

MOOCs for Teachers Professional Development — A University Challenge?

Laura Malita, Laurentiu Gabriel Tiru, and Gabriela Grosseck

Abstract—Due to the development of the current society, continuous professional development of teachers is an imperative for every educational system. Nowadays MOOCs are on a hype for educational systems, being one of the most discussed and debated university/academia/higher education topics. Still, Romania is beyond other countries in terms of both developing and formal recognising of competences acquired through a MOOC course. This is direct related to the scepticism of opening up education toward professional development of Romanian teachers, among other factors like language barriers, inadequate infrastructure, lack of time, lack of digital competences and skills (in order to know how to work in the online learning environment) etc.

The authors consider MOOCs as a sustainable initiative for professional development of Romanian teachers. Therefore, the aim of this paper is to present the results of an investigation carried out for more than 1000 Romanian preuniversity teachers, analysing their needs regarding this topic. The main finding amid teachers' training needs, underlined their preference for developing and updating the practical knowledge based on specific examples.

Moreover, we will address the need for changing the Romanian educational MOOCs' policies, but also more future and deeper topics to be studied in the following periods.

Index Terms—Continuous professional development, higher education, MOOC, teachers.

I. INTRODUCTION

Rapid technological changes are a reality of current societies which had/have an impact on different sectors [1], including all levels of education. One of the first effects could be seen in distance and online education which grew up exponentially in most of the countries and for a diversity of areas. The globalization era has also direct implications on the openness of the online content, that conduct towards the massification, which are, in short, the most important and consensual characteristics of Massive Open Online Courses [2] (MOOCs).

As universities are usually the engines of challenging the opportunities in/for education [3], MOOCs are an example of

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this idea, representing a “very promising innovation in HE” [4], a new teaching and learning model first occurred in 2008 by Manitoba University under the acronym CCK08 [5]. Since then, MOOCs are on a hype [6], became the educational buzzword of 2012 and grew up exponentially [7]. Thus, according to [8] at the end of 2016 there were announced 2,600+ new courses, taking the total number to 6,850 from over 700 universities and having counted more than 58 million registered users.

Speaking about Romania, the higher education system is often criticized for being too embedded in tradition, lacking the ability to rapidly change or innovate. Moreover, a large number of universities continue to offer the majority of their courses face-to-face, which has limited the access to preponderantly students who live in surrounding areas [9]. On the other hand, Romanian higher education system grips with an alarming decrease in university enrolments, a regrettable rate of dropping out, demands for twenty-first century learners, and a need for a more accentuated technological development. Therefore, it is stringent to respond to these challenges and to the rapidly evolving of digital technologies with a “radical shift to new approaches in higher education in Romania” [10]. Such approaches would benefit not only higher education students and academics, but even teachers from Romanian preuniversity level [11], for which the continuous professional development is also vital and is mostly done through courses offered by/in universities.

II. AN INSIGHT TO METHODOLOGY

In order to identify ways of using the online environment in both teaching and professional activity of teachers in the pre-university environment, the authors of this paper conducted an online survey. When we were building the research tool we did not relate/refer to other similar studies because we tried to investigate the Romanian teachers' experience in using authentic online environment. Thus, the questionnaire was built by two dimensions that reach the estimated objectives: *previous experience in using the online environment as a learning environment* and *teachers' training needs on the use of online tools*.

For the first dimension, we chose the following variables: online learning alternative to traditional learning; frequency of use of some online educational resources (video-sharing sites like YouTube, digital data repositories); operationalization of the online learning space by identifying some sites that teachers have used in the processes of documentation and teaching / learning and previous experience with using online documentary / training sources.

For the second dimension, we tried to capture: the

advantages and disadvantages of online courses and identification of the training needs by identifying those necessary aspects in using the online environment as learning resource.

In order to make comparisons between various categories of teachers, some factual data were requested: gender, age, level of education, teaching experience, education cycle and curriculum.

A. Population and Survey Sample

The target population was composed of pre-university teachers, regardless of their education cycle they operate in (preschool, primary, secondary or high school). The sample is one of convenience, built by launching some invitations to participate in the study. The data is not representative for the entire teacher population of Romania, but it can be a starting point for future studies and discussions.

