

Experiential Learning. Students' Design and Production of Films on Zoom Platform

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Abstract

In the context of organizing online the graduation exams of the university programs, students who completed the study program for the didactic career made films in which they presented a part of their graduation portfolio. We analysed several tools and applications available for free on the Internet, we identified their advantages and disadvantages and we chose the Zoom platform for making these films. The research was focused on two directions: students' experiential learning process and their films. Research results will be capitalized in the future in carrying out other learning activities in the online environment. The experiential learning resulting from making films was considered useful by students in other contexts, including those in which they would help others make films.

Keywords: Digital natives, Higher education in geography, Didactics of geography, Representations

1. Introduction and Theoretical Background

The transfer of university teaching activities in online, from March 11, 2020, generated profound changes in organization of courses, seminars, and evaluation. Teachers and students had to adapt to the new conditions and obtain targeted results by using Information and Communication Technologies (ICT). In university education, full-time activities were ad-hoc experimented on e-learning platforms and other electronic means that were available or were made available at the institutional level. Both at the professors' and students' level, e-learning was practiced through experience in virtual environments, previous research on the educational system in Romania having already shown that using the virtual learning environment in sciences was undergoing steady development (Adăscăliţei et al., 2019; Vlada and Adăscăliţei, 2014; Vlada, Jugureanu and Istrate, 2009). Gradually, the transition was made from sending students educational resources (word documents, PowerPoint presentations and other materials) and tasks via email, to setting up Facebook or Yahoo discussion groups and virtual classes on various elearning platforms (Microsoft Teams, Moodle) and sharing educational content, and also through discussions on video conferencing platforms (Zoom, Google Meet).

Previous studies on the use of ICT by geography students at Babeş-Bolyai University, in Cluj-Napoca, Romania, have focused on several issues. Regarding the use of the Internet, it was found that they allocate very large time resources for various purposes, including professional (Dulamă, Magdaş and Osaci-Costache, 2015), such as using web sources in geography bibliographical research and learning (Ilovan et al., 2018), using visual materials from web sources in studying regional geography topics (Magdaş et al., 2018), for online documentation on emerging subjects in

geographical research (Ilovan et al., 2020a), creating visual representations based on online sources (Ursu et al., 2020).

In addition, research involving students at the Faculty of Geography of the respective university shows that they have high level digital skills (Ilovan et al., 2016). Research indicates that students use various devices to search for information on the Internet (Ilovan et al., 2015), they use various applications to collect geographic data in the field with a smartphone (Magdaş et al., 2018), and they use digital mapping to learn about urban landscape changes in post-socialist Romania (Ilovan et al., 2019b). Many students used various tutorials available for free online to develop the skills of using GIS in initial professional training for territorial planning (Ilovan et al., 2016). Within some projects, they experimented with some applications for representing urban space (Dulamă et al., 2020).

Students had the opportunity to use private discussion groups on Facebook as a context for experiential learning when analyzing cultural landscapes (Dulamă, Ilovan and Buş, 2016), but also for evaluation (Dulamă, Vana and Ilovan, 2016). This type of learning was used in projects involving case studies on various topics: landscape analysis (Ilovan et al., 2019a) and analysis of river basins (Dulamă, Ilovan and Niţoia, 2016).

For the geography specialization, there are specific applications developed in the field in which students learn to analyze the space directly. In these applications, they analyzed urban regeneration in Cluj-Napoca city (Ilovan et al., 2020b, 2020c, 2020d, 2020e), the relief, landscapes, and anthropogenic impact in Iara Valley (Rus et al., 2019; Rus et al., 2020). Geography students from Cluj have benefited from learning contexts in field applications developed in partnership with other universities in other countries and know the learning strategies used by geography (Dulamă et al., 2018).

In Geography teaching and learning, various multimedia products (videos, films, PowerPoint presentations), the Internet and the World Wide Web are used (Richter and Van der Westhuizen, 2005). In the didactic papers, it is recommended to use films in the study of geography (Dulamă, 1996; Dulamă and Roşcovan, 2007) and in acquiring knowledge of the geographical space (Dulamă, 2004). The films were also made by students in order to exemplify the use of educational means (maps, diagrams, photographs, geographical globe) in learning activities with students in geography (Dulamă et al., 2019). In some films made by teachers for primary and preschool education, the way of carrying out an activity by children was presented, under their direct coordination (Dulamă, Magdaş and Chiş, 2020).

