SCIENTIFIC REPORT

regarding the implementation of the project

„Innovative development and implementation of MOOCs in higher education”

between October 2015 – September 2017
PN-II-RU-TE-2014-4-2040

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Host institution: West University from Timișoara (WUT)

The activities for the project can be divided into two main categories: activities focused on scientific studies and dissemination of results and activities focused on the development of an international research network.

A. ACTIVITIES FOCUSED ON SCIENTIFIC STUDIES AND DISSEMINATION OF RESULTS

Started in 2008, the new Massive Open Online Courses (MOOCs) paradigm has brought challenges and innovation at all levels of education, aiming to respond to the most pressing learning needs, generated by the new development policies and the rapid evolution of technology. In this respect, the research carried out during the project was focused on the following axes: **learning needs for students**, **teachers** and **community** as a smart learning environment (with the university as a pillar toward the city's smartness).

a) STUDENTS. In the digital age of the Internet, the abilities of people to share information, collaborate with others, or work from a distance have created a synergy that is shaping educational systems as well. Massive online open courses are one of the trending game changers of formal, institutionalized education, and students are joining the trend with increasing excitement. Currently, engineering is working together with academia to increase the number of available open educational resources and broaden the coverage of MOOCs worldwide. Yet, we take a step further and combine complex network analysis and sociology to model and analyze the emerging profiles of the new digital student. As such, we have used an online questionnaire to gather detailed opinion from 632 students from Romania regarding the advantages, disadvantages and reasons to choose MOOCs. Based on their expressed opinions, we created two graph models of compatibility based on key individual traits, and found six distinct student profiles in terms of engagement in MOOCs, and seven profiles for non-participants. Furthermore, we discussed these profiles and explained the implications, limitations and perspectives of this study. We consider our findings an important milestone both in understanding the needs of future students and in optimizing the way MOOCs are developed to serve the challenges in education.

b) TEACHERS. In order to determine the need for MOOCs of Romanian educational actors, we have initiated several surveys addressed to preuniversity and university teachers. The objectives were focused on identifying:
- the use practices of the online environment in the teaching activity and, in general, in the professional activity of the teachers in their environment;
- the training needs of the teaching members regarding the use of online tools.

The research tools were developed by the project team based on the specialized literature review and based on the previous experience on the online study as a learning-teaching and research space. The questionnaires were built on two dimensions that reach the estimated objectives:
- previous experience in using the online environment as a learning environment
- teachers' training needs on the use of online tools.

From a methodological point of view our studies were a real challenge, primarily because it seeks to attract a significant number of teachers from the educational environment as respondents. Even if the sample is not built by a dedicated sampling method, i.e. proportional sampling, the large number of respondents enables us to identify a direction of opinion existing in the investigated population regarding the use of the online environment as a learning environment.

c) COMMUNITY. In a previous paper we underlined the fact that regarding the concept of „Smart City", most MOOCs involved in one way or another are relatively new, and their contributions "to give" smart citizens can be indirect. We noticed a lack of clarity and consensus about the development of MOOCs discussing the definition of a smart city. Thus, many questions and aspects remained open and needed to be addressed by future research:
- Which features of smart / learning cities should be offered by MOOC platforms and how can such courses be facilitated?
- How can the authorities collaborate with universities and researchers to develop specific open educational resources (OERs) for smart cities and to organize such courses?
- What lessons can be learned from current projects targeting these issues?
- What are the literacy / competences people need in order to learn and live in a smart city environment?

Therefore, we propose (in collaboration with researchers from other universities and organizations specialized in training, research and consultancy) to build a package of MOOCs targeting the learning needs of young entrepreneurs in the context of „smart cities and specializations" policies. We focused on the concepts, the development, and implementation steps, from MOOCs design, pilot phase, consultancy activities, impact study to proposals for national policies and accreditation. As far as we know, this work could be a starting point for developing new programs and customized training courses on specific learning needs to support the „smart cities" interventions.

In the end, in order to foster the Open Education, the OER and MOOC inclusion in the Romanian educational system, we propose a set of recommendations (the full report is available on the project website).

Guidelines for including OE, OERs and MOOCs in Romanian education

For policy makers

- The already existing publicly funded educational content should be used more intensively by teachers and students: connections with curricula, the skills they develop should be more clear; encourage and support the sharing of best practices; should be also licensed under CC.
- Create a repository under CC licenses with the educational projects in which Romanian schools, universities and educational organizations have participated.
- Partnership of the Ministry of Education with publishers, broadcasters, libraries, cultural institutions to provide open access to their own resources.
- Encourage a competitive market for the production of educational resources, guarantee transparency of supply and equal opportunities to market actors, based on a set of quality criteria, containing pedagogic, design, accessibility and openness principles.
- Implement an online platform for collaborative production of OERs/MOOCs by institutions, teachers and students, based on open collaborative technologies, presenting open scenarios for learning.