B. Data Collection

Given that we wanted to collect data from as many Romanian counties as possible, we chose to develop an online questionnaire. Invitations to participate to the study were sent in two ways during the fall of 2016. Thus, there were used both the existing communication channels of the management structures in the pre-university environment as well as the social sites, especially Facebook (discussion groups of teachers in the pre-university environment) (i.e. Dascal.ro (Teachers.ro, Engl.) – a group of over 17 thousand Romanian teachers).

To get a larger number of responses we sought the support of the county school inspectorates in all the counties. They in turn distributed the questionnaire link to the fellow teachers in the county with the request to participate in the study. To make sure that teachers' participation in this study is voluntary and informed, we prepared an email with the objectives and the nature of the study. This email was sent along with the questionnaire link by the county inspectorates via the online communication channels they usually use.

There were also identified discussion groups of the teachers' in the pre-university environment and there were launched invitations to participate in the study by filling in the online questionnaire.

On 17th of November 2016 the sample had less than 900 respondents. To give a chance to express their views to the teachers who received the invitation later, the data collection period was extended until the first week of December 2016 – the total number becoming 1008 respondents.

The sample structure on socio-demographic variables was as follows: 12,9% male and 87,1% female. The structure of our sample regarding the respondent's level of education shows that most of the teachers that were investigated (52.5%) are higher education graduated, whilst almost 40% are post-graduated.

Only 4% of them have a medium level of education, being young teachers that will graduate in the following period or older teachers that accessed the preuniversity level long ago when it was possible only with Bachelor studies. Likewise, 3.7% of investigated teachers have PhD studies, that are on the highest level of professional development of preuniversity teachers.

TABLE I: EDUCATION CYCLE THE RESPONDS OPERATE IN

	Responses	
	N	Percent
Education cycle		
Kindergarten teaching cycle	113	9.0%
Primary teaching cycle	284	22.6%
Secondary teaching cycle	421	33.5%
High-school teaching cycle	392	31.2%
Superior-high school teaching cycle	48	3.8%
Total	125	100.0%

(The number of respondents is higher than the sample size because some respondents teach within several educational cycles.)

In our sample, the highest percent (33,5%) belongs to teachers who teach at the secondary level of education, followed closely (with 31,2%) by high-school teachers (Table I). 9% of the respondents are teachers at kindergarten, whilst 22,6% are involved in educational activities from primary education level. 3,8% of the respondents said they are teachers from superior high-school teaching cycle, whilst 24,8% of the respondents are teaching in more than one educational level.

TABLE II: CURRICULAR AREA MOST SUBJECT TAUGHT FALL INTO

	Frequency	Percent
Pre-school education	95	9.4
Primary education	205	20.3
Language and communication	144	14.3
Mathematics and sciences	296	29.4
Human and society	95	9.4
Arts	11	1.1
Physical education and sports	16	1.6
Technologies	91	9.0
Counselling and guidance	33	3.3
Special education	22	2.2
Total	1008	100.0

Regarding the structure of the sample from the curricular area point of view (Table II), 29.4% of the respondents are teaching STEM, 20% of them are general educators from primary education level, 14,3% of the respondents are teaching Languages and Communication. On a low level, 9,4% of them are teaching Human and Society, whilst 9% are teaching technologies related disciplines. The rest of the respondents have registered under 5%, such as Arts (1,1%), Physical Education and Sports (1,6%), Counselling and guidance (3,3%) whilst Special education has 2,2%.

Table 3 shows that 3. 66.7% of the respondents are teachers in urban area, whilst 33.3% of them are from rural area. 4% of them are teaching in educational institutions from both areas.

C. Discussions and Results

Given the study objectives, the identification of the practices for the use of the environment in their professional activity and the teachers' training needs, we will present univariate descriptive analysis of the responses received but

also some bivariate analysis presented as comparisons between various categories of teachers. To exemplify the modality of presenting the data but also for an overview on the final results, we will present some of the analyzed variables.