In this research, we will analyze the context of online organization for graduation exams of university programs and the realization of experiential learning by geography students who completed the study program for the teaching career and made films in which they presented a part of their graduation portfolio. The research focused on two directions: the experiential learning process made by the student, the students' opinions about this process and the films made by them.

2. Material and Method

2.1. Participants. In making the films, the students from the Faculty of Geography, in Babeş-Bolyai University Cluj-Napoca, who are undergoing the Psychopedagogical Studies Program, in order to become teachers of geography, were involved. 55 students completed the first level of this program and the 3rd year of study of the specialization in the field of Geography (distributed as follows: 26 in Geography of tourism; 17 in Geography; six in Cartography: four in Territorial planning; two in Hydrology - Meteorology). 36 students (distributed on the specializations at the Bachelor level as follows: 29 in Geography of tourism; five in Geography; one in Cartography: one in Territorial planning) completed level II of this program and completed a Master's program in Geography. All students have previously made e-portfolios in all disciplines covered with the first author (each student realised four e-portfolios at first level and three e-portfolios at second level, respectively) and have made documents in Microsoft Word, PowerPoint presentations,

charts in Excel, maps in GIS and others. Students, digital natives, have digital skills developed to a level that allows them to accomplish the given task. In designing the task and organizing the activity with the students, the first author was involved and was perceived by students as a teacher, not as a researcher.

2.2. Procedure. The research was carried out within the project *Valorificarea unor tehnologii avansate pentru realizarea unor filme didactice destinate predării-învățării în învățământul universitar* [Valorising Certain Advanced Technologies to Realise Didactic Films for Teaching-Learning in the University System] carried out in 2020. Students were given the task to make a video film on Zoom platform with the duration of maximum 5 minutes and maximum 10MB. The first level graduates could choose to present a document from their e-portfolio that includes all the materials made in the pedagogical disciplines, including a lesson project or part of it. The recipients of the film could be students in a pre-university class or the teacher who evaluated the film. The second level graduates were given the task to present the graduation paper for this level. Each student made in this paper a documentation for a geography lesson at high school level and several lesson projects and learning activities, structured based on several models (Evocation-Realization of meaning-Reflection; I know-I want to know-I learned and others). The task was sent to students by email and was posted in the private discussion group Facebook, Cultural Landscapes. The students sent the films by email.

2.3. Research material, data collecting, processing, and interpretation. The research material is represented by the films made by the students, the professor's observations (the first author) on the process of making these films, the students' opinions about the process of making those films. The text presented in the films was subjected to the thematic analysis of the content, and the visual imagery was analysed by visual methods. We obtained the data about the filmmaking process from students by email, during the task and until its completion. We collected the students' opinions about the process of making these films through the survey method, and, as a tool, we used a questionnaire made in Google Forms.

3. Results and Discussions

3.1. The analysis of the films making process. The students received the task and had about ten days to make the film. We had clarification discussions with the students on the private group Facebook, Cultural Landscapes (2020). To understand that it is not such a difficult task for them, we highlighted their digital competence "you have experience in making short films and PowerPoint Presentations". We specified they have the possibility to choose the optimal option for them: a) Make a PowerPoint Presentation in a lesson (they probably already have it) and record their voice when they explain what is on the slide. There can be two perspectives: to speak as they would explain to the children in class or to speak as if they were explaining to the professor how they wanted to do the lesson. It does not need to be a whole lesson, it can be a single short activity, organized in 3-5 slides with a duration of 5 minutes. b) The second possibility is to record when they speak, and their face will appear on the screen. In both variants, the first time they should present their name and surname, specialization, and year of study.