- Any public outputs from the European Commission programs (specifically including Erasmus for All and Framework) should be made available as open resources under an appropriate license.
- Budgets for digital education should include money for developing and maintaining OERs/MOOCs.
- OER should be allowed on approved materials lists.
- Quality agencies in ENQA (the European Association for Quality Assurance in Higher Education) should develop their understanding of new modes of learning (including online, distance, OERs and MOOCs) and how they impact quality assurance and recognition.
- Encourage Europe-wide validation of the knowledge and competences developed through online study and informal learning, including but not restricted to OERs and MOOCs.

- Promote the use of MOOCs for re-skilling and up-skilling both unemployed people and workers, especially for those without employer support to training activities; this would help in decreasing unemployment rate.
- Promote digital competence development in both formal education and professional development activities. This could lead to a higher participation rate of individuals in an open education context and, indirectly, to a reduction in training costs and greater flexibility in education.

- Foster dialogue and collaboration between actors in HEI internationalization, student mobility and the validation of non-formal and informal learning.

For educational institutions

- All teacher training programmes should contain topics related to OER, MOOCs, open licenses and Web2.0/collaborative/free tools to create educational materials in a collaborative manner.
- Facilitate the sustainable implementation of OERs/MOOCs by creating incentives for use and reuse, and funding technical infrastructure to increase access to OERs/MOOCs.

- Strong and ongoing collaborations between schools, universities and other educational stakeholders with regard to OER/MOOC projects.
- Accessibility should be a priority for all OER/MOOC, including disability accessibility standards.

- Have a holistic strategy for opening up education that encompasses the 10 dimensions of the OpenEdu framework, making the open education strategy part of the overall institutional strategy.
- Explore new practices and welcome changes.
- Revise the practices at all levels: mission statement and vision, current organizational management structures and day-to-day policies, and the institution's role in the community and globally.

- Validate open learning by offering credentials for MOOCs and free and open online courses.
- Provide flexible options for 'free elective courses' or 'self-study courses' in the curricula, including open learning for study progression.
- Join European consortia related to MOOCs and build partnerships with HEIs/employment bodies.

- Build the capacity of users to find, re-use, create and share OERs/MOOCs.
- Empower educators and learners to develop quality, gender-sensitive, culturally and linguistically relevant OER/MOOC appropriate to local cultures and to create local language OER/MOOC.
- Ensure inclusive and equitable access to quality OER/MOOC.

Based on our two year research, we have developed content both in Romanian and English language for the following courses: *"Resurse Educationale Deschise – initiere pentru profesori"* (Open Educational Resources for teachers), "*Povestiri Digitale*" (Digital Storytelling), "*Practising English with Technology"* and "*Evaluating Fake News"*. The contents were designed to appeal to anyone without special digital prerequisites, but specially for students enrolled in our university who attend transversal disciplines and teachers from preuniversity system.

The courses are now ready for enrollments on the Teachable platform at http://west-university-timisoara.teachable.com/. All the modules will be open after the participants' enrollments ends (a period of 30-45 days was established by the team project in order to achieve a significant number of participants enrolled).

Thus, at the end of the project, I can report the following research papers written by the team members (sometimes in collaboration with other researchers), in which the project is mentioned in the Acknowledgements section:

1. Grosseck, G. & Malița, L. (2015). Do you MOOC? An exploratory view for Romanian academic landscape. In *Proceedings of ICVL - International Conference on Virtual Learning* (ICVL2015), Timișoara, 31 October 2015, pp. 388-392, ISSN 1844 – 8933.
2. Grosseck, G. & Bran, R (2016). Towards research 2.0: The influence of digital and online tools in academic research. In *World Journal on Educational Technology*. 8(2):132-138.
3. Holotescu, C. et al. (2016). MOOCs for innovative entrepreneurship in smart cities. In *World Journal on Educational Technology*. 8(3): 245-251.

