INTEGRATING MOOCS INTO THE SYSTEM OF LIFELONG LEARNING: TSU EXPERIENCE

O.M. Babanskaya, G.V. Mozhaeva, U.S. Zakharova

National Research Tomsk State University (RUSSIAN FEDERATION)

Abstract

Taking into account money and other resources invested into massive open online courses (MOOCs) production universities face a challenge of MOOCs integration into higher and further professional education. Is university able to warrant its investments into MOOCs? What decisions should a university consider: selling certificates to MOOC completers, launching chargeable MOOC specializations or online degree programs? How to adapt MOOCs to the needs of a broad audience so that both on-campus students and international learners could benefit from it including these courses into their individual curricula? Tomsk State University (TSU) works in an effort to solve this problem. This paper is devoted to the model of organizing e-learning in a classical university basing on MOOCs and its integration into the system of lifelong education, as well as to the steps of maintaining this complex process in the framework of current trends in e-learning.

Keywords: MOOC, blended learning, MOOC monetization, lifelong professional learning, corporate education, VET, credit transfer, MOOC recognition.

1 INTRODUCTION

Wide spread of massive open online courses (MOOCs) that are presented as a pinnacle of education for everyone led to a new education paradigm making learning truly independent [1]. MOOC audience geography is vast: the USA, Germany, the UK, India, Chinese People's Republic… The Russian Federation joined this race of education and technology, too, launching in 2013 - 2014 an academic enlightening project *Лекториум* (Lektorium) (http://lektorium.tv/mooc), a project *Универсариум* (Universarium) (http://universarium.org) and some others. At the same time several Russian higher education institutions (HEIs), such as Higher School of Economics, Saint-Petersburg State University, Moscow Institute of Physics and Technology and Tomsk State University entered the Coursera platform (http://coursera.org/about/partners/ru).

MOOCs rash in global educational landscape triggered emergence of contradicting opinions - from severe rejection as if MOOC is a quasi-education with a simplified content and a form to an enthusiastic reception of MOOC as a new learning format that will destroy universities and substitute them. Those who are "pro" consider MOOC education as an effective and up-to-date mechanism. Those who are "contra" express their suspicion to this way of acquiring education in general [2] and emphasize a deficiency in developed general pedagogical principles for a global introduction of this technology [3]. The most heated debates about MOOCs are being led in classical universities which historically consider education with traditional and fundamental knowledge acquired inside the HEI.

This paper is devoted to the e-learning model based on MOOCs in a classical university and its integration into the system of lifelong learning. E-learning introduction into the education of a huge university is time and efforts consuming process that requires a complex approach including several stages that are covered in the paper.

The study is based on the analysis of the major international online platforms and Russian universities involved in the design of the national online platform. The new direction of lifelong university learning influenced by MOOC is considered judging from National Research Tomsk State University, a classical university, which is the first Russian HEI on the *iversity* European platform and the fourth one on the *Coursera* American platform.

Methodology of the study includes description of the empirical experience, statistical data processing and comparative analysis of the results.

2   STRATEGIC READINESS OF THE UNIVERSITY

TSU project on design, promotion and implementation of massive open online courses has been realized since June, 2014. TSU MOOCs are available on such online platforms as *Coursera*, *iversity*, *Лекториум* (Lektorium) and TSU platform for on campus students. The project is aimed at achieving the following objectives:

- improving the quality of the university education programs as a result of considering the feedback received from a wide audience from various regions in Russia and other countries;

- providing various groups of audience with opportunities for lifelong learning;

- drawing attention of a great number of Internet users including potential applicants to Bachelor's or Master's degree programs to the university;

- analyzing the efficiency of online mechanisms used for drawing user's attention to the university educational content.