TABLE III: ACTIVITY ENVIRONMENT

		Responses	
		N	Percent
Activity environment	Urban	700	66.7%
	Rural	349	33.3%
Total		1049	100.0%

(The number of respondents is higher than the sample size because some respondents teach within educational cycles both in the urban and rural environment.)

At the question “Do you consider that online learning is an alternative to traditional learning?” one may notice that the respondents consider - in large proportion (87.3%) that online learning can be considered as an alternative to regular learning, the traditional learning. The high percentage indicates a change trend among teachers who accept the online education/learning as “desirable”.

At the question “To what extent have you used so far in your professional activity (teaching / learning)” respondents evaluated the use of certain sources of information placing them on a 1 to 5 scale where 1 means reduced use (to a very small extent) and 5 means frequent use (to a great extent).

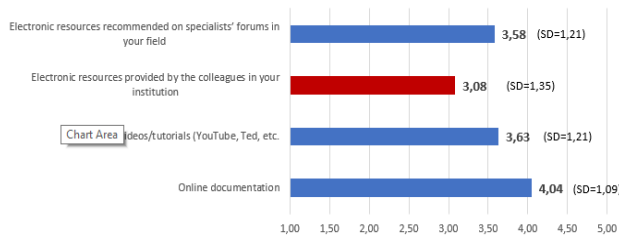


Fig. 1. Digital sources used in teaching and learning.

As Fig. 1 shows the online documentation (in general) is the most often used method. Similar values were obtained by videos / tutorials and the educational resources identified on specialists' forums in the field of activity. The lowest value was obtained by the indicator "Electronic resources provided by the colleagues in your institution". One may notice that the documentation activity is an individual activity or upmost organized on professional groups.

“In the near future – do you intend to learn something new or to strengthen the knowledge that you already have?” For the teachers in the pre-university level of education system, learning is a current and regular activity. This reality is also reflected by the answers given to this question where a percentage of about 98% of the respondents mentioned that in the following period they would learn something new or would consolidate their knowledge.

The online documentation is generally preferred by respondents when they assess the sources they would use to search for new information (Fig. 2). The other values are also high and approach the value of the online documentation. Based on the final results, it will be interesting to identify whether certain categories of teachers made different hierarchies of these potential documentary sources.

We will present some of the issues that specialists

enumerate among the advantages of online courses:

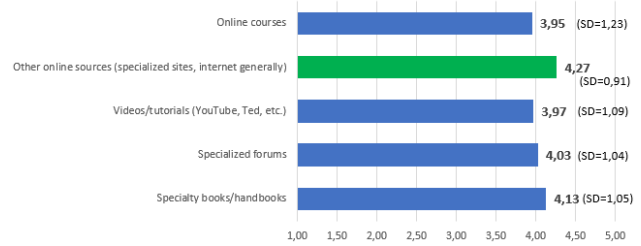


Fig. 2. Sources to search for new information.

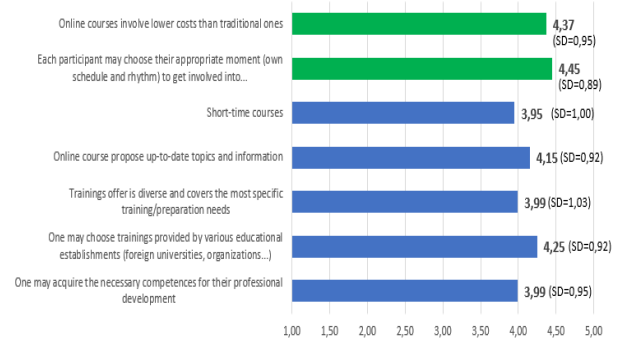


Fig. 3. Advantages of the online courses.

Based on the answers provided by the respondents one can make a top of advantages of the online courses as perceived by teachers (see Fig. 3). Their own rhythm and the lower cost of online courses versus traditional ones are the two advantages on top positions in the sample teachers' assessment. On the other hand, hierarchies may also be made according to the categories of teachers who answered the questionnaire. For example, different tops can be made of teachers in rural areas and in urban areas.

We will also present some of the aspects that specialists consider as disadvantages of online courses.

