

# MOOCS AND MUSEUMS STUDIES EDUCATION: OPPORTUNITIES AND PROSPECTS IN THE DIGITAL ERA

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## Abstract

In present time Massive Open Online Courses (MOOCs) are becoming more popular. Initially, the concept of “MOOCs” was used in the USA in 2008. Since 2011 they have become mass phenomenon in a result of development of Coursera in Stanford University. Since 2013 MOOCs have widespread. The USA plays a leading role in MOOCs application, where more than 15 platforms (Coursera, EdX, Udacity, MIT Open Courseware, etc.) are developed. European countries have their own platforms too, such as FutureLern (GreatBritain), Iversity (Germany), Crypt4you (Spain), OpenUpED (European Community), Lektorium and Stepic (Russia), etc. Most of leading countries in Asia develop their platforms, such as XuetangX and Chinese MOOCs (China), EduKart (India), as well as OpenLearning (Australia). Such disciplines as physics, computer science, mathematics, natural science, etc. are presented generally at MOOCs platforms. At the same time humanitarian and social science disciplines (linguistics, history, physiology, art, etc.) are not widespread. Recently, museum studies have been presented at MOOCs platform too. The purpose of the given paper is to analyze museum studies presented at MOOCs platforms. The following aspects are studied in the paper:

- the quantity of platforms and MOOCs in museum studies;• the main presented questions at these MOOCs;
- the advantages and disadvantages of MOOCs in museum studies;
- the possibilities and outlook of their application.

The books and papers for Massive Open Online Courses, as well as developed MOOCs in museums studies are used as data for this paper.

Keywords: MOOCs, museum studies, digital education.

## 1 INTRODUCTION

Museums as cultural heritage institutions play an important role for the society. They are subject to constant change under the influence of internal and external political, economic and cultural processes. But for many, the museum is still a place where history is stored or where art is presented. However, the role and place of the museum in society are constantly changing. It becomes a tool for achieving social justice, and health and well-being of society, or the struggle for human rights. This change in the role of the museum promotes a greater public interest in this institution. And a better understanding of these processes is easy with the help of Massive Open Online Courses (MOOCs) that are the results of Open Education movement of the second part of the 20th century. Its purpose is to provide access to educational materials and creating conditions for education of almost any person all over the world. The peculiarity of these courses is that their authors are prominent scientists and professors of leading universities of the world in various fields. So, the people, without spending large financial and time resources, have the opportunity to meet with leading scientists of the world, and their vision of the various problems in the field.

The list of Massive Open Online Courses (MOOCs) at the following platforms Coursera [1], EdX [2], Udacity [3], MIT Open Courseware [4] (The USA), FutureLern [5] (GreatBritain), Iversity [6] (Germany), Crypt4you [7] (Spain), OpenUpED [8] (European Community), Lektorium [9], Stepic [10], Universarium [11] (The Russian Federation), XuetangX [12] and Chinese MOOCs [13] (China), EduKart [14] (India), OpenLearning [15] (Australia) and P2PU [16] (The Peer 2 Peer University) has been analyzed in the paper. The analysis revealed that the courses covering the activities of the museum in the world today, and, in general, associated with museums at MOOCs platforms are not widely spread. At the same time, mathematics, computer studies and IT, as well as physics and natural sciences (biology, medicine, etc) predominate at MOOCs platforms. Moreover, the vast majority of such courses presented in English.

## 2 MASSIVE OPEN ONLINE COURSES (MOOCS) IN THE USA FOR MUSEUMS STUDIES

The USA plays a leading role in MOOCs application, where there is the biggest number of MOOCs in different disciplines. The largest MOOCs-platform in the world now is Coursera. As a result of investigation, just over 10 MOOCs for museums studies were revealed, among them the courses developed by museums staff should be highlighted.