What does university need for the online project? First and foremost it needs a strategic readiness which includes university recognition in a scientific and academic society, active organizational and financial support provided by the university authorities. Another important factor is an institutional potential for launching and supporting MOOCs, that is a highly qualified project team - the project peopleware. The next one is technical and technological maintenance (an up-to-date TV-studio or a self-recorded studio, high speed Internet connection, required software and so on). MOOCs production and integration into the university education programs require local regulatory and methodological documents. Research activity aimed at studying IT applied to a learning process, psychological, pedagogic, ergonomic, cross-cultural peculiarities of e-learning, adapting new technologies to the university conditions and, consequently, elaborating methodologies for introducing them into the university learning process, the team and course instructors professional training, permanent support, the education results and project efficiency analysis.

Tomsk State University has a separate department, Institute of Distance Education, that is responsible for all the stages of MOOC project.

3   MOOC PROJECT AT TSU: STAGES

Introduction of e-learning into the learning process at TSU is performed in several stages:

3.1   Planning a MOOC

- setting objectives for the online-course and priority-oriented education directions;

- holding on campus competition for selecting the best instructional design for online courses; the screening committee focus on the following rubrics in the application form: short information about the course and its instructor, instructor's objectives, the course target audience, required starting expertise of learners in the topic, academic workload, learning outcomes, the course program, types of assignments, evaluation formula, course shooting location, promo script, instructor's backlog (for instance an e-learning course in LMS MOODLE or some experience in video lecturing), experience in e-learning; the application review is accompanied with a public presentation of these course ideas, finally we announce the competition winners;

- instructors' training in online pedagogy, working with a camera, as well as trial lecture recording and discussing this experience. On a regular basis TSU MOOC team hosts Siberian MOOC schools. It allows potential online instructors to get acquainted with all the stages of developing a MOOC, to design a program and an approximate instructional design of the future course. TSU MOOC instructors who have already launched the course share their experience in designing a course and teaching online learners on a platform with the newcomers. Another group of Siberian MOOC school participants - future MOOC project managers - elaborate a business plan for a MOOC project in their own university.

- building a course project team, defining the work that needs to be done, setting the deadlines and preparing the project accounts valuation;

- choosing the platform for the course, signing the MOOC requirements specification with the MOOC team.

3.2 Online course production

- preparing the MOOC instructional design (video lecture scripts, references, assignments, instructional recommendations on studying a course module, additional materials and literature);

- performing the course content review with a help of the specialists in the subject area of the MOOC. This review objectives are the following:

1 to evaluate the MOOC relevance, exhaustiveness and reliability of the provided data, the course potential target audience;

2 to define if the references are reliable and author's comments are reasonable;

3 to understand if the examples and illustrations provided by the author are correct and appropriate;

4 to make the mind concerning methodological value of the course, if it meets the requirements to the way of teaching the subject (if the MOOC is planned to substitute an on campus course and to be integrated into the curriculum). Therefore, experts should answer the question "Do the course academic workload, curriculum, assignments and references respond to the on campus course requirements?"

5 to consider the way of presentation: the material is easy to comprehend, there is enough number of examples in the course, the material is well-structured, it correlates with the MOOC topic and the target audience;

6 to see if the author has any presentation peculiarities, whether they are appropriate to the course (should we get rid of them or vice versa recommend the author to keep on practicing them in the video lectures?).

The expert should provide valid conclusions about the MOOC materials in general, constructive feedback, recommendations and suggestions on improving the MOOC.

- editing the course materials basing on the expert feedback (if applicable);

- shooting lectures and promo videos;

- arranging the video lectures;

- editing the course text material;

- uploading the course materials onto an online platform, testing the course there, training the instructor to work on a platform;

- signing an instructor's release of an absolute right allowing the university to use, publicly broadcast, distribute, reproduce and digitize any course content.

3.3 Course promotion

- preparing course advertisement materials (that may be performed simultaneously with the second stage);

- defining the advertising methods, forming a potential MOOC learners data base;

- promotion campaign.

3.4 Teaching the course

- methodological support to the learning process and supporting the forum guaranteed by the course authors and their assistants;

- technological support (if the course is available on TSU online platform for an on campus education);

- progress review (examination and certification) in case the course is available on the TSU platform or the Russian platform *Лекториум* (Lektorium).