4. Holotescu, C., Andone, D. & Grosseck, G. (2016). MOOCs Strategies in Romanian Universities. In Jansen, D. & Konings, L. (eds.) (2016, June). *European Policy Response on MOOC opportunities*. EADTU Publisher. ISBN: 978-90-79730-20-9.
5. Grosseck, G., Bran, R. & Holotescu, C. (2016). Let's Learn English with Technology. In *Proceedings of ICVL – International Conference on Virtual Learning*(ICVL2016), Craiova, 29 October 2016, pp. 407-414, ISSN 1844 – 8933.
6. Bogdan R., Grosseck, G., Andone, D., Holotescu, C., (2017), How Moocs Are Being Used For Corporate Training?, Volume "Could technology support learning efficiency?" Proceedings of the 13th International Scientific Conference "eLearning and Software for Education" Bucharest, April 27 - 28, 2017 DOI: 10.12753/2066-026X-17-121
7. Carmen Holotescu, Liliana-Olivia Gotiu Lucaciu, Diana Andone, Liliana Cismariu, Gabriela Grosseck, Titus Slavici. (2017). Entrepreneurship Learning Ecosystem for Smart Cities through MOOCs. BRAIN. Broad Research in Artificial Intelligence and Neurosciences, Vol. 8(2), ISSN 2067-3957 / E-ISSN 2067-8177. (ISI Journal)
8. Topirceanu A., (2017) Gamified learning: A role-playing approach to increase student in-class motivation, Volume Knowledge-Based and Intelligent Information & Engineering Systems: Proceedings of the 21st International Conference KES 2017: Knowledge-Based and Intelligent Information & Engineering Systems, ISSN: 1877-0509
9. Topirceanu A., Grosseck G., (2017) Decision tree learning used for the classification of student archetypes in online courses, Volume Knowledge-Based and Intelligent Information & Engineering Systems: Proceedings of the 21st International Conference KES 2017: Knowledge-Based and Intelligent Information & Engineering Systems, ISSN: 1877-0509
10. Topirceanu A., Udrescu M., (2017) Strength of nations: A case study on estimating the in uence of leading countries using social media analysis, Volume Proceeding of the 4th European Network Intelligence Conference ENIC 2017: 4th European Network Intelligence Conference, ISSN: 2190-5428
11. Malita, L, Grosseck G., Tiru L. (2017). MOOCs for Teachers Professional Development – a University Challenge?, paper sent to International Journal of Information and Education Technology (IJIET), ISSN: 2010-3689, DOI: 10.18178/ijiet.2018.8.3.1040, and approved for the volume from March 2018, retrieved from http://www.ijiet.org/vol8/1040-SE0024.pdf.

In addition to these outcomes, the NOVAMOOC team members participated in several scientific events (conferences, workshops, webinars / for some of them as organizers, too)[1]:

The Fourth National Conference of Adult Education, „Stimulating participation of adults in education. Perspectives on the implementation of the national lifelong learning strategy", Timișoara, Romania, 20–21 November 2015, with the paper *The challenge of MOOC in adult education.*

The final Conference of the project „UNIVERSITARIA – școală de didactică universitară și cercetare științifică avansată", West University from Timișoara, 20-23 November 2015, with the paper *Innovative development and implementation of MOOCs in higher education*.

The International conference „WOW! Europe embraces MOOCs", Rome, Italia, 30 November 2015, with the paper *The MOOCs under microscope: Romanian students' insights*.

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[1] A complete list of the events can be found in the scientific reports of each year

8th World Conference on Educational Sciences, 4-7 February 2016, Madrid. The conference is indexed in Conference Proceedings Citation Index (ISI Proceedings, access via Web of Science).
- Ramona Bran and Vlad Chiriac, *Towards Research 2.0: The Influence of Digital and Online Tools in Academic Research*.
- Carmen Holotescu, *MOOCs for Innovative Entrepreneurship in Smart Cities*.

Open Education Week, 11 March 2016, Timisoara.
- Webinars "Open Education – concepts, tools, resources, practices"
    i. Gabriela Grosseck and NOVAMOOC team. *What do WUT students think about online courses?*
    ii. Carmen Holotescu (2016). *OER and MOOC initiatives in Romania.* Integration scenarios in schools and universities.

"E-learning and software for education" (21-22 April 2016, Bucharest). The conference is indexed in Conference Proceedings Citation Index (ISI Proceedings, access via Web of Science).
- Gabriela Grosseck, *What do students think about MOOCs*
- Workshop *Open Educational Resources and MOOCs*, 3rd edition organized by Gabriela Grosseck and Carmen Holotescu

1st International Conference on Smart Learning Ecosystems and Regional Developments, SLERD2016, 19-20 May 2016, Timisoara Romania
- Carmen Holotescu, *Entrepreneurship learning ecosystem through MOOCs for Smart Cities*

"High Transferable Skills – teaching and learning perspective" International Conference, 28 May 2016, Craiova,
- Laura Malita and Gabriela Grosseck, *Transversal Skills for Students from WUT developed through MOOCs*

Workshop with WUT teachers, 27 October 2016, West University of Timisoara
- Gabriela Grosseck and NOVAMOOC team, *miniatelier de initiere in MOOC*
CNIV (*Conferinta Nationala de Invatamant Virtual*) and *ICVL* (*International Conference on Virtual Learning*) 29 October 2016, Craiova. The conference is indexed in Conference Proceedings Citation Index (ISI Proceedings, access via Web of Science).
- Carmen Holotescu – *Open Education, Open Educational Resources and Massive Open Online Courses. Romanian Initiative*
- Vlad Chiriac, *Competente transversale la UVT prin MOOC*.

Workshop – pre-university teachers (national coverage), 29 October 2016, Craiova University, *Dezvoltarea si implementarea MOOCurilor in invatamantul superior* (in cadrul CNIV2016)

International Conference on Education, Psychology and Learning (ICEPL), 7-9 November 2016, Seoul, South Korea
- Gabriela Grosseck and Laura Malita, *The MOOCs under microscope, Romanian Students' Insights*

Scientific Methods in Academic Research and Teaching (SMART), 17-19 November 2016 Timisoara. The conference is indexed in Conference Proceedings Citation Index (ISI Proceedings, access via Web of Science).