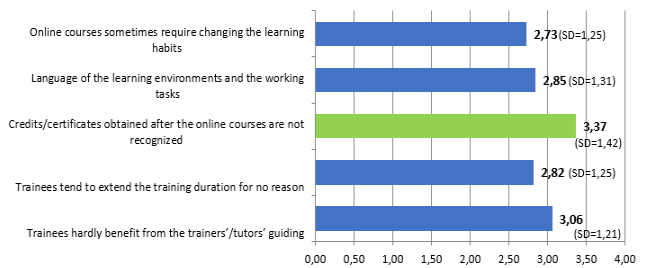


Fig. 4. Disadvantages of online courses.

A list of potential disadvantages of online courses (as emerged from the specialized literature) was subjected to teachers' assessment (Fig. 4). Just as with advantages, the rating scale was 1 to 5, where 1 means *very little extent* while 5 = *very high extent*. Based on partial results, we can say that the most acutely perceived disadvantage was that the certifications obtained from online courses do not have the value of the certifications obtained by traditional methods (training courses). For three of the five disadvantages the average responses did not exceed the middle area of the scale which can be an indicator that they are not perceived as major disadvantages.

Applications and practical examples are identified by teachers as requiring additional attention. The 4.16 (SD=1.04), the maximum is five, average obtained this

aspect on top of the teachers' training needs (Fig. 5). An interesting element of the training needs top is granted by the position occupied by "using the internet", that is the last position. The teachers' average was 3.17 (SD=1.35). Comparison can be made on the final data to see whether this top is consistent among various categories of teachers.

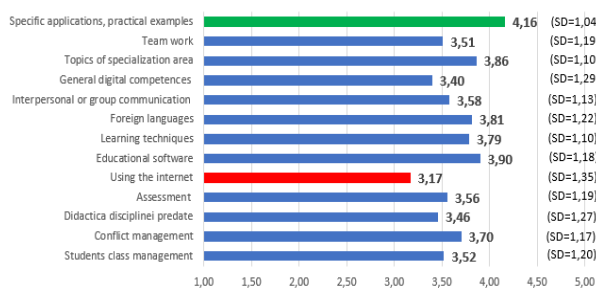


Fig. 5. Training needs

From a methodological point of view, this study is a real challenge, especially because it seeks to attract a significant number of teachers from the pre-university 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 the identification of a direction of opinion of the investigated population regarding the use of the online environment as a learning environment.

III. CONCLUSION

As we underlined above, the results of our study indicate that a large part of the sample confirmed to know nothing or too little about MOOCs. Therefore, the main challenge for our university comprise in training competent teachers in order to know the purpose of a MOOC and understand its potential benefits and limits, both from practical and theoretical perspective [12].

Not surprisingly, as other studies also suggested [13]-[15], Romanian teachers prefer courses offered in their native languages, being more confident in their long-term activities in order to assess the knowledge of the language as well as to improve their linguistic competences.

In regarding with one of the educational problems that MOOCs could solve worldwide, namely providing free education to highly qualified professionals, the Romanian teachers need in the first place to update their digital competences. As [16] said the "curriculum change is not easy for teachers, in any context, and to ensure teachers are supported, scaled solutions are required".

In addition to that, according to former Minister of Education, Adrian Curaj, a bigger effort should be directed towards changing the Romanian policies related with two dimensions: formal recognition of skills and competences acquired through online courses (MOOCs) and introduction of new associated qualifications in our national register of possible occupations and qualifications. Most of the EU Member States are formulating and at least beginning to implement policies that move their educational systems from being predominantly input-led and subject-oriented towards curricula [17] which include competences, cross-curricular activities, active and individual learning, being more focused on learning outcomes than on formalizing the learning and

how it is occurred. Notable in this respect are Leeds and Open University from United Kingdom, Delft University of Technology from Holland; Swiss Federal Institute of Technology in Lausanne (EPFL) and the list could continue with examples of other non-EU universities [18].

Taking into consideration those already mentioned we are hoping the wind will blow more strongly over the Romanian higher education system [19] in order to facilitate and support more Romanian MOOCs to be offered, for the benefits of teachers who are interested in continuing their professional development [20], but also for the benefit of other indirect beneficiary, their students and the society as a whole.

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