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# INNOVATION

## CATEGORY

# THE DEVELOPMENT OF INTERACTIVE LEARNING METHODS THROUGH AUGMENTED REALITY IN ENGINEERING DRAWING

Mohd Zulfabli Hasan<sup>1</sup>, Nurisah Wahab @ Abdul Wahab<sup>2</sup>, Sahrijan Ahmad<sup>3</sup>, Nurismalina Haris<sup>4</sup> and Hashimi Mat Lazim<sup>5</sup>

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Nowadays, the rapid technological development has led to technological evaluation that is in line with the existence of industrial revolution 4.0 or known as "Industry 4.0". The field of education is also not left behind in the current 4.0 industry development. There are 9 pillars of revolution 4.0 and fundamentally, augmented reality is one of the important pillar. Moreover, revolution 4.0 is an innovation that moves from the digital age to the physical cyber era. With the launching of Malaysia Education Development Plan 2015-2025 for higher education steps have been taken to push the Technical and Vocational Education and Training (TVET) which includes special intervention in teaching and learning in this field. Correspondingly, augmented reality being the interactive method of technology that has been hypnotize peoples especially generation Z. In this regard, 21st Century learning methods are subjected to the technology based in order to attract the student. Therefore, the researchers have made a study on augmented reality technology approach towards engineering drawing subject among the Mechanical engineering students in Politeknik Tuanku Syed Sirajuddin, Arau, Malaysia in order to produce an innovation that can be impacted and interactive to the students. As a result, the innovation of an engineering drawing book acquainted through AR has been produced. Pre and post-test has been conducted among the students who taking for engineering drawing course in order to evaluate the effectiveness of the book. Consequently, the students have shown an improvement in understanding and assessment performance. Hence, this innovation shows that augmented technology was suitable to adapt in 21th century learning method that can be impacted to the students. This innovative product has wide opportunity to be marketed to all Polytechnics in Malaysia and all Malaysian institutes of higher education which have engineering drawing subjects.

**Keywords:** Augmented Reality Technology, Engineering Drawing, Industrial revolution 4.0



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