- Carmen Holotescu, *Strategies for opening up education in European universities*
- Vlad Chiriac, *Opening up education at WUT. Case study: integration of MOOCS in transversal disciplines*
- Gabriela Grosseck, Ramona Bran and Carmen Holotescu, *Languages and participation in MOOCs*
- Laurentiu Tiru, Laura Malita and Gabriela Grosseck, *Possibilities, Potential and Perils in Proffesional Development of Teachers through MOOCs*
- NOVAMOOC team organized *a pre-conference MOOC* (under the umbrella of NOVAMOOC project). The MOOC consisted in selected conference presentations as short videos that demonstrate the main outcomes of the authors' contributions. The scope was to enhance the discussions and exchange between the participants in the conference and all those interested in the SMART topics

Open Education Week, 31 March 2017, Timisoara: Webinar "Open Education – concepts, tools, resources, practices":

- Gabriela Grosseck, Luiza Vlaicu and Ramona Bran. MOOC pentru dezvoltarea profesionala a cadrelor didactice. Experiența UVT
- Carmen Holotescu. MOOC initiatives in Romania.

"E-learning and software for education" (27-28 April 2017, Bucharest). The conference is indexed in Conference Proceedings Citation Index (ISI Proceedings, access via Web of Science).

- Laurentiu Tiru and Vlad Chiriac, MOOCs - a Solution for Improving / Enhancing Teachers' Digital Skills?
- Gabriela Grosseck and Laura Malita, NOVAMOOC Development and innovative implementation of MOOCs in Higher Education

4th International Conference on Society, Education and Psychology (ICSEP 2017), 06-08 May 2017, Timisoara Romania

- Laura Malita, Gabriela Grosseck and Laurentiu Tiru, MOOCs for Teachers Professional Development - A university challenge?

"The 21st International Conference on Teaching, Education and Learning (ICTEL)" International Conference, 26-27 July 2017, Mauritius,

- Gabriela Grosseck and Laura Malita, Is There A Relation Between Smart Cities, Moocs And Teachers' Professional Development?

EduTeach 2017, 2nd International Conference on Advances in Education, Teaching &Technology 2017, " Global Education through technology – Challenges, issues and trends " 29-31 July 2017, Toronto.

- Laura Malita, Gabriela Grosseck and Laurentiu Tiru, – Fostering Teachers' Professional Development Through MOOCs

New Trends and Perspectives in Open Education, NOVAMOOC, 8-9 September 2017, Timisoara

- Laura Malita Gabriela Grosseck and Madalin Bunoiu, Can we mOOC? The promises and perils for Romanian education system

- Luiza Vlaicu and Alexandru Topirceanu, Do West University of Timisoara has students' profiles for MOOCs? (poster)

GSTF EeL - 7th Annual International Conference On Education & e-Learning (EeL2017), 25-26 September 2017 Singapore.
- Laura Malita Gabriela Grosseck and Madalin Bunoiu, Big Data, MOOCs, Learning Analytics and Teachers' Professional Development Higher Education

During the project we also organized several workshops both to train educational actors and disseminate the project results.

In September 2017 according with the proposed activities we organized an international conference which attracted many specialists from around the world interested in our project (details can be found on the project website). Another objective achieved was the relaunch of the *Journal of Social Informatics* no 1 and 2. The papers from the International Conference "New trends and perspectives in Open Education" will also be published in no. 3 of the journal (to be online in December this year after the reviewer process).

Based on these results, I can state that I achieved all objectives regarding the research activity, publication and dissemination outcomes of this project.

B. ACTIVITIES FOCUSED ON DEVELOPMENT OF AN INTERNATIONAL RESEARCH NETWORK

During the 2016 and 2017 there were carried out activities to strengthen one of the project objectives, namely the establishment of an international network. At the end of the project I can say that West University of Timisoara successfully managed to establish a network with several academic institutions from all over the world, such as:

- Republic of Moldova: "Ion Creanga" State Pedagogical University, Chisinau, Moldova State University Chisinau
- USA: Massachusetts Institute of Technology, Columbia University, University of Pennsylvania
- South Korea: National Institute for Lifelong Education, Hanyang University, Seoul National University of Education
- Japan: Open University of Japan, Tsukuba University, Kansai Osaka University
- China: The Open University of Hong Kong, The City University of Hong Kong, The University of Hong Kong, University of Macao
- Canada: University of Toronto, McGill University
- Malaysia: The Open Learning Kuala Lumpur
- Singapore: Learning Sciences and Technology (LST) Academic Group at the National Institute of Education (NIE), Nanyang Technological University, Singapore (NTU)
- Australia: University of Canberra, Australia.
- Romania: Politehnica University of Timisoara, "Ioan Slavici" University Timisoara, Bucharest University, University Politehnica of Bucharest, National Defence University "Carol I" Bucharest

In chronological order the activities which involved networking were carried out as follows:

Between 7-20 August 2016, Alexandru Topirceanu and Mihai Vilcea (the two PhD students at that time) visited Massachusetts Institute of Technology, Cambridge, MA, Columbia University, N.Y. and University of Pennsylvania, Philadelphia, PA. The main purpose of the visit was to learn and experience in designing and delivering a MOOC, preparing and teaching a MOOC, certificates and validation of competences, and how to launch one. During the visit they had the opportunity to interact with Elizabeth Hutner, manager of EDx series, MITx of MIT and to discuss about more or less divergent research activities, mainly focused on the technical problems related with the MOOC platform. Also, Prof. Ryan Baker, learning analytics and Big Data researcher at Columbia University offered them feedback regarding the present research project, and ideas about future research projects. Assoc. Prof. Susan Yoon from University of Pennsylvania offered a complete set of recommendations about the content of a MOOC, the backward design, the type of data collection to be used as learning analytics, the video production and the activities based on volunteers (PhD/master students and young researchers). Based on the valuable ideas collected, we revised the pilot phase of the MOOC concerning which platform to choose.

Between 4-20 November 2016, Gabriela Grosseck and Laura Malita visited higher education institutions from South Korea and Japan. The goal of the mobility was multiple: research visits at prestigious universities from the above mentioned countries, bilateral discussions about the challenges related to the implementation and the development of MOOC courses in the two countries, the problems related to OERs and digital literacy and the participation to the ICEPL conference International Conference on Education, Psychology, and Learning.

The research and/or documentation visits were developed such as:
a) in South Korea at:
- *NILE* – National Institute for Lifelong Education, contact person director Min-Seon Park, International Programme Specialist at NILE
- *Hanyang University* (the biggest private university from South Korea), contact person university professor PhD. Nam Jae Cho
- *Seoul National University of Education* (place 23 in the Shanghai top), contact person university professor PhD. Sunyoung Kim
b) in Japan at:
- *Open University* of Japan (OUJ), *contact* person university professor PhD. Kumiko Aoki (international interchange committee responsible from OUJ)
- *Tsukuba University* (for witch West *University* of Timisoara has an Erasmus partnership), contact person university professor PhD. Simona Vasilache
- *Kansai Osaka University*, contact person university professor PhD. Tosh Yamamoto.

At NILE with Min Seok Park (and with other meeting participants form NILE, including the director of K-MOOC) the focus of the discussions were the national MOOC educational policies, the providing and recognition of credits for the prior learning system, how the employers can recognise online courses' credits, how to choose the key persons in order to implement a MOOC department which is dealing with policy recommendations, MOOCs quality assurance, MOOCs evaluation, the measures of recommendations for MOOCs efficiency and for drop-out decreasing.

With Professor Simona Vasilache the discussions were focussed on OERs, the usage and implementation in formal education, the university policies for information/digital literacy, the decreasing of academic drop-out both for online and blended courses, the usage of OER in

teaching/learning. We visited the university, departments of interest, the Centre for Open and Distance Education, the library, university campus etc.

With Professor Tosh Yamamoto discussions were related to the development of MOOCs for pre-university level, both for teachers and especially for the students with almost 6 months before to enter the academic life, but even related to other special courses, for disciplines they didn't studied in the high schools or colleges.

With Professor Sunyoung Kim from Seoul University of Education the discussion were related to the way a MOOC platform can be chosen, the advantages and disadvantages for the Coursera, Future Learn and Open EDx platforms, how to choose the key persons for MOOC's maintenance, which are the software and hardware conditions for developing a MOOC, which are the requirements for the personnel (ranging from the professors to the designer(s) and volunteers – especially master and PHD students), how are the students recruited, how the online courses credits are provided and recognised.

With Professor Yamada form OUJ the discussions were focussed on the J-MOOC's experiences, what does it mean to be part of the AAOU (Asian Association of Open Universities), which are the opportunities and the limits of such collaborations, how the courses are developed, how such courses' credits are recognised, how are they using the data collected during such courses for learning analytics (questionnaires, big data, social networks, courses' forums etc.), which are the privacy and ethics restrictions, how are they using the internal university broadcast system etc.

At Hanyang University it was visited the university campus, including the Media Centre, seeing evaluation activities for prospective students as well as some training courses/activities with other students.

After the mobility in the two countries (South Korean and Japan) we consider to reach the envisaged goals related to the project for these activities, by bonding prospective research collaborations, research experiences, and receiving lot of practical advices related to the development of different MOOCs (for both teachers and students from pre-university and university level), which is the main goal of the NOVAMOOC project.

From the multicultural perspective, we collected materials (pictures, videos, online and offline resources such flyers and guides, but even other promotional materials), some of them in online format, available on the project platform as well as on the project Facebook page, which are presenting how the Asian society is supporting and perpetuating the impulse for education and auto-education, the civic spirit, the will for education no matter form where and when, the age or professional status of students.