The students had different reactions when they received the assignments. Some asked questions for clarification, others sought solutions, while others expressed concern. The first option proposed by a master student to make the film was to use an application that puts sound in a PowerPoint presentation, but it had too many mega, and it had to be transmitted through wetransfer.com and it took up a lot of storage space. A student wrote that she made a project in PowerPoint, with sound, and sent it using a link on Google Drive. We also proposed making movies with the smartphone, but there was a risk that not all students had high-performance devices. We asked if they knew applications through which they could make the desired movie with a few mega. One student expressed his opinion: "in order to film with the phone and be small,

we have to reduce the clarity, and nothing may be understood.” Following the request to do a test and send it, the student experimented and transmitted the result “I have made a 2-minute video, at a very good clarity and 45 mega came out”. I asked students if they were familiar or worked with the Microsoft Teams Platform and Zoom. They said yes. One student mentioned “For me, the version with Zoom, in which we film ourselves, sounds good, let’s see how it works. I will try it and write to you”. After experimenting, the conclusion was the following: “it works very easily and at a 7-minute filming, the file has 10,000kb = 10 MB. I am sending you the file by email, it is small, no wetransfer is needed. So, I say that this option should remain, but my colleagues should also express their opinion.” The student also proposed storing movies in Google Drive. To help her colleagues, the student made a document in which she described the procedure, attached a video and screenshots. A student pointed out her concern on the group “If we do not come to the faculty, it does not mean that we have more spare time. I had and still have so much to do that I hadn’t received in three semesters together. ... We are in the final year and we have to write the Bachelor’s thesis. ... The session is structured in 2 weeks with 8 exams. After the session ends, we have less than 10 days to complete the thesis. How are we going to handle it all?” Another student reflected, “I don’t understand why we have more work to do than if we took classes normally. All teachers have a lot of requirements. Little by little, they pile up and so we run out of time for writing the Bachelor’s theses.”

“I am sending you an email explaining how to complete the presentations in Zoom. You need to make a presentation of a small part of a lesson that has the role of concluding presentation of the pedagogical module. You choose what lesson you want. It doesn’t have to be a whole lesson, just a short part of a lesson. The presentation will take 5 minutes, no more! Email presentations to... by... May morning. Attach email presentations. Only if the presentations are too large, use wetransfer. (Normally, they shouldn’t be so large that they can’t be attached to the mail.)

Steps to follow to make such a presentation:

- 1. Prepare a PowerPoint presentation with the lesson in advance;*
- 2. Log in to Zoom and sign in <https://zoom.us/>;*
- 3. Receive an email, enter the link you received and activate your account;*
- 4. If you are not already logged in, log in from “Sign in”;*
- 5. Click on “host a meeting”, the “with video on” option. Also choose the audio test option to make sure you hear well;*
- 6. Share the screen by tapping “share screen”. From there, choose which pages / documents you have opened on your computer that you want to share;*
- 7. Upstairs is a dark gray bar. If it does not appear, move the cursor to the top of the eraser that will appear. Click on “more options” (the three points) and choose “Record” to record the presentation;*
- 8. Introduce yourself;*
- 9. When you want to finish, click on “more options” (the three points), then click on the last option: “End”;*
- 10. The video will be automatically saved on your computer after you finish the presentation. Wait for the recording to convert, then choose the folder in which you want it to be saved;*

I have attached images with the steps you need to follow;

I also attached a video made by me yesterday when I tried to see if this version works with Zoom.”

(C.T., third year student).

Attending the final years of some study programs, even if they did not carry out the academic activities face to face, still the students had a program loaded with the preparation of projects, exams, Bachelor's theses, dissertations, graduation of the pedagogical module. The online school has caused many changes in the way the system works, therefore it generated strong pressure on students and induced stress. Because it is very important that all students succeed in solving the given tasks as well as possible, all their problems made public need to be given positive, constructive, transparent feedback and students be encouraged ("Do not panic because you have much to do", "If you have difficulties, ask for help!", "It is a problem for me and for you that we have a lot to do, so the solution is to share knowledge and support each other"). This feedback was provided considering that students are preparing to become teachers.

By the set date, the students managed to make the films. One student used other applications and specified that he could not convert movies to no more than 10 MB. He also proposed sending the film by messenger. In the end, he remade the film observing the given requirements.

