

## Chapter 8

# Using Artificial Intelligence in Massive Open Online Courses: A Conceptual View to Wise MOOCs

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### ABSTRACT

*It can be said that the reflection of the philosophy of Transhumanism on education creates a threat to the survival of human civilization or, on the contrary, focuses on technologies that try to create opportunities to overcome basic human limitations. MOOCs are still a major tool in the ongoing development of opportunities to teach the whole community. With MOOCs, interactive student-oriented large audiences can be reached instantly. The MOOCs, which offer great opportunities, should be made intelligent by the interaction of the curricula and the learner in order to achieve more effective results. As MOOCs are student-friendly, it is important that, when preparing training materials, the curriculum is formulated strategically. It is important that stakeholders' views are involved in decision-making using artificial intelligence techniques because learning is too important to be left to coincidence.*

### INTRODUCTION

In the late 20th century, worldwide rapid developments in information technologies such as radio, television, computer, internet, satellites, and fiber optics have caused a paradigm shift in the teaching methods by influencing the working mechanism of training activities. One of the reflections of this shift is “MOOC” (Massive Open Online Course), which has started to be used in 2008 and has become widespread since. Being regarded as a new stage in the use of internet in Open Plan and Distance Education, Massive Open Online Course, hence the name, is an online education which aims at a large number of participators and meets the high quality, interactive, free of charge and lifetime education need of massive students coming from all around the world. Although the massive open online courses that are

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regarded as a revolution in the field of education by some experts, are established with a philosophy of providing free of charge and quality education, they are used in the educational institutions as a method (either paid or free of charge).

In massive open online courses, the system is entirely dependent on the learning style of the individual and it helps to overcome the obstacles between the lecturer and the student, and it also helps to ease up the curriculum for students who are obliged to follow a standard curriculum. Thus, these students can choose from courses that suits themselves best. Today, where the digital transformation with technologies such as the internet of things and artificial intelligence has become a trending issue, the field of education should keep up with these developments, as well. Processes and systems are getting more intelligent with the artificial intelligence. In this study, wise (intelligent) MOOCs has been discussed.

The fact that real-life problems are multi-criteria and unclear is the most characteristic feature of these problems. Multi Criteria Decision Analysis (MCDA) methods are being used to solve complex decision-making problems which require the consideration of many criteria that are interrelated. Multi-criteria decision-making methods have been developed for multi-criteria problems, however, there are many solutions for uncertainties. Furthermore, it is being said by the researchers that the artificial intelligence is producing good results in this particular. Similarly, Önüt et al. state in their article called “A hybrid fuzzy MCDM (multi criteria decision making) approach to machine tool selection” that many researchers have been trying to use the fuzzy multi-criteria decision-making methods for selection problems, as well.

Fuzzy sets make it easy to overcome the uncertainties in decision-making problems. In their article called “An integrated optimization approach and multi-criteria decision analysis for supporting the waste-management system of the City of Beijing, China”, Xi et al. state that multi-criteria decision-making techniques are not effective in establishing an optimal waste management system. Cheng and McInnis stated in 1979 and 1989 respectively that it is recommended to use multi-criteria decision-making along with fuzzy logic. Opinions of Karatop et al. on real-life problems and artificial intelligence are as follows: “The most prominent features of the real-life problems are multiple criteria, complexity and uncertainty. Benefiting from expert and stakeholder views help to reach optimal solutions of those problems. Taking advantage of artificial intelligence techniques would also contribute to the achievement of optimal results.” It is possible to multiply these instances. As a result, studies show that using multi-criteria decision-making methods and artificial intelligence techniques together in solving real-life problems yields optimal results.

## **MASSIVE OPEN ONLINE COURSE (MOOC)**

The notion of MOOC is defined as online courses which offer free of charge and open registration options, provide open course content to everyone and have open-ended learning outcomes (McAuley, Stewart, Siemens & Cormier, 2010). Furthermore, MOOC offers a learning platform to a large learning community to support learning by discussion and to evaluate studies based on peer review (Reimann, Diebold & Kummerfield, 2013). If we are to evaluate the Massive Open Online Courses by sticking to its name, we can speak of 4 descriptive elements. (Kay et al. designated 3 descriptive elements. They addressed massive and open elements together. We addressed them separately here.) *It is massive* and it appeals to every segment of the society. It is not boutique. It is *open* to everyone so that everyone can use them for learning. By removing financial obstacles, it offers a learning platform to the disadvantageous part of the society regardless of their income level, as well. “Being online means people can access

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