Between April 27 - 28, 2017, the project team represented by Gabriela Grosseck, Carmen Holotescu, Ramona Bran, Laurentiu Tiru and Laura Malita took part on the 13th International Scientific Conference "eLearning and Software for Education", else2017 (http://elseconference.eu), Bucharest. This is an annual event that is recognised to bring together researcher from across the globe, interested in topics such as MOOCs and OER, among others. During this event we were participated by both presenting project's results and activities and also by organising a workshop on the MOOCs' topics. By participating to the above-mentioned conference, we were enlarged the professional network of people interested in such topics and also, we were disseminated through a global interested audience our main research results,

developed during the project lifespan. With some of the researchers we were already established punctual cooperation, such as common research materials, joint conferences (one of them organised through the NOVAMOOC project), further projects etc.

Between 5th and 14th of May 2017, Gabriela Grosseck and Laura Malita (the project coordinator and one of the project researcher) visited the Special Administrative Regions of China (Macau & Hong Kong), respectively the following educational institutions: The Open University of Hong Kong (OUHK), The City University of Hong Kong and The University of Hong Kong. Still, the goal of the mobility was multiple: research visits at prestigious universities from the above-mentioned cities, bilateral discussions about the challenges related to the implementation and the development of MOOC courses in the two regions/cities, the problems related to OER and digital literacy and the participation to the ICSEP 2017 conference (4th International Conference on Society, Education and Psychology, http://www.icsep.org/).
During their visit the two team project members had the opportunity to interact and discuss with all the persons they had planned meetings way before, but even with others, invited by their respective staff.

At Open University of Hong Kong with prof Li Kam Cheong (and with other meeting participants form OUHK,) the focus of the discussions was the state of the art regarding the implementing of MOOCs by the two universities, what were the problems encountered, what were the related solutions provided and if some of them could be exported/imported at West University of Timisoara for the project. Likewise, both parties have agreed to further collaborations, both for different related project research, but mainly through research activities like publishing papers, participating to conferences etc. that cover common interesting research areas like digital literacy, learning analytics, open educational resources, big data etc. More than that, for the September conference that was organized at West University of Timisoara associated with the project's dissemination activities, the colleagues from Open University of Hong Kong were interested to contribute with presentations along one of the possible research topics mentioned above.

With Dr. Crusher Wong and also the CityU MOOC Working Group chairperson, the focus of the discussion was related to the sharing of CityU's experiences of preparing and implementing of MOOCs. Likewise, we discussed the technical aspects of organizing MOOC courses, comparing the features of different MOOC platforms like EdX, Coursera and FutureLearn. They also shared with us what were the discussions with the platforms EdX & Coursera and what was the reason for choosing Future Learn. Due to the fact that Future Learn has recently introduced new rules, CityU has starting to find new alternatives that possibly support Chinese interface. Likewise, they were presenting the inside statistics available for Future Learn courses and how they are using such (big) data for learning analytics, underlying both positive aspects and less positive features of this platform. We were positively impress by their availability of sharing with us unpublished official statistics.

With Professor Kajimoto form The University of Hong Kong the discussions were focussed on his experiences as one of the successful promoter of MOOC courses on both platforms Coursera and EdX. He also gave us advices regarding other platforms which they are taking into consideration, like newly features introduced by Facebook. Likewise, he also showed us which kind of internal statistics Coursera and EdX are providing to the instructors, which kind of reports and how could they potentially be used for learning analytics and/or other purposes. He also presents us the production studio, underlying which kind of roles his team is supposed to undertake. Besides, we were visiting the multimedia team for the other MOOCs offered by

The University of Hong Kong, coordinated by Louie Cheng. They show us which programs they are using, how are they preparing and producing content for the MOOCs.

Based on the valuable experiences shared & ideas collected, we reached the envisaged goals related to the project, for these activities. More concretely, by bonding prospective research collaborations, research experiences, and receiving lot of practical advices related to the development of different MOOCs (for both teachers and students from pre-university and university level), we revised the pilot phase of the MOOC concerning which platform to choose and how the content of the MOOC to be developed and promoted, which is one of the main goal of the project. We also agreed for further collaborations and discussions, materialised through common projects, publishing common research materials and academic papers.

In addition to that, we were participated to the 4th International Conference on Society, Education and Psychology (http://www.icsep.org/), 6-8 May 2017, by presenting the accepted paper MOOCS for Teachers' Professional Development - A university Challenge?, co-authors Laura Malița, Laurențiu Gabriel Țâru and Gabriela Grosseck and also the poster Identifying students' profile in MOOCs – a social media analysis, co-authors Alexandru Topirceanu and Gabriela Grosseck. Contact persons for those related activities were Jack T. Feng and prof. dr. Robert J. Taormina, University of Macau.

Between 26th of July 2017 and 6th of August 2017 Gabriela Grosseck and Laura Malita (the project coordinator and one of the project researcher) visited Canada, respectively Toronto (26th -1st of July/August, 2017) and Montreal (1st -6th of August 2017). The goal of the mobility was multiple: research visits at prestigious universities from the above mentioned cities and the participation to the EduTeach 2017 conference (2nd International Conference on Advances in Education, Teaching &Technology 2017, "Global Education through technology – Challenges, issues and trends" http://educationconference.info/).