3.5 Analysing the project results

- questioning MOOC learners, analyzing the audience and their learning outcomes. There are two questionnaires in our project.

  The entering questionnaire gives us an idea of TSU MOOC learners. 4524 learners out of the universal set of 17520 people took part in the survey. The questionnaire results show that 25% of our learners are foreigners from over 80 countries, 60% of learners are aged from 17 to 35, 70% of our audience completed a higher education, 55% of those who have been interviewed have heard about TSU for the first time thanks to our MOOCs.

  The closing questionnaire is aimed at analyzing the quality of our MOOCs. Its results are the following: 93% of 417 learners (the universe set is 1668 people) consider video lectures to be the most useful MOOC element, one third of them rates tasks and additional materials as helpful elements, 85% will use MOOC materials in their professional activity, 95% will recommend MOOC to their friends. According to TSU MOOC learners, their level of expertise in the subject has increased more than twice. On average 10% of TSU MOOC learners complete the course.

- analyzing the video playback (if the lectures are uploaded to the YouTube);

- making changes to the course basing on the analytics results to achieve a higher level of quality;

- questioning TSU MOOC instructors to facilitate and optimize their work in the project.

  24 instructors took part in this anonymous survey and majority of them claimed that the most troublesome experience was connected with a sort of uncertainty at the first stages of the project, as for the video production instructors found it difficult to lecture in front of a camera. These problems are being solved with new competences being acquired [4]. Instructor is in the center of modern education trends, constantly acquiring new knowledge and skills. He/ she is not just an instructor anymore, he/ she is an instructional designer, a strategist, educational TV presenter with a potentially huge audience, a web psychologist, and a designer of education ways who joints pedagogical professions of the future [5].

  Whatever new competences instructors acquire during the MOOC project, the course success to our mind depends first and foremost on their involvement into the learning process. TSU MOOC authors encourage online learners to be active at the forum, organize various informal quizzes and contests, as well as videoconferences, and reward the best learners with memorable gifts and books. Authors are able to involve online learners into the scientific and academic activity at their faculties, select the most talented youth to study at the university.

4   MOOC MONETIZATION

MOOCs are expensive projects. One MOOC production in Russia costs about $7,000 - 17,000, in the USA - $15,000-30,000. Only major universities and projects that are able to raise multimillion funds could take such expenses.

At this point the question logically arises - how a university may have its money spent on MOOCs back?

MOOC developers come up with various ways of monetization. Here are some of them:

1 selling certificates while course itself is free - $29 for learners from developing countries, $49 for learners from developed countries (Coursera);

2 HEI - enterprise cooperation when MOOC is presented as a platform for education, recruitment and promotion;

3 offering a course for a tuition fee (*Udemy*) - up to $100 [6];

4 offering an online specialization with 4-10 courses in it for a tuition fee (Coursera) - $200-500;

5 offering an iMBA or other online master degree programs with several online specializations in it (Coursera) - $20,000 on average;

and others.

The most popular way of MOOC monetization is selling certificates (way #1). On the one hand, it involves only 3-7% of MOOC completers. On the other hand, it is the way that provides MOOCs with rich prospects of being integrated in the university basic and vocational education programs by means of a credit transfer and revalidation of the MOOC results into the professional education programs.

While foreign universities focus on MOOC monetization in the framework of higher education, Russian HEIs prefer a sphere of vocational education. According to the federal law "On education in the Russian Federation" there is an additional education for children and adults in Russia. The most popular kind of that is vocational education and training (VET) that is professionals-oriented. It is a formal education that finishes with a certification. MOOC monetization ways #2 - 4 suit Russian VET system the best. Moreover, universities and online platforms successfully adapt these ways to the VET market requirements. The most active Russian player in MOOC monetization via VET is *Лекториум* (Lektorium) online platform and those HEIs that provide their courses there.

