

# How can the EMMA approach to learning analytics improve employability?

## Citation for published version (APA):

Brouns, F., Tammets, K., & Padrón-Nápoles, C. (2014). *How can the EMMA approach to learning analytics improve employability?*. Paper presented at 9th European Conference on Technology Enhanced Learning (EC-TEL), Graz, Austria.

## Document status and date:

Published: 01/10/2014

## Document Version:

Peer reviewed version

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- The final published version features the final layout of the paper including the volume, issue and page numbers.

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# How can the EMMA approach to learning analytics improve employability?

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**Keywords:** *MOOCs, learning analytics, employability, key competences, 21st century skills, learning to learn, EMMA platform*

## 1. Introduction

In our current society there is a strong need for citizens to work on their employability and to develop key competences (European Commission, 2006, van Woensel (ed), 2008). Developing those competences should start during formal education, but maintained throughout working life. It requires a change in current educational and a move towards lifelong learning. Individuals need to actively look for learning opportunities. One of the eight key competences, learning to learn is key to this. Therefore, Massive Online Open Courses (MOOCs) can accommodate several of the needs of the lifelong learners, being open, accessible from any place and location. EMMA facilitates learners in obtaining their personalised learning goals. And an integrated learning analytic solution will help to track the learning process and provide actionable feedback to improve, correct and ensure the achievement of students' learning goals.

## 2. EMMA learning analytics approach

Fournier, Kop, and Hanan (2001) defined learning analytics as the “measurement, collection, analysis and reporting of data about learners and their context, for purposes of understanding and optimizing learning and the environments in which it occurs”. It provides new opportunities for tracking and analysing learners' behavioural data and interpreting them in an educational meaningful way. Further Fournier, Kop and Sitlia (2011) demonstrated the need for a mix of learning and social data when analyzing learning experiences. These findings formed the basis for the learning analytics approach taken for the EMMA platform.

EMMA platform is developed by the European Commission 7<sup>th</sup> FP project. EMMA delivers free, open, online courses in multiple languages from different European universities. EMMA will operate in two main modes; as an aggregator and hosting system of courses produced by European universities; and as a system that enables learners to construct their own learning pathways using units from MOOCs as building blocks. Although the EMMA platform acts as a regular MOOC platform, allowing providers to design and conduct their MOOC courses, the EMMA platform is more than that. EMMA platform acts as an aggregator for European MOOCs and is designed to support personalization not only in the design of the MOOCs offered by providers, the provision of multilingual support in video transcription and translation, but also by providing a personal learning environment (PLE) that allows learners to pick and mix from those sections of the various MOOCs on offer that they consider important and relevant and build their own personalized courses.

EMMA's learning analytics approach aims mainly to provide personalized feedback to individual learners and is designed to support personalization and support for learner's learning goals and personalized learning paths. Learning analytics are applied to provide reflection opportunities to learner to assist them in monitoring their learning process and controlling the achievement of their learning goal. Provided feedback and raised awareness of the learning experience could enhance the development one of the key competence “learning to learn”.

## 3. Technical architecture of the learning analytics application in EMMA platform

Figure 1 describes the technical architecture of the EMMA learning analytics application that consists of data tracking tool, which sends the data to the learning record system. Based on collected data feedback to learners will be provided through dashboard solutions.