The American Museum of Natural History (AMNH) staff has created 4 courses, connected with natural sciences. The first course is “The Dynamic Earth: A Course for Educators” [17], provides students with an overview of the origin and evolution of the Earth. Informed by the recently released Next Generation Science Standards, this course examines geological time scales, radiometric dating, and how scientists “read the rocks.” It is devoted to dramatic changes in the Earth over the last 4 billion years, including how the evolution of life on Earth has affected its atmosphere. In addition, looking at geology on a global scale, participants will take to their own backyards to explore and share their local geologic history. Course participants will bring their understanding of the dynamic Earth - along with content resources, discussion questions, and assignments - into their own teaching.

The second course is “Evolution: A Course for Educators”[18] devoted to the Darwinian theory (Darwin's First Great Idea – The Tree of Life and Darwin's Second Great Idea - Adaptation via Natural Selection), The History of Life, Human Evolution).

The third course is “Genetics and Society: A Course for Educators”[19] provides students with the genome science, the ethical issues related to its study, as well as medical problems of the genome, and the influences of the genome science on agriculture (GMO foods) and society (animal and human being cloning).

The fourth course “Our Earth's Future” [20] is about the science of climate change and how to talk about it. Students learn from scientists in the fields of climatology, oceanography, Earth science, and anthropology who study how climate change is affecting people, populations, and ways of life. Explore the multiple lines of evidence for the human-induced climate change that is happening today, and consider what that means for the future of our planet.

The Museum of Modern Art (MoMa) staff has created 3 courses. The first is “Modern Arts and Ideas” [21] allows students to develop skills for looking at art through a thematic lens. Four themes – Places and Spaces, Art and Identity, Transforming Everyday Objects, and Art and Society – while learning about artworks from The Museum of Modern Art's collection are suggested to be studied.

The following courses: “Art and Inquiry: Museum Teaching Strategies for Your Classroom” [22] and “Art and Activity: Interactive Strategies for Engaging with Art” [23] are developed to create a large global community for sharing ideas about inquiry-based learning. The authors encourage the students to share ideas throughout the duration of this course and hopefully beyond. The difference between these two courses is that they are carried out in the non-stop format, i.e. anyone interested will be able to connect to the course at any time, while the other courses have a specific start date and specific time duration (4 to 8 weeks).

Thus, museums act as educational institutions that provide non-traditional methods of training, including originally developed for museums (for in-gallery museum education). For example, the course made by Dr. David P. Silverman, Professor of Egyptology, University of Pennsylvania “Ancient Egypt”[24] is dedicated to retrospective review of Egypt history. In his course, he uses a lot of original Egyptian artifacts photos to illustrate the lectures. This course provides not only the history of Egypt, but also introduces students to the possibilities of the museum as a source for research, thereby confirming the view of the museum as a research institute.

The course “Ancient Egypt: A history in six objects [25],”, made by staff of University of Manchester, Dr Joyce Tyldesley, Dr Glenn Godenho, and Dr Campbell Price is close to the mentioned-above course. This course provides an introduction to ancient Egyptian history, using six items from the collections of The Manchester Museum. These items have been carefully chosen to reflect the development of the dynastic age through their origin, manufacture, decoration, and use. These artefacts will allow students to journey from Predynastic Egypt and its first king, Narmer, to Greco-Roman Egypt and its final queen, Cleopatra.

It should be noted also the courses will be useful for museums managers to develop their collaboration in modern time. One of such courses is the course “Leading Innovation in Arts and

Culture” [26] developed by David Owens at Vanderbilt University and customized for the cultural sector with National Arts Strategies. The following skills will be developed at the end of the course:

- 1 analyze constraints on innovation in your organization, foresee obstacles and opportunities, and develop a shared vision;
- 2 develop a process to manage the demands of multiple stakeholders, shifting priorities and the uncertainty inherent in new initiatives;
- 3 create a culture for innovation and risk-taking that generates new perspectives and challenges existing practice;
- 4 create a strong customer focus within your organization that anticipates customer needs.

