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CHALLENGE-BASED ASSESSMENTS IN A GAMIFIED LEARNING ENVIRONMENT: A CASE STUDY ON LINGUISTICS STUDENTS

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ABSTRACT: The increasing call for students to be equipped with 21st-century skills has prompted many academic programmes in tertiary learning institutions to revise their core focus particularly in their learning delivery and assessments. This study reports on the incorporation of challenge-based assessments in the Language and Computing course offered in a Linguistics undergraduate programme in a Malaysian university. In particular, the key tenets of challenge-based assessments are embedded within a gamified learning environment, in which the students are assessed progressively through a series of challenges. The course was run for 14 weeks with 68 students. By the end of the course, the students were required to evaluate their overall experience through a questionnaire. The findings showed that the novel use of challenge-based assessments has sustained students' interest in the course. Moreover, observable behavioural changes were also apparent such as the increase in attendance rate and active discussions in face-to-face classes. The students' perceptions regarding the whole course were notably positive with high ratings given to the constructs covered in the questionnaire. Ultimately, this case study provided valuable insights on how gamified challenge-based assessments can enhance students' engagement and deep learning.

KEYWORDS: Challenge-based Assessment; Gamification; Computational Linguistics

I. INTRODUCTION

The emergence of the Industrial Revolution 4.0 (IR4.0) has brought new dimensions to the Malaysian education system. Since it has a significant impact on higher education system particularly on job, humanity and the industry, new policies and ideas have been introduced by the Ministry of Higher Education Malaysia as a way to meet the needs of the revolution (Haseeb, 2018). More efforts have been directed towards developing future-ready curriculum to prepare the students for IR 4.0 (Ministry of Higher Education Malaysia., 2018). Instead of merely focusing on theories, higher learning institutions have started to design courses that integrate real-world application of the content area. In this light, challenge-based learning (CBL) has gained more attention as it links the classroom and the outer world by introducing real-world challenges in the syllabus. It has altered the ways of teaching, learning and inevitably, assessing. Non-conventional assessments that test students' knowledge application have been introduced into the system to add to the traditional assessments such as written exam. As this is a relatively new approach, its effectiveness has been widely discussed and debated. To add to the existing discourse, this research studies the integration of challenge-based assessments in a gamified learning environment in an undergraduate course, Language and Computing.

II. LITERATURE REVIEW

2.1 Industrial Revolution 4.0

Industrial Revolution 4.0 or IR4.0 is expected to alter the way people live, work and communicate, as well as their values. IR4.0 job market needs learners to have critical thinking where they are able to solve problems in novel, interdisciplinary ways, communication skills where they are able to confidently express their thoughts, notions, enquiries, experiences and solutions, collaborative skills where they are able to put talents together and work to achieve a common goal and creativity, where they are able to invent and innovate to find new approaches (Fadhlullah, & Ahmad, 2017; Zain, Muniandy, & Hashim, 2016)

As the curriculum evolves to fit the agenda of IR4.0, the way students are being assessed changes accordingly. In Education 4.0, traditional assessment that focuses mainly on theoretical knowledge may become irrelevant or insufficient. Learners' factual knowledge pertaining the subject matter can be assessed during the