in a 5-grade scale				
	Very positive				Very negative
	5	4	3	2	1
<i>Increase knowledge about the media</i>	89 97.80 %	1 1.09 %	1 1.09 %	0	0
<i>Develop a critical and selective attitude towards media messages</i>	79 86.81 %	1 1.09 %	9 9.89 %	2 2.19 %	0
<i>Improve media literacy and creativity</i>	30 32.96 %	25 27.47 %	14 15.38 %	21 23.08 %	1 1.09 %
<i>Stimulate social competences</i>	42 46.15 %	20 21.97 %	18 19.78 %	11 12.08 %	0

At this stage, the players who did not necessarily were at the same time the creators were asked for an opinion. 89 of 91 people (97.8 %) participating in this activity rate it very positively in the context of a method with the potential to raise awareness about the media. 78 students (85.7 %) rate the escape room potential in developing a critical and selective attitude towards media messages very positively. Media literacy and creative attitude as a result of using an escape room in media education are also interesting elements for the researcher. In this case, the opinions were more varied. Although the greatest portion of the respondents rate the potential very positively, i.e. 30 out of 91 (32.9 %), but as many as 27.4 % rate it rather positively and 23 % (21 respondents) rather negatively. 14 people (15.3 %) chose 3 – an average scale grade, and one person assessed the potential very negatively. The opinion of the group as a whole (N=91) is confirmed by practical activities and works that were created at the subsequent stage (N=42), because as mentioned above ([Table 1](#)), the competence category of creative use of the media is found only in two escape rooms and what is more, at a low level. Overall, the PI was only 2 (PI=2).

Those who participated in the escape rooms as participants highly rated the stimulation of social competences, since 42 people (46.1 %) very positively assessed the potential of the method in this respect. This may be due to the need to work together to solve tasks and puzzles. Cooperation as part of gamification is strongly present here. The digital space did not prevent this aspect from being highly scored, as is the case for escape rooms in the offline world.

## 5. Conclusion

At present, media education and media-digital education are particularly important. Media literacy should be promoted among all generations of media and technology users. The Covid-19 pandemic revealed a number of inequalities in access to technologies and the resulting digital poverty. Additionally, it turned out how much countries (particularly the highly developed ones) rely on the

Internet and cyberspace to keep their societies functioning in the educational, political, economic, cultural and social areas. On the one hand, media use technology skills are important, and on the other hand, it is necessary to raise the awareness of the mechanisms of their social operation.

Particularly in view of the latter aspect, at present media education calls for changes and new solutions. The vocational training of future teachers should cover these issues in a global and systemic way. The search for new and creative ways to develop the media competences of teachers themselves and training them how they should teach others in this respect is currently a priority. Modern teaching methods and educational trends such as blended learning, mobile learning, gamification, edutainment or visual thinking ought to become the reality “here and now” and should be included in national media education curricula. The online educational escape room is one example that uses digital tools on the one hand, and gamification and edutainment elements on the other hand. Perhaps this is what the post-pandemic media education should look like.

The analyses show that digital escape rooms may be applied in higher education for training future teachers in the field of media and digital education in a number of thematic areas of this issue.

In addition, the respondents emphasised the potential of the method itself, particularly in extending the knowledge, stimulating a critical and selective attitude towards media messages and encouraging the development of cooperation and social competences during teamwork.

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