The last way #5 proves that monetization is an issue for higher education. The University of Illinois experience demonstrates that the fee for an iMBA that has been launched on Coursera in January, 2016 is four times lower than a similar on campus education program. This iMBA program is remarkable for its high interactivity and support provided by the instructors and the Coursera team. Consequently such a conclusion may be made that this format of online education is very promising.

5   INTEGRATING MOOCS INTO THE PROFESSIONAL EDUCATION PROGRAMS

Online specializations and online degrees would be of high demand if certain mechanisms of MOOC integration into the education programs were introduced. These mechanisms should guarantee awarding a document that is valuable for employers and other education institutions. It will meet the needs of a learner as well as an employer [7].

5.1   International experience

This problem is being addressed in many countries. In 2013 the American Council on Education recommended to transfer credits for MOOCs offered by some of the universities in the USA colleges [8]. Learners were to pass an online exam (via skype, webinar or other) in a special certification service. Some HEIs, Technische Universität München, for instance, transform MOOCs into formal education giving their students an opportunity to get a credit passing an internal oral examination on the course [9]. Other universities, like L'Université Jean Moulin Lyon 3, offer VET programs based on MOOCs accompanied with face-to-face tutoring and passing a verified exam (to acquire a recognized university degree) [10].

The European Commission provided support for the VMPass project (Recognition of VIRTUAL MOBILITY and OER-LEARNING Through a Learning Passport) (http://vmpass.eu/), that joins learner's achievements both in formal and non-formal education. Therefore, VMPass is an attempt to equate online lessons with real ones with an option of a credit transfer in traditional education institutions.

Another initiative is the recommendations on the recognition of non-formal education made up by the Council of the European Union. This document invites partner countries to begin developing their national procedures to achieve this objective no later than in 2015 [11].

One of the ways of achieving this objective is launching a national online education platform. So, in 2013 learners got an opportunity to study courses on Chinese (http://chinesemooc.org), in 2014 - on French (http://sup-numerique.gouv.fr), and in 2015 - on Russian (http://npoed.ru) national platforms.

5.2   Russian experience

Ministry of Science and Education of the Russian Federation supports an idea of creating and developing national online platforms allowing Russian HEIs to transfer credits acquired on the National platform of open education as well as leading world platforms like Coursera, EdX, Udacity. The Russian Ministry supposes that e-learning triggers variability of educational programs that consider learners' individual needs, combining educational and professional activity, and providing an opportunity to get further professional expertise in the chosen sphere, involving more people into the learning process.

According to the Council on Open Online Education that joins rectors of the leading Russian universities and representatives of Federal Education and Science Supervision Agency and Ministry of Science and Education, open online courses with high requirements to their quality and their outcomes evaluation procedures being granted may substitute a significant part of education programs. It is worth mentioning that students will be guaranteed with an opportunity to choose between these two options. It is an educational institution that I responsible for the quality of education and should make a decision on MOOCs credit transfer [12].

There are already some examples of such decisions. For example, Master's degree programs offered by the Higher School of Economics include MOOCs that are recommended to students [13]. Ural Federal University offers on campus education based on MOOC as soon as appropriate online course appears. The majority of leading Russian universities have started their way in this direction preferring blended learning based on MOOCs and integrating online courses in the basic and VET programs.

5.3 TSU's experience

Tomsk State University policy concerning MOOC recognition is presented in the local regulatory document - *Regulations on open online courses credit transfer at TSU*. It covers the procedure and the conditions of that credit transfer, requirements that e-learning results should meet to be transferred, as well as rules of academic workload definition in credits, credit units or academic hours [14].

MOOC credit transfer is organized as follows. A supervisor of the basic educational program (BEP) with the leading instructors builds up a list of MOOCs that are recommended for the students to acquire in a form of e-learning on an online platform. This list should include the education formats and TSU BEPs these MOOCs are appropriate to, what is the MOOC's place in the curriculum (the main part or the vocational one, disciplines that are acquired on students' choice, an elective course and so on). This list needs to be approved by the faculty learning and methodology committee (for a single-faculty BEP) or the Council on BEP (for a multifaculty and network BEP), to be published in the e-learning management system and to be shared with all the learners who have a right to choose any MOOC out of that list that is possible to update twice a year or more frequently before the next academic term starts.