3.2. Analysis of students' opinions

We collected the students' opinions about films making through a questionnaire administered after finishing the studies of the first and second level of the pedagogical module. During a day and a half, 36 students responded voluntarily and anonymously, which represents a third of the total number. We specify that some of the students who have completed the first level continue their studies by enrolling in the second level and are now on holiday, and the others are no longer university students and probably some of them are employed.

Regarding the previous production of films and PowerPoint presentations, the results were surprising because they did not correspond to our perceptions and beliefs, of researchers and professors. According to our perception, most students have made films with the smartphone, a device that almost everyone has permanently, but only 3 (8.3%) said they made the movies in this way, while 91.7% said that they made films with other devices. Our belief was that students did not make films on the Zoom platform, but 28 students (77.8%) stated that they had made such films before. Being in their final year, we considered that all students had made PowerPoint presentations, but, to our surprise, only 19 (52.8%) confirmed, so they did not gain experience before.

Although they had a very busy schedule that semester and the students had a lot of work to do, however, to be successful in making the films, 72.2% of them did several rehearsals before recording the film, and 33.3% did one rehearsal. None of the students interviewed made the film without one previous rehearsal. The fact that they practiced was also visible in the film because they were in time, they spoke freely and with a lot of self-confidence. 24 students (66.7%) succeeded to make the film on the first try, which indicated a high degree of success and only two (5.6%) appreciated that they failed in making this film on the Zoom platform, but found other solutions to make the film or they made it without complying with all the requirements (a case in which they could not share the screen). Making the film was a learning activity through successful experience because all the students surveyed claimed that after making this film, they could make other films and 35 of them said that they could guide others to make such films.

In Table 2, we presented the students' opinions regarding the degree of difficulty and the usefulness of the process of making the film on a 5-points Likert scale, where value 1 means "a little" and 5 means "very much". Students perceived the task of making the film to have average difficulty ($m = 2.42$), but after solving it they perceived it to have a lower difficulty degree ($m = 1.72$), which indicates that the experiential learning of was effective, although they made only one film. The process of making the film included several activities, these being perceived with varying degrees of difficulty. The difficulty degree of the activities, in students' opinions, decreased from the task of making the film ($m = 2.42$), to the design of the text that will be exposed

during the presentation (m - 2.06), the exposure (text) during the slide presentation (m - 2.00), making the PowerPoint presentation (m - 1.67), choosing the content of the PowerPoint presentation (m - 1.61). The students appreciated that they had less difficulty than in the activities that they had previously performed frequently (making PowerPoint presentations).

Table 1. Students' opinions about making films

Assertion	Yes		No	
	N o.	%	N o.	%
Before making this film, I had also made films on the Zoom platform.	2 8	7 7.8	8	2 2.2
Before making this film, I had made films with the smartphone.	3	8 .3	3 3	9 1.7
Before making this film, I had made films with other devices.	3 3	9 1.7	3	8 .3
Before making this film, I had made presentations in Power Point.	1 9	5 2.8	1 7	4 7.2
To make this film, I created an account on the Zoom platform.	3 5	9 7.2	1	2 .8
I succeeded to make the film on the first try.	2 4	6 6.7	1 2	3 3.3
Before recording the film, I had rehearsed.	1 2	3 3.3	2 4	6 6.7
Before recording the film, I had done several rehearsals.	2 6	7 2.2	1 0	2 7.8
I failed to make this film on the Zoom platform.	2	5 .6	3 4	9 4.4
After making this film, I can make more.	3 6	1 00	-	0
After making this film, I can help (guide) others to make it.	3 5	9 7.2	1	2 .8

Table 2. Difficulty degree and usefulness of the filmmaking process

	Students' opinion	Value / No. of students					M ean
		1	2	3	4	5	
Difficu lty level	When I was given the task of making this film, I found it difficult.	6	3	14		1	2.42
	Designing the text to present during the slide show was difficult.	12	3	8		-	2.06
	Exposing (text) during slide shows was difficult.	12	6	4		-	2.00
	After I made the film, I found it difficult to make.	18	1	6		-	1.72
	PowerPoint presentation (text and image selection; loading / assembling text and images on a slide / slides) was difficult.	18	3	4		-	1.67