The research visits were developed such as:
- in Toronto at 2nd International Conference on Advances in Education, Teaching &Technology 2017, "Global Education through technology – Challenges, issues and trends", http://educationconference.info/, 29-31 of July 2017, presentation of accepted paper Fostering Teachers' Professional Development Through, co-authors Laura Malița, Gabriela Grosseck and Laurențiu Gabriel Țâru. The University of Toronto, regarding their experiences in developing MOOCs at the University of Toronto (http://guides.library.utoronto.ca/c.php?g=448614&p=3092283), as one of the main contributors worldwide of the theme, as well as the country where it was developed the first MOOC and where distance/online education is a core part of their education programmes.
- in Montreal at The McGill University, one of the top university in Canada that has considerable experiences in developing and running MOOCs (http://mcgilltribune.com/moocs/) already since 2011, and encountered more than 6 million participants.

Both universities have considerable experiences in long-time distance online education and running/developing MOOCs, on different areas and with different students, including international ones. This was the reason for visiting both universities, and such benefiting from a broader perspective, necessary for the last phases of the project, including the sustainability. Apart from general principles and issues regarding MOOCs (like MOOCs providers, case studies, best practices, challenges and certifications, OER, mixing MOOCs through other traditional courses etc.), 2 courses were also interested for the future research activities and sustainability of the project: "Social Learning for Social Impact" and "MOOCs for Library and

Librarians". Through such examples of courses, we would address librarian as future MOOCs' trainers and also will open to our society and community in order to offer them courses that are fitting their need as proper digital literate citizens.

After the mobility in the two major important cities/universities in Canada (Toronto and Montreal) we consider to reach the envisaged goals related to the project, for these activities, by research experiences, and receiving lot of ideas regarding future exploitations of MOOCs beyond what we were covered through the current project activities (besides for both teachers and students from pre-university and university level, which is the main target group of the project).

From the multicultural perspective, we collected materials (pictures, videos, online and offline resources such flyers and guides, but even other promotional materials), some of them in online format, which are presenting how the Canadian society is supporting and perpetuating the impulse for education and auto-education, the civic spirit, the will for education no matter form where and when, the age or professional status of students.

Between 5 and 9 September 2017, Alexandru Topirceanu was delegated in Marseille (France), and the purpose of the visit was twofold: presenting two papers at the International Knowledge-Based and Intelligent Information & Engineering Systems conference (KES), as well as attending plenary discussions on topics dedicated to e-Learning and online courses. The conference took place at the campus of Aix-Marseille University and the scientific topics which were openly debated were: Emerging intelligent technologies - eLearning, web mining machine learning, theoretical foundations of intelligent systems: theory, algorithms and methods and intelligent applications. The papers presented are titled: "Gamified learning: A role-playing approach to increase student in-class motivation" and "Decision tree learning used for the classification of student archetypes in online courses".

The first paper discusses the weak point of most classic educational systems, namely the constant decreasing motivation it gives students - individuals who have grown and are embedded in many virtual realities form where they draw the needed intrinsic motivation and energy. To overcome this limitation, we propose a method which simplifies the educational and grading systems both in modern schools and universities, with a strong applicability in MOOC courses. It relies on the fundamental aspects of the theory of Gamification, namely bringing motivational elements from (video) games into non-game contexts.

The second paper introduces an original set of student profiles specific to online courses, and it does so by means of data mining and supervised learning. We use the responses from an online questionnaire to gather detailed opinion from 632 students from Romania regarding the advantages and disadvantages of MOOCs, as well as the reasons for not joining online courses. Based on the extracted statistics, we present six decision trees for classifying the finalization and participation rates of online courses based on the students' individual traits.

Following the conference visit, he succeeded in meeting the objectives proposed by the NOVAMOOC project to support two scientific papers to be indexed by ISI / WoS in the Elsevier Volume of Computer Science. There were also established some new links to possible future research collaboration, as well as many practical tips for designing/organizing and most of all grading participants in a MOOC course.

Between 8-9 September 2017 the "New Trends and Perspectives in Open Education" International Conference took place in Timisoara, at West University of Timisoara. The project main event brings together researchers from different countries and continents. Some of the participants were participated in persons, but due to the main difficulties of covering travel expenses from different continents, most of the participants from outside Europe participated through the virtual presentations. Still they had the opportunity to attend online the conference sessions and to interact with the participants and such we were able to organize a conference that both confirmed the already established professional network colleagues but also enlarged these academic relationships.

As organizers of this event we were participated by both presenting project's results and activities and also by organizing a workshop on the MOOCs' topics. Thus, besides the enlargement of the professional network of people interested in such topics, we were disseminated through a global interested audience our main research results, developed during the project lifespan. We also established further research collaborations, respectively through research papers and materials and also through research projects.