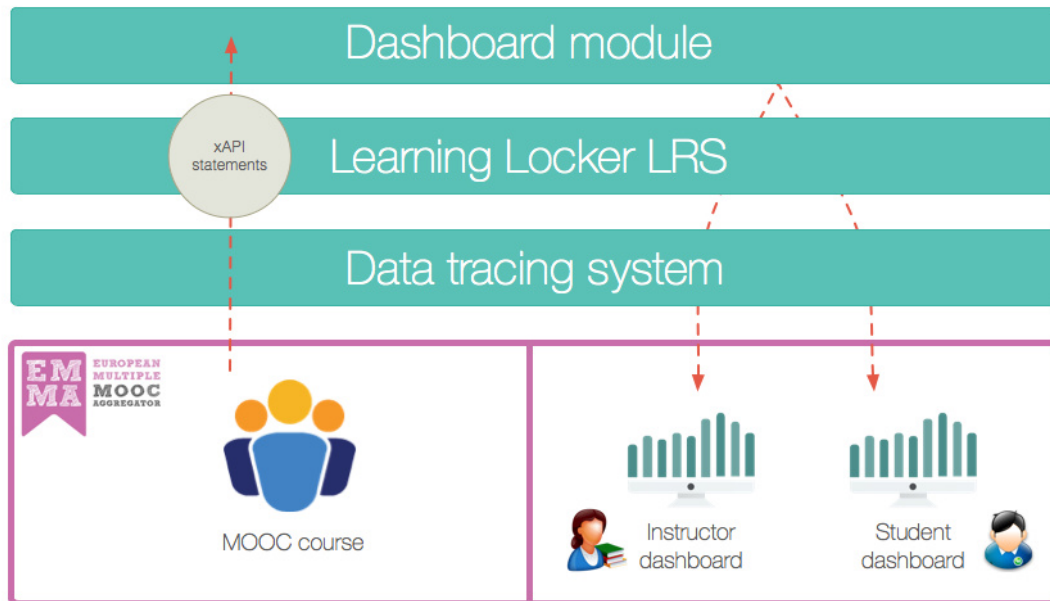


Figure 1: EMMA learning analytics application

Data will be tracked with the EMMA tracking tool. Analytics module corresponds the Experience API or xAPI<sup>1</sup> standard, which is used frequently in learning analytics since its conception in 2010 by the Advanced Distributed Learning ADL<sup>2</sup> (Cooper, 2014). The objective of the xAPI, according to Glahn (2013), is to express, store and exchange statements about learning experiences. At the core of the xAPI are the statements about learning experiences such as: “someone does an action to/with something”, for example “Jane posts reflection in weblog”.

Since relevant data for personalized advice can come from various sources in addition to the learning environment or the MOOC platform, an intermediate Learning Record Store (LRS) stores all data and exchanges data with the dashboard. EMMA has chosen Learning Locker<sup>3</sup> as its open-source LRS. Learning analytics dashboards visualize data to the learners to assist in monitoring and reflection on the learning process. Visualizations provide information about participant’s progress compared with the average student in the group, accessed materials, actively and passively participated modules etc. There seems to be few studies that focus on recommender dashboards in MOOCs, which is one of the directions in EMMA platform. In Emma, the learner has a chance to choose from different modules in different MOOCs and to create their personal learning path for supporting personalized bottom-up approach to learning. For supporting students to find suitable MOOCs and select needed modules for their learning path, their dashboard will provide meaningful recommendations.

#### 4. Conclusions

MOOCs provide several opportunities for young people to acquire knowledge, but also develop social skills, which are both important for employers. MOOC participants are in general students who have made conscious choice about their learning needs and found suitable courses for themselves. Implementing learning analytics in MOOC platform may help in providing feedback to participants about their learning experience when needed and recommendations for new learning paths (related contents) through the information presented in the learners' dashboards. In EMMA platform, learner has a chance to choose from different modules in different MOOCs and to create their personal learning path for supporting personalized bottom-up approach to learning. For supporting students to find suitable MOOCs and select needed modules for their learning path, their dashboard will provide

<sup>1</sup> <http://www.adlnet.gov/tla/experience-api/> en <http://www.tincanapi.com>

<sup>2</sup> <http://www.adlnet.gov>

<sup>3</sup> <http://Learninglocker.net>

meaningful recommendations. In this way, EMMA provides a technological support for achieving their goals (e.g. acquiring knowledge).

In the future EMMA could think about issuing certifications or open badges that could help MOOC participants to be in better position to be hired. By providing certificates or open badges for learning achievements the MOOC experience would be validated and therefore trustworthier evidence in the employment process.

## **5. Acknowledgements**

This work is funded by the EU, under the Competitiveness and Innovation Framework Program 2007-2017 (CIP) in the European Multiple MOOC Aggregator (EMMA) project. Grant Agreement no. 621030.

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