The course “Recovering the Humankind's Past and Saving the Universal Heritage”[27] developed by scientists of the Sapienza University of Rome (Sapienza Università di Roma), closed to the mentioned-above one, can very helpful for museums staff, despite the fact that the course is devoted to archeology. In particular, “Digitizing Cultural Objects and 3D virtual reconstruction” and “Sharing Digital Cultural Objects over the Internet”, where it is discussed how to structure the raw data in order to facilitate and make effective the access to digital contents. The course is focused on actual, innovative instruments to preserve, monitor and give value to cultural heritage through a multidisciplinary approach, based on a deep archaeological and historical knowledge but also on ICT technologies.

The structure of the courses at Coursera is similar. All of the courses include a short video lecture or interview, supplemented by slides with infographics and various teaching aids for students to remember the information, tests tasks on each units and a forum for sharing ideas. The courses end with a final test or project work, the results of which prove the students knowledge and skills.

Next MOOCs with museum studies courses is MIT Open Courseware. It is necessary to pay attention to one of them – “The Art Museum: History, Theory, Controversy” [28], developed by Prof. Kristel Smentek. According to its description, the course is developed for students, interested in the theory and practice of museum studies. The author mentioned that art museums were powerful and contested institutions. They are also innovative sites of architectural and artistic practice. From the exhibition complex of the nineteenth century to the experiential complex of today, this course investigates the art museum from historical and contemporary perspectives, striking a balance between theoretical investigation and case studies of recent exhibitions and museum buildings.

### **3 ANALYZING EUROPEAN AND RUSSIAN MOOCS**

Talking about European and Russian MOOCs, it is necessary firstly to pay attention to one of the biggest – FutureLearn, which brings together the leading British and international universities. This platform aims to compete with the projects that have already been actively engaged in the creation of mass open online courses, especially Coursera and edX.

At this platform, we have identified 3 courses related to museums.

The first of these is “Shakespeare and His World” [29], prepared by J. Bate. It provides open access to a unique history collection of the museum, the library and the archives; and it eliminates barriers for participants to meet with the archive of “Shakespeare's birthplace”. The museum in this course serves as visual aids. The course is designed for anyone interested in Shakespeare, schoolchildren, students, theatre-lovers and everybody, who wants to learn more about Shakespeare.

The second course is connected with the history of Cold War – “From World War to White Heat” [30] and provides The Royal Air Force (RAF) Museums in the Cold War. It is guided by Dr Ross Mahoney, Aviation Historian, RAF Museum, and Dr Emmett Sullivan, Senior Lecturer in History, Royal Holloway. This free online course is collaboration between the Royal Air Force (RAF) Museums and the Department of History at Royal Holloway, University of London. It will introduce students to some of the major turning points in the history of Britain in the post-1945 era. The course makes extensive use of material from the archives of the RAF Museum to illustrate the Cold War history of the RAF and was filmed on site at RAF Museum Hendon and Cosford.

And, finally, the third course here – “Behind the Scenes at the 21st Century Museum” [31]. The course has been created by leading academic researchers and museum professionals in the field of museum studies. It is collaboration between the School of Museum Studies at the University of Leicester and National Museums Liverpool. The University of Leicester has played a key role in the development of

the field of museum studies over the last 50 years and is home to an amazing body of world-leading research and a site for inspirational teaching. National Museums Liverpool is one of the UK's leading museum services, where you can see first-hand how museum professionals today imagine and make the modern, 21<sup>st</sup> century museum.

The course is intended for everybody interested in museums activity. However, it should be first recommended to the current museum staff to enhance their skills and students enrolled in undergraduate and graduate programs of museums studies.

It has been revealed two MOOCs on the German platform that are devoted to museum studies. The first course – “Myths and Facts About Rocks” [32] – embraces the following aspects:

- 1 understanding the key geological concepts, including crystal, mineral and rock;
- 2 applying basic methods to determine the properties of minerals and structure and texture of rocks;
- 3 identifying the composition, formation conditions, characteristic features of naturally-occurring and urban environment stone material and to determine its practical significance, etc.

In general, this course provides an overview of some aspects of our world from a geological point of view.

One of the authors of the course is a museum worker of the mineralogical museum in Tomsk Polytechnic university, thus, the museum serves as a base of scientific research.