To transfer the credit a MOOC learner should submit an application to the BEP supervisor, accompany it with a certificate that this subject is included into the learner's individual curriculum (in a form of elective course as well) and is approved for the credit transfer.

The credit transfer implies that the whole number of credits, credit units or academic hours that are included into the certificate should be taken into account. If the credit calculation techniques at TSU and that Russian or foreign HEI that offers a MOOC on a platform considerably differ the number of credits should be calculated once again according to the calculation technique that is to be defined by the faculty learning and methodology committee or the Council on BEP.

If the MOOC hasn't been included into the list the decision is to be made by the committee of three people that the BEP supervisor should choose. That committee has a right to schedule an examination on the subject for that learner or reject his / her application on the credit transfer.

In case students take a course on TSU online platform there is an option of taking an exam in TSU computer classrooms with an identity validation and controlling the exam procedure.

At the same time MOOC results might not transferred to the BEP but form a portfolio that is getting more and more important at the labor market. Employers started to consider certificates on completing MOOCs as an additional argument in choosing a person for a job. But Russian employers need a university document on completing a formal education program. This makes MOOCs a promising issue in VET.

A model of VET based on MOOCs has already been tested at TSU. As our experience shows, about 10-20% of MOOC learners are ready to complete their education on VET the basic content of which has been covered in the MOOC for a moderate amount of money.

MOOC integration into VET is performed in such a way: on successful completion of a MOOC learners can choose to study further course material on campus or in a form of e-learning (in LMS MOODLE, for instance) and take an exam allowing them to get a certificate on professional further training. The MOOC workload and other parameters are defined by the educational program (VET or additional education for children and/ or adults). Recommended course duration is 2 - 3 weeks (for vocational

education programs) and 6 - 9 weeks (for VET programs) with 8 - 12 academic hours in a week depending on the MOOC difficulty level.

Currently TSU is working on a model of integrating online specialization into the program of professional retraining that is another type of VET in Russia. All learners who successfully completed our online specialization are going to be offered with a diploma on professional retraining if they take one or two additional modules on the same topic at TSU. This approach should attract Russian learners who have professional education and are interested in developing it into the formal education framework (being awarded with a university diploma on additional professional educational).

6 CORPORATE EDUCATION VIA MOOCS

One of the promising market developments according to the specialists is MOOC integration into a corporate education that is a part of VET in Russia. J'son & Partners Consulting predicts corporate segment to be the major part of Russian online education by 2018 [6].

At the Coursera Partners Conference in Hague in March, 2016, where the authors of the current paper participated, several corporate education projects in Singapore and Malaysia have been announced. It is worth mentioning that it is government that pays for those employees studying Coursera courses and specializations. Moreover corporate education is accompanied with special products and services offered to the companies that are aimed at supporting employees as well as the employers. Therefore, all participants benefit from platform-university-enterprise cooperation. Employees acquire new skills; employers have their staff trained, their productivity raised and their brand more recognized while universities rich a new audience, get extra income and understand the market better. Nikhil Sinha, the Senior Advisor to the CEO Coursera, highlights that to take part in this project universities need to design a new course content leveraging of their skills and experience, demonstrating flexibility in pricing. Coursera has already launched pilot corporate education projects with the leading world companies (Loreal, AxisBank, BNY Mellon Bank and others)

Involving new learners into the university online courses through collaboration with employers and corporate partners seems to be quite promising. On the one hand, it would contribute to dual education and developing partnership strings, on the other hand, university would maintain its position in VET.

The project expected results for the university are:

- attracting companies investments into MOOCs;
- designing practice MOOCs that leads to broadening the audience of the university courses;
- recruiting talented highly motivated students to joint (university - enterprise) practice-oriented education programs;
- promoting the university MOOCs in non-academic environment.

