

TEACHING AND LEARNING OF AUTOCAD ON MASSIVE OPEN ONLINE COURSE (MOOC) FOR TOWN AND REGIONAL PLANNING PROGRAMME, UiTM PERAK BRANCH

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ABSTRACT

The Industrial Revolution 4.0 and the COVID-19 global pandemic have impacted face-to-face traditional teaching and learning. They demand the teaching environment to be responsive and proactive. The Massive Open Online Course (MOOC) is seen to be a viable alternative approach in teaching and learning. Its ability to function remotely in graphical, active, and interactive ways is viewed as its main forte. The Computer-Aided Design (AutoCAD) course, on the other hand, relies heavily on its orthodoxy way of teaching and learning drafting software application such as Autodesk that involve hands-on and demonstration. Acknowledging this incongruence and by applying MOOC for the AutoCAD course attempt to remedy the current approach by mixing and combining three delivering and learning activities: i) PowerPoint; ii) Video, and iii) Google Meet. The contribution of these in MOOC for AutoCAD is significant as it could provide a framework for other technical and computer courses that utilise online teaching.

Keywords: active learning, MOOC, AutoCAD, town and regional planning

1. INTRODUCTION

Traditional teaching and learning approaches via face-to-face have been severely affected by the COVID-19 global pandemic. To control the spread of it, drastic changes to the traditional method of teaching and learning needs to be revised and implemented immediately. The new norm has shifted the traditional teaching and learning sphere onto the online platform. Moreover, this changeover is in tandem with Industrial Revolution 4.0 which centres on artificial intelligence, information and communication technology (ICT). This has pushed educators and the teaching environment to adapt and respond accordingly to the new teaching and learning requirements.

2. PROBLEM STATEMENT

Presently the AutoCAD course is taught mainly by hands-on and repeated demonstrations. It appears that these techniques of AutoCAD like any other courses can be transferred and delivered via MOOC [1], [2] & [3]. By doing so, mental fatigue to both lecturers and students can be minimised and better individual understanding of knowledge can be achieved. This is because the conventional way of teaching and learning AutoCAD requires face-to-face interactions, but MOOC with its online capacity is able to do this anywhere, anytime without the need for close physical presence [4]. Hence, it complies with the new

norm during the Covid-19 pandemic. Besides, graphical and interactive ways, which are missing in face-to-face teaching, can be embedded in MOOC. More importantly in these Covid-19 trying times, the learning and demonstration of the application process can be repeated without face-to-face interaction [5], [6], [7], [8] & [9].

3. OBJECTIVES

Several objectives have been identified:

- 3.1 to demonstrate the application of AutoCAD in teaching and learning of Town and Regional Planning;
- 3.2 to adapt and apply AutoCAD tools for Town and Regional Planning drawings or layouts;
- 3.3 to implement AutoCAD via MOOC during the COVID 19 Pandemic.

4. NOVELTY

MOOC via AutoCAD is a new way of graphic and interactive presentation in teaching and learning. It can graphically demonstrate step-by-step applications especially in Town and Regional Planning when constructing a drawing or layout.

5. BENEFIT

It allows remote teaching, in keeping with physical and social distancing amidst the COVID 19 Pandemic, without any loss of content and application. Subject matter is delivered interactively and equally amongst all participants. Time constraint is no longer applicable. Table 1 further simplifies the MOOC benefits as compared to conventional method of teaching and learning.

Table 1. Comparison between conventional and MOOC in teaching and learning

Aspects	Conventional	MOOC
Explanation	One-off (time-based)	Repetitive
Time and place	Rigid	Flexibility
Teaching hours	Constraint	Free
Teaching lifespan	Limit	Definitive

Reference: Kaygorodtseva and Luzgina, 2019; Waks, 2016; Robinson et al., 2015; Rhoads, 2015; Mazoue, 2013; Haber, 2014; Yu, 2015; Pomerol, Epelboin and Thoury, 2015; Jemni, Khribi and Kinshuk, 2017

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2. Pihak Perpustakaan ingin memohon kelulusan YBhg. Profesor untuk membuat imbasan (*digitize*) dan memuat naik semua jenis penerbitan di bawah UiTM Cawangan Perak melalui Repositori Institusi UiTM, PTAR.
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