In the second course – CCAA “Contemporary Chinese Art Award” [33] – the museum also serves as a base of scientific research. “Contemporary Chinese Art Award” will be accessible for one year, beginning on April 13, 2016. For the first six weeks, it will be released as a time-based MOOC with a new chapter launched every Wednesday. Later on, it will be available as a self-paced course. The course features two different tracks. The Audit Track is for free and allows learners to get familiar with the subject. The Certificate Track costs €119. To obtain a Certificate of Accomplishment, participants must submit an assignment. The ZHdK Centre of Further Education evaluates assignments four times a year.

Russian MOOCs provide students with the museum studies too. As foreign analogues, the authors some of them are museum staff too. One of them is MOOCs “The World of Russian traditional house and toy” at Universarium, recommended for everybody interested in Russian history, culture and traditions.

Lektorium suggested the course, video lectures of which filmed at the Russian State Museum of the Arctic and Antarctic [34] “Changeable Arctic” [35]. Its author is Terry V. Callaghan, joint recipient of the 2007 Nobel Peace Prize. Unfortunately, except the museum's interior, other museum elements were not used for this MOOC.

At the end of 2016 Lektorium is planning to launch another project related to the Peter the Great Museum of Anthropology and Ethnography (Kunstkamera) of the Russian Academy of Sciences – “Kunstkamera of the 3rd millennium” [36]. This is an educational online-course, which describes the scientific development supported by museums exhibits. That is why the personality of a researcher, modern scientist is going to be emphasized in the course. This MOOC will be interesting for people who want to know the hidden treasure of museums. In addition, it is useful for students, specialized in museum studies too.

As for Asian platforms, such as XuetangX and Chinese MOOCs (China), EduKart (India), the museum studies MOOCs have not been revealed there.

## 4 RESULTS AND DISCUSSION

To sum up, totally 16 MOOCs – platforms have been studied by us. 20 museum studies courses have been revealed on the following MOOCs-platforms: Coursera (11), MIT Open Courseware (1), FutureLearn (3), Iversity (2), Lektorium (2), Universarium (1). However, just 2 courses, such as “Behind the Scenes at the 21st Century Museum” (FutureLearn) и “The Art Museum: History, Theory, Controversy” (MIT Open Courseware) have been found that are intended for museum staff and its training. These courses have a well-organized structure, encourage the student to understand correctly the place and role of modern museum in changing society, and can be considered as

refresher courses for museum staff and/or additional educational courses for students, specialized in museum study.

Other two courses “Leading Innovation in Arts & Culture developed” and “Recovering the Humankind's Past and Saving the Universal Heritage” (both – Coursera) can be useful for modern museum managers to develop the concept of the museum institution that meets modern requirements.

The remaining 16 MOOCs are also considered to be useful for museums staff for better understanding the cultural, educational and scientific capabilities of museums, but first and foremost museums in these courses are the educational, scientific or exemplary base of any topic. The authors in 12 of 16 MOOCs are the museum staff workers of the largest world museums (The Museum of Modern Art, The Kunstkamera and The American Museum of Natural History, etc.) including museums of leading universities (University of Pennsylvania, Tomsk Polytechnic University, etc).

The structure of MOOCs for museum studies is similar and consists of short videos (2 – 8 min), additional material with the opportunity to be discussed on forums, checking questions in the form of the test.

An educational model of these online-courses is as follows:

- 1 The students are suggested to listen to the MOOCs-lectures on site, which are supplemented by slides with infographics and various teaching aids to remember the information.
- 2 The students do the tasks independently at any convenient for them time. The tasks can include reading additional literature; search the internet-recourses, essay writing, and a little research or testing. Passing intermediate and final tasks should be done in clear deadlines.
- 3 Online forums are used for consulting and discussing studied topics.
- 4 At the end of study, a final examination (a test or project tasks) should be passed. The certificate is given by the educational institute – organizer of MOOCs to the participants.