	Choosing the content of the PowerPoint presentation was difficult.	20	0	6	-	1. 61
Usefulness level	The information, explanations and screenshots provided by our colleague were useful to me.	2		6	19	4. 31
	The experience gained by making this film is and will be useful to me.	3		3	16	3. 94

3.3. Analysis of films made by students

Presentation format. 90 films out of 91 films made in mp4 format, and a student from the first level module sent a film in MOV format. Six students also sent the playback version (m3u format), five from the first level and one student from the second level. Seven students also sent the audio-only version (m4a format), six from the first level and one student from the second level.

Volume/ amount of information (Megabytes). At the first level, one film had 36 MB, two films exceeded 20 MB, 13 had 10-20 MB, and 49 films had less than 10 MB, so they met the given requirement. Three films had less than 4 MB. At the second level, 10 films had 10-17.4 MB, and 26 films had less than 10 MB. The smallest film was 4.9 MB (Table 3).

Film length. Even if some films have exceeded the upper limit of 10 MB, most films could be watched in 5-6 minutes (Table 3). The students were timed (it was allowed to exceed the duration of the presentation). They were able to control this parameter, even if they could not control the amount of information measured in megabytes.

Table 3. Number of students and compliance with the requirements in making films

	No. of students	No. of films > 10 MB	No. of films of 5-6 minutes
1 st level	55	16	32
2 nd level	36	10	17

Screen organization. Depending on the understanding of the task, the knowledge of the platform, of the devices and of the presentation conception, while watching films, the screen was organized spatially in several ways: (1) the PowerPoint presentation occupied the entire screen, without the author being visible; (2) the PowerPoint presentation took up the entire screen, but in the upper right corner was visible the face of the speaking student; (3) on the left side of the screen one could see the slides, in the center were located slides on the basis of which the presentation was realised, and in the upper left corner, the student was visible; (4) the student spoke freely without visual support, motivating that he / she could not share the screen because of the devices he / she had, a situation he / she had previously faced in other disciplines; (5) the student spoke without sharing the screen, but indicated certain aspects on a map located behind him. A student communicated with students in a class, asked them questions, and answers were heard, although students did not see each other. It gave the impression that it would be a face-to-face lesson.

The chosen theme. The first level students presented fragments from the lessons and addressed the students, except for one student, who presented how he wanted to organize the lesson, and addressed the evaluating professor. Two students chose topics that did not exist in the school curriculum: Muntenia, Global Seed Vault, Svalbard, and Norway. Most students chose the topics related to the Geography of Romania, the Regional Geography (of the continents), the Physical Geography and elements of astronomy. Such topics are helpful in enabling students develop their critical thinking while understanding the complexity of geographical processes and phenomena, and the factors influencing the resilience and sustainability of geographical systems (Petrișor, Petre and Meita, 2016; Petrișor, Meita and Petre, 2016; Roșian et al., 2016). Few students chose

topics from Population Geography, Economic Geography and Geography of Settlements (Table 4). Only three topics were addressed by several students: The Depression of Transylvania, the Danube Delta, and Europe's climate. The students from level II presented the graduation paper, each with a certain theme. They presented either the entire paper or just a few learning activities.

Table 4. Examples of lesson topics approached in films by students

	Examples of topics
Romanian geography	The Black Sea, the Danube, the Dobrudja Plateau, the Romanian Field, the Danube Delta, the Apuseni Mountains, the Făgăraș Mountains, the Depression of Transylvania, the Moldavian Plateau, the Mehedinți Plateau, the Getic Plateau, the Subcarpathians, the Romanian Climate.
Regional geography	Countries: Spain, Italy, Germany, New Zealand; Characteristics of the continents: Europe's climate, Europe's pedogeographic cover, Africa, Asian vegetation, Europe's relief.
Physical geography and elements of astronomy	Elements of astronomy: The universe and the solar system, Lithosphere. General characteristics and importance, the Earth's geospheres, Physical geography: The major relief of the continents.
Geography of population and settlements	Metropolises and megalopolises, Structure by races, Structure by religions and distribution on the globe.
Economic geography	Natural resources and their capitalization.