Between 10-13 September 2017 Alexandru Topirceanu was delegated in Duisburg (Germany), and the purpose of the visit was multiple: (i) participation at the 4th European Network Intelligence Conference (ENIC) international conference, (ii) participation in plenary discussions themes dedicated to social media analysis, with interdisciplinary applicability, such as performance metrics in open education (MOOCs linked), (iii) and participation as a member of the PC (program committee) at the conference.

The conference took place at the University of Duisburg-Essen campus and the conference topics were: centralities and influence, diffusion of knowledge and information, algorithms and applications, social media content analysis.

The presented paper is entitled "Strength of Nations: A case study on the estimation of the influence of leading countries using social media analysis". The paper introduces four possible measures for quantifying the strength of a nation (Romania underlined), and discusses the advantages for each of them in turn. We show that considering weighted in- and out-degree offers the most intuitive results in terms of estimating how much influence a country dissipates over other countries. The methodology discussed here may benefit further disciplines such as social sciences and communication studies, open education and MOOCs, which often work with more qualitative approaches.

Following the conference visit, he succeeded in meeting the objectives proposed by the NOVAMOOC project to support a scientific paper to be indexed ISI / WoS in Springer Lecture Notes in Social Networks. There were also established some new ties to possible future research collaboration, as well as getting a number of practical tips for developing an estimate of the MOOC completion rate.

Between 18th and 28th of September 2017, Gabriela Grosseck and Laura Malita visited two of the most representative countries from Asia (respectively Malaysia and Singapore), regarding online courses and OERs. The goal of the visit was multiple as it was represented by a previously established meeting at The Open Learning Center in Kuala Lumpur and the participation to the eEL 2017 conference (7th International Conference on Education and e-Learning, 2017, http://www.e-learningedu.org/).

The research visits were developed such as:

- in Kuala Lumpur at The Open Learning, Kuala Lumpur, regarding their experiences in developing MOOCs at national level (https://www.openlearning.com/malaysiamoocs), as one of the main contributors worldwide of the theme, as well as the first country to give credit recognition for MOOCs.
- in Singapore at 7th International Conference on Education and e-Learning, 2017, http://www.e-learningedu.org/ , 25-26 of September 2017, presentation of accepted paper Big Data, Moocs, Learning Analytics And Teachers' Professional Development, co-authors Laura Malița, Gabriela Grosseck and Madalin Bunoiu.

The Malaysia is recognised worldwide as the first country that create a platform to award credit recognition and transfer for Massive Open Online Courses (MOOCs). Moreover, by being supported by their Higher Education Minister, all national public institutions should develop and run MOOCs through this platform, who was developed in partnership with Australia. Moreover, the OpenLearning platform is a social learning platform that enables anyone, anywhere to build engaging MOOCs that create interactive and empowering learning experiences. Therefore, their OpenLearning platform is revolutionising online teaching and learning by being both the Learning Environment and the Student Hangout. Nowadays, through the platform, there were running more than 2500 courses, with more than 10.000 educators (no matter of their subjects) and more than 300.000 students.

Educators love running courses through the platform, because learners are engaged, intrinsically motivated and productive. Likewise, students love doing courses through the platform because they are thought in their languages, they can interact with their peers and teachers and that the learning become more motivational.

Those were the reasons for visiting the institution, discussing with the colleagues Adam Brimo, Erica Cheong, Marsyitah Ismail and Razduwan Bin about their experiences from a broader perspective, what could be used in order to create policy recommendation for MOOCs recognition in Romania, possibility of further collaboration and even of creating a partnership in order to use their platform.

By participating to the conference, we were benefiting by expanding the professional network, establishing further way of collaboration with associate professor Chen Wenli, Learning Sciences and Technology (LST) Academic Group at the National Institute of Education (NIE), Nanyang Technological University, Singapore (NTU), with Nina Hansopaheluwakan, from University of Canberra, Australia and with Nicole Wang from Pennsylvania State University, USA.

After the mobility in the two major important cities/educational institutions in Malaysian and Singapore (respectively Kuala Lumpur & Singapore) we consider to reach the envisaged goals related to the project, for these activities, by research experiences, and receiving lot of ideas regarding future exploitations of MOOCs beyond what we were covered through the current project activities (besides for both teachers and students from pre-university and university level, which is the main target group of the project). Therefore, we will work in the next period even beyond the project lifespan for persuading the national responsible institutions for recognition of such courses and therefore for gaining credits through MOOCs. We will provide them examples as well as policies' recommendations based on what we were discussed with the Asian colleagues.

At the time of writing this report, the annual project reports (2015, 2016 and 2017) are available on the project's website - http://novamooc.uvt.ro.

The participation of the NOVAMOOC team in different events, other information regarding articles, studies, projects, or platforms analyzed by team members for research purposes, can be found on the project's Facebook page at: https://www.facebook.com/novamooc/.

In conclusion, we consider that we have achieved the indicators for the entire project.

Project manager, Assoc. prof. Gabriela Grosseck, PhD