Totally, MOOCs have their advantages and disadvantages. The benefits include the following:

- 1 they are free in any case, even if the authors are the world's leading scientists, including Prize winners;
- 2 the content of high quality, which ensures cooperation with leading universities and museums of the world;
- 3 they eliminates the geographical barriers: it is enough to have a personal computer and the Internet to access information in any part of the world;
- 4 there is no input requirements to educational level of participants, that makes them suitable for any people (who work in another field of knowledge, housewives, pensioners, disable people) to study;
- 5 possibilities to share professional ideas and opinions in the forums courses.

But there are drawbacks. Some authors [37 – 39] define the following disadvantages of mass courses:

- 1 lack of accreditation. Having done a lot of work and a lot of effort to complete the course, students do not receive academic credit, and there is no official recognition of doing the course. Nowadays efforts to give MOOCs status of academic courses and assign credit for their passing are being made, but still the situation has not changed;
- 2 needless massive participation. The ratio of teacher staff and students is an important parameter in all universities, which is taken into account to estimate the level of attention that the teacher can pay to his students;
- 3 the fewer students, the more attention of teacher can pay to each of them supporting and motivating them. Individual approach to a student is not possible in MOOCs structure; as a result, the trainees may feel that they are left to themselves;
- 4 a high percentage of unfinished courses. It is easy to register for MOOCs participation, but to study up to the end to complete the course - is another matter. According to statistics, only 10 % of registered people graduate the course. Many people drop out without completing the first task that means that their interest weakens over time;
- 5 lack of motivation. MOOCs are mostly free. There is no fine for not completing the course. MOOCs, as mentioned-above, have no academic credits, so they can be considered just as a

bonus to a resume, but they will not lead to significant career advancement or a breakthrough in students' career. Thus, there is no any real motivation to complete the course. A lot of people are recorded on certain MOOCs without even thinking, whether they take the time pursuits, in contrast with traditional courses where the prospect of employment encourages many students to complete the course;

- 6 imperfect assessment system. To assess the work of thousands of students is the main problem of MOOCs. And although computers are an invaluable aid in the assessment of the nature of the test tasks, evaluation of research, essays, and so on remains a major problem;
- 7 the language barrier. Most MOOCs are developed in English. Despite the fact that English is the main language of international cultural and scientific communication, not all of students speak to the extent that is necessary to study the course. This causes the problem of professional terminology, which knowledge and understanding for non-Anglophones requires a considerable amount of time and effort. Nowadays, there are some communities that translate the most popular MOOCs into different languages, but the number of such courses is not as many as we would like.

As for MOOCs for museums studies, then they also have all these disadvantages, but there are a small number of disadvantages which are specific only for museums, for example:

- 1 the complexity of the search for MOOCs related to the specific museum's activity. It requires a lot of effort to find and analyze the necessity of the course for professional needs;
- 2 the language barrier, that does not allow everyone to study in a particular course he wants;. Besides, courses on museum topics are not so popular among translated MOOCs into other than English languages;
- 3 certification of such a course is not always of practical significance and students and museum staff can use them to have credits.

As for the prospects of using MOOCs for museum studies intended for students and museum staff workers, then it should be noted that it is firstly connected with some benefits that they can get in such courses. For example, bachelors and masters of museums studies at museums MOOCs can better understand the functions of museum institutions, estimate the place and role of museum in contemporary society, as well as understand the possibilities of museum in the stabilization and development of the local community. Participation in such courses could be the basis for credit or exam in various subjects, including professional, of museum orientation.

Postgraduates, running research in such discipline as "Museology, conservation and restoration of historical and cultural objects" can improve their English with the help of MOOCs where they can use professional terminology to share ideas and get language practice in the professional sphere.

MOOCs allow the museum staff workers, on the one hand, to expand their professional network of contacts, including carrying out joint research and other studies and, on the other – to improve their professional and language competency. However, it is desirable that MOOCs certificates have practical application to have promotion in the career.

## 5 CONCLUSION

In conclusion, MOOCs in museum studies practice is a little known phenomenon, although, is based on the theoretical foundations of distance education and e-learning.

Using applied-language and vocational-orientated approaches in MOOCs development can open up new prospects to use this type of training in teaching and learning and raise the prestige of the museums and museum profession in society.

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