Oral communication. The students spoke freely, even if there was written text on the screen. They showed that they knew the content very well. For the time frame, some students spoke very quickly. To reduce stress, students learned that some mistakes were allowed, so their presentations were natural, not directed and mechanically memorized.

Visual communication. Although it was recommended in other contexts to avoid writing in white, in some cases, the text was in white on a blue, black, or green background. Most presentations were richly illustrated with images (maps, diagrams, photographs, block diagrams, profiles), but without abusing them. Only in a few cases, the presentations did not include images, which was surprising because the students had already learned about the importance of using visual material in forming correct representations in geography. Students did not integrate animated films or documentaries in their presentations. They did not make dynamic presentations, because in previous contexts it was required that their presentations be static, in order not to distract the students from the essential aspects of the studied topic.

4. Conclusions

At the end of this research, in which we investigated the process of making didactic films by geography students and films made in the context of completing study programs designed to train them for the career of a geography teacher, we came to some conclusions. The task of making films was a challenge for the students, but, even if, in the beginning, it was perceived as difficult, as a result of teamwork, going through a detailed procedure explained by one of their colleagues and some rehearsals, the students managed to solve the task successfully. Regarding the films made, we found that most students met the requirements (use of the Zoom platform, maximum duration of 5-6 minutes, the film should not exceed 10 MB) and the suggestions given by their professor. The experiential learning resulting from making those films was considered by students to be useful in other contexts, including those in which they helped others make films.

