Editorial

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Samsudin Anis successfully finished his PhD in Mechanical Engineering at Universiti Sains Malaysia. Currently, he is a Lecturer in Universitas Negeri Semarang. His main subject is thermofluids, heat and mass transfer, and renewable energy. Biomass processing for bio-oil and producer gas production are among his latest researches.

1 Introduction

With regard to respond to the disruption occurred during the transition to the Industry Revolution 4.0 (IR 4.0), there are two things that need to be strengthened, including the development of human resources as well as innovation and technology. In the era of IR 4.0, automation technology has been increasingly developing. Various technological innovations marked the IR 4.0 such as artificial intelligence (AI), 3D printing, cloud computing and the internet of things (IoT).

This era has changed many areas of human life, including social, lifestyle and economy. The IR 4.0 opens wider opportunities for sustainable development.

Industry needs human resources who can adapt to future technological developments. For this reason, education needs to be adjusted to the needs of IR 4.0. Facing the era of IR 4.0, the role of higher education is very important, especially in the development of science and technology. Thus, research-based tertiary education must encourage more openness of knowledge that can improve human prosperity. Quantity is no longer the main indicator for a university to achieve success, but the quality of its graduates. The success of a country in facing the IR 4.0 is closely related to innovation created by quality resources, that universities are required to be able to answer challenges to face technological advances and competition in the world of work in the globalisation era.

In creating innovative and adaptive resources to technology, it is necessary to adjust learning facilities and infrastructure in terms of information technology, internet, big data analysis and computerisation. Higher education institutions providing this learning infrastructure are expected to be able to produce graduates equipped with data literacy, technological literacy and human literacy skills. Innovative breakthroughs lead to the increase of industrial productivity and the birth of technology-based start-up companies, such as those that have sprung up in Indonesia today.

Reconstruction of a higher education curriculum that is responsive to the industrial revolution is also needed. It is, for example, such as the curriculum redesign with a digital human approach and digital-based skills. The information technology-based lecture system is expected to be a solution for the students in remote areas to reach qualified higher education. Preparation in producing graduates who are able to adapt to the IR 4.0 is of important for universities thus increase the competitiveness against competitors and the attractiveness to prospective students.

The 8th EIC conference 2019 was organised to facilitate the sharing of knowledge in the topic of knowledge creation and technological innovation in the IR 4.0. During this conference, a set of papers about the above topic from a variety of disciplines were presented and discussed. Researchers in the background of university members, vocational school teachers, research bodies, and government agencies were brought together in this conference. The papers presented by these researchers applied a variety of methodologies both quantitative and qualitative to achieve deep analyses on the role of higher education in facing IR 4.0. This volume was generated to describe current findings in knowledge creation and technological innovation problems, by providing state-of-the-art of the related research regarding to the IR 4.0. We believe that this volume will provide further comprehensive understanding of this important topic.

2 Themes among the papers

The articles in this volume investigate some themes include studies on virtual reality tour, university IT managements, perceived usability, application of learning management system, and service quality measurement. The first theme – research on virtual reality tour was carried out by applying virtual reality technology in Veterinary Hospital. Panoramic photos were utilised to visualise into 3D form thus able to provide spatial information in the hospital. It enables users to visit various rooms at the hospital. The application was developed on the Android smartphone. A head-mounted display (HMD) device as a container and a manipulation tool of virtual applications are needed.

A study to analyse the internal factors required to improve the flexibility of university IT management was carried out. It was revealed that data integration, modularity of

application, value drivers, human resource competencies, human resource development and knowledge sharing significantly affected university IT flexibility and management, while decision supports system variables, formalisation, complexity and IT leadership gave insignificant effects. Another study on IT management was done to evaluate the data quality of the human resources information system (HRIS). Questionnaire and interviews were chosen for data collection of maturity level of data quality management and measurability of HRIS criteria, respectively.

Mobile payments are emerged by the rapid development of mobile communication technology, wireless networks, mobile internet, and smartphones. The users' intention to adopt mobile wallet in Indonesia based on perceived usability factor combined with the perceived usefulness and perceived enjoyment factors which have been widely used to model the technology adoption was analysed. Gopay as the leader of mobile wallet in Indonesia was chosen as case study. It was revealed that users' intention to adopt m-wallet through perceived usefulness and perceived enjoyment variables was affected by perceived usability.

The influencing factors of continuance intention to use LMS in a blended learning environment were explored. They succeeded in enriching the understanding of post-adoption use of LMS in a blended learning environment from students' point of view. The study findings could be strengthened by including educators' intent in the application of LMS thus effectively delivers blended learning activities.

The measurement of service quality in telecommunication company was carried out. Sentiment analysis was used to determine customer perceive to XL based on data from Twitter. They obtained that the most review from customer in twitter from January to April 2019 period is given to network quality in XL while employee's competency has the most negative comment and review.

3 Implications of the articles

As a group, these articles demonstrate several important themes in knowledge creation and technological innovation in the IR 4.0. The approach of hospital virtual tour could enhance user experience aspects such as attractiveness, stimulation, and novelty. It was implied that text cueing enhanced user experience in a virtual tour with panoramic VR.

IT managers and university management could increase the flexibility of IT management by considering the influencing factors followed by preparing important strategies. More structured planning by focusing on the preferred indicators could be developed based on the measurement results. Hereafter, budget of IT field is able to be allocated by applying the plan as a reference, whereas study on data quality management is applicable to improve the quality of educational data. Policies related to data quality management could be developed based on the recommendations thus ultimately impacting stakeholders in decision making.

Research on the acceptance of mobile wallet provides an insight into the roles of perceived usability. Several practical insights to mobile wallet developers and providers were provided by the findings. The developed mobile wallet must be easy to learn. A wizard or brief tutorial to the prospective users about the use of mobile wallet must be provided. The presence of such features of funds transfer, bills payment, parking payment, could be an added value of mobile wallet.

Study on the influencing factors of learning management system provides guidelines to policy makers on what factors of learning management systems are to be emphasised when they set out strategies on combining e-learning and face-to-face learning environments. The full leverage of learning management system could be achieved by higher educational institutions by considering the blended teaching approach thus better engaging students.

Based on the sentiment analysis of service quality of telecommunication company, a quick action to re-evaluate their service quality from customer perceive especially in employee's competencies, which has the highest percentage in negative comment from customer could be taken. Company should maintain the network quality dimension since it obtained positive sentiment from customers.

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