The project expected results for the partner enterprise are:

- training their staff with the university courses and programs designed on request;
- solving partner's case studies (crowdsourcing) by the university MOOC learners on an international online platform;
- benefiting from university's human, technical and technological resources to design online courses of high demand with no extra financial investments into the plant;
- recruiting people for the job or freelance employment in a company out of the talented MOOC learners;
- promoting internationally the company brand via joint MOOC production
  and others.

7 CONCLUSION

Having analyzed international and Russian experience in MOOC integration into the HEI basic and vocational education programs, its conditions and mechanisms we came to the conclusion that wide adoption of MOOCs leads to a gradual blending of formal and non-formal education that is already

evident in vocational education. The MOOC monetization model via VET designed and approved at Tomsk State University is one of the most effective ways of getting the money invested in online courses back in Russia.

MOOC integration into the Russian higher education programs is still at the starting point and Russian HEIs have no significant experience in MOOCs credit transfer. While majority of HEIs are suspicious of e-learning, the leading universities in Russia break that hard way facilitating it for others but granting themselves a place in the forefront of future education.

To sum up the results of the current study we should say that e-learning recognition in HEIs and on the labor market holds out great promise for MOOCs as a promising tool for lifelong learning.

REFERENCES

[1]   Moore, M. G. (2013). Independent Learning, MOOCs, and the Open Badges Infrastructure. *American Journal of Distance Education*, 27:2, 75-76. doi: 10.1080/08923647.2013.786935

[2]   Baggaley, J. (2013). MOOC rampant. *Distance Education*, Vol. 34, No. 3, 368–378. doi: 10.1080/01587919.2013.835768

[3]   Clarà, M. & Barberà E. (2013). Learning online: massive open online courses (MOOCs), connectivism, and cultural psychology. *Distance Education*, Vol. 34, No. 1, 129–136. doi: 10.1080/01587919.2013.770428

[4]   Andone D., Mihaescu V., Ternauciuc A., & Vasiu R. (2015). Integrating MOOCs in Traditional Higher Education. *EMOOCS 2015. Proceedings of the European MOOC Stakeholder Summit*, 73.

[5]   Атлас новых профессий. Retrieved from http://atlas100.ru/catalog/obrazovanie/

[6]   Рынок онлайн-образования в России и мире: сегмент массовых онлайн-курсов. Retrieved from http://json.tv/ict_telecom_analytics_view/rynok-onlayn-obrazovaniya-v-rossii-i-mire-segment-massovyh-onlayn-kursov-20141209065340

[7]   Inamorato dos Santos A., Witthaus G., & Punie Y. (2016). OpenCred: exploring issues around the recognition of non-formal learning via MOOCs in Europe. *EMOOCS 2016. Proceedings of the European MOOC Stakeholder Summit*, 495 – 497.

[8]   Masterson K. (2013). Giving MOOCs Some Credit. Retrieved from http://www.acenet.edu/the-presidency/columns-and-features/Pages/Giving-MOOCs-Some-Credit.aspx

[9]   Kruse A. & Schulze E. (2016). How MOOCs Are Impacting Campus at the Technische Universität München. *EMOOCS 2016. Proceedings of the European MOOC Stakeholder Summit*, 342 – 344.

[10]   Huin L., Bergheaud Y., Codina A., & Disson E. (2016). When a University MOOC become a professional training product. *EMOOCS 2016. Proceedings of the European MOOC Stakeholder Summit*, 351.

[11]   Council Recommendations of 20 December 2012 on the validation of non-formal and informal learning. (2012). Council of the European Union. Retrieved from http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32012H1222(01).

[12]   Некачественно преподаваемые дисциплины и низкоэффективные методы обучения в вузах могут заменить современные онлайн-курсы (2015, November 26). Retrieved from http://минобрнауки.рф/новости/6970

[13]   МООС: дистанционные он-лайн курсы. Retrieved from https://www.hse.ru/ba/journ/mooc

[14]   TSU MOOC project. Retrieved from http://mooc.tsu.ru/en/