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References

- Adăscăliţei, A., Cucuş, C., Vlada, M. and El-Din, A.S.E.Z. (2019): Blended Teaching and Learning and Implementation of Online Laboratories in STEM Education Using a Virtual Learning Environment. In M. Vlada et al. (eds.), *Proceedings of the 14th International Conference on Virtual Learning*. Editura Universităţii, Bucureşti, 27-36.
- Dulamă, M.E. (1996): *Didactica geografică* [Geographical Didactics]. Clusium, Cluj-Napoca.
- Dulamă, M.E. (2004): *Modelul învăţării depline a geografiei* [The Model of In-depth Learning of Geography]. Clusium: Cluj-Napoca.
- Dulamă, M.E. and Roşcovan, S. (2007): *Didactica geografiei* [Didactics of Geography]. BONS OFFICES, Chişinău.
- Dulamă, M.E., Ilovan, O.-R. and Buş, R.-M. (2016): Cultural Landscapes and Geography University Students' Learning on Facebook Discussion Groups. In M. Vlada et al. (eds.): *Proceedings of the 11th International Conference on Virtual Learning*. Editura Universităţii, Bucureşti, 50-57.
- Dulamă, M.E., Ilovan, O.-R. and Niţoiaia, A. (2016): Forming and Assessing the Competence to Elaborate Proposals of Spatial Planning Measures for Hydrographical Basins. *PedActa* 6, 1, 16-27.
- Dulamă, M.E., Ilovan, O.-R., Boţan, C.N., Havadi-Nagy, K.X., Gligor, V. and Ciascai, L. (2018): Geographical Field Trips during University Studies. Where to? In V. Chiş and I. Albuşescu (eds.): *5th ERD Conference 2017, The European Proceedings of Social and Behavioural Sciences, EpSBS XLI*, Future Academy, 494-502.
- Dulamă, M.E., Magdaş, I. and Chiş, O. (2020): Role of Didactic Films Made by Master's Students in Developing Didactic Competence. In V. Chiş (ed.): *7th ERD Conference 2019, European Proceedings of Social and Behavioural Sciences, EpSBS LXXXV*, 704-712.
- Dulamă, M.E., Magdaş, I. and Osaci-Costache, G. (2015): Study on Geography Students' Internet Use. *Romanian Review of Geographical Education* 6, 1, 45-61.
- Dulamă, M.E., Ursu, C.-D., Ilovan, O.-R. and Voicu, C.-G. (2019): Increasing Generation Z Geography Students' Learning through Didactic Films, in University. In M. Vlada et al. (eds.): *Proceedings of the 14th International Conference on Virtual Learning*. Editura Universităţii, Bucureşti, 79-85.
- Dulamă, M.E., Ursu, C.-D., Ilovan, O.-R., Răcăşan, B.S., Andronache, D. and Rus, G.-M. (2020): Representing Urban Space: Constructing Virtual Landscapes and Developing Competences. In V. Chiş (ed.): *7th ERD Conference 2019, European Proceedings of Social and Behavioural Sciences, EpSBS LXXXV*, 694-703.
- Dulamă, M.E., Vana, V.M. and Ilovan, O.-R. (2016): Assessing Territorial Planning M.Sc. Students using Facebook. In M. Vlada et al. (eds.): *Proceedings of the 11th International Conference on Virtual Learning*. Editura Universităţii, Bucureşti, 66-74.
- Ilovan, O.-R., Dulamă, M.E., Andron, D., Bălan, P.-M., Muntean, D.-O., Toderaş, A. and Ciocan, C. (2019a): Developing Students' Competence to Analyse Landscapes during Geography University Studies. In V. Chiş and I. Albuşescu (eds.): *6th ERD Conference 2018, European Proceedings of Social and Behavioural Sciences, EpSBS LXIII*, Future Academy, 398-408.
- Ilovan, O.-R., Dulamă, M.E., Boţan, C.N. and Buş, R.-M. (2016): Using GIS in Initial Professional Training for Territorial Planning during Geography University Studies. In M. Vlada et al. (eds.): *Proceedings of the 11th International Conference on Virtual Learning*. Editura Universităţii, Bucureşti, 58-65.
- Ilovan, O.-R., Dulamă, M.E., Ciascai, L. and Maroşi, Z. (2015): Geography University Students' Skills to Research Online Sources. An Empirical Study. In M. Vlada et al. (eds.): *Proceedings of the 10th International Conference on Virtual Learning*. Editura Universităţii, Bucureşti, 201-134.
- Ilovan, O.-R., Dulamă, M.E., Marin, M., Răcăşan, B.S., Egresi, I., Havadi-Nagy, K.X. and Mutică, P. (2020a): Online Documentation for Emerging Subjects in Geographical Research: The Urban Bioregions. In I. Albuşescu and N.-C. Stan (eds.): *8th ERD Conference 2020, European Proceedings of Social and Behavioural Sciences*, Future Academy, under print.
- Ilovan, O.-R., Havadi-Nagy, K.X., Păcurar, B., Dulamă, M.E., Jucu, I.S., Simioană, M. and Koszinski, S.A. (2020b): Learning from the Experts: Liberty Technology Park - Investment, Innovation, Development. In V. Chiş (ed.): *7th ERD Conference 2019, European Proceedings of Social and Behavioural Sciences, EpSBS LXXXV*, 242-252.

- Ilovan, O.-R., Kosinszki, S.-A., Dulamă, M.E. and Marian, M. (2018): Usefulness of Web Sources in Geography Bibliographical Research and Learning. In M. Vlada et al. (eds.): *Proceedings of the 13th International Conference on Virtual Learning*. Editura Universității, București, 272-277.
- Ilovan, O.-R., Măgerușan, A., Boțan, C.N., Dulamă, M.E., Ursu, C.-D., Mutică, P. and Jucu, I.S. (2020c): Experiencing and Bringing Back the River in the Urban Flow: Someș Delivery. In V. Chiș (ed.), *7th ERD Conference 2019, European Proceedings of Social and Behavioural Sciences, EpSBS LXXXV*, 262-272.
- Ilovan, O.-R., Maroși, Z., Adorean, E.C., Ursu, C.-D., Kobulniczky, B., Dulamă, M.E. and Colcer, A.-M. (2019b): E-Learning Urban Landscape Changes in Post-Socialist Romania Using Digital Mapping. In M. Vlada et al. (eds.): *Proceedings of the 14th International Conference on Virtual Learning*. Editura Universității, București, 62-69.
- Ilovan, O.-R., Maroși, Z., Dulamă, M.E., Scridon, I., Boțan, C.N., Fonogea, S.F. and Rus, G.-M. (2020d): Learning from Practice in the Paintbrush Factory: Revival through Art. In V. Chiș (ed.), *7th ERD Conference 2019, European Proceedings of Social and Behavioural Sciences, EpSBS LXXXV*, 253-261.
- Ilovan, O.-R., Medeșan, S., Colcer, A.-M., Adorean, E.-C., Dulamă, M.E., Ciineanu, M.-D. and Benedek, R. (2020e): Raising Civic Awareness and Involvement through Urban Regeneration: At The Playgrounds, Mănăștur. In V. Chiș (ed.), *7th ERD Conference 2019, European Proceedings of Social and Behavioural Sciences, EpSBS LXXXV*, 273-281.
- Magdaș, I., Ilovan, O.-R., Dulamă, M.E. and Ursu, C.-D. (2018): Visual Materials from Web Sources in Studying Regional Geography Topics. In M. Vlada et al. (eds.): *Proceedings of the 13th International Conference on Virtual Learning*. Editura Universității, București, 278-284.
- Peisaje culturale [Cultural Landscapes], <https://www.facebook.com/groups/308764242808689>, accessed 2020.
- Petrișor, Al.-I., Meita, V. and Petre, R. (2016): Resilience: Ecological and Socio-Spatial Models Evolve While Understanding the Equilibrium. *Urbanism Architecture Constructions* 7, 4, 341-348.
- Petrișor, Al.-I., Petre, R. and Meita, V. (2016): Difficulties in Achieving Social Sustainability in a Biosphere Reserve. *International Journal of Conservation Science* 7, 1, 123-136.
- Richter, Barry W. and Van der Westhuizen, Christo P. (2005): DVD Supportive Training for Geography Teacher Students as an Interim for ICT in Developing Countries. In *3rd International Conference on Education and Information Systems: Technologies and Applications 1*, 355-360.
- Roșian, Gh., Horvath, C., Réti, K.-O., Boțan, C.N. and Gavrilă, I.-G. (2016): Assessing Landslide Vulnerability Using Bivariate Statistical Analysis and the Frequency Ratio Model. Case Study: Transylvanian Plain (Romania). *Zeitschrift für Geomorphologie* 60, 4, 359-371.
- Rus, G.-M., Dulamă, M.E., Ursu, C.-D., Colcer, A.-M., Ilovan, O.-R., Jucu, I.S. and Horvath, C. (2019): Online Apps, Web Sources and Electronic Devices: Learning through Discovery about Valea Ierii [Iara Valley]. In M. Vlada et al. (eds.): *Proceedings of the 14th International Conference on Virtual Learning*. Editura Universității, București, 110-119.
- Rus, G.-M., Ilovan, O.-R., Dulamă, M.E., Chiș, O., Ursu, C.-D., Colcer, A.-M. and Horvath, C. (2020): The Anthropogenic Impact on Relief and Vegetation. Case Study: Valea Ierii. In V. Chiș (ed.): *7th ERD Conference 2019, European Proceedings of Social and Behavioural Sciences, EpSBS LXXXV*, 768-778.
- Ursu, C.D., Conțiu, H.-V., Conțiu, A., Ivan, R., Glonți, M., Dulamă, M.E. and Ilovan, O.-R. (2020): Visual Representations of a Regional Economic Subsystem. An Analysis. In I. Albulescu and N.-C. Stan (eds.): *8th ERD Conference 2020, European Proceedings of Social and Behavioural Sciences*, Future Academy, under print.
- Vlada, M. and Adăscăliței, A. (2014): Computers: as Digital Facilities for Scientific Research and as Tools for Enhanced Learning in Higher Education. *eLearning & Software for Education* 2, 537-544.
- Vlada, M., Jugureanu, R. and Istrate, O. (2009): E-Learning and Educational Software. Educational Projects and Experience of Implementation in Romania. In M. Vlada et al. (eds.), *Proceedings of the 4th International Conference on Virtual Learning*. Editura Universității, București, 25-39.