ABSTRACT

This chapter discusses the impacts of Industrial Revolution (IR) 4.0 on the continuing professional development training (CPDT), demanding lecturers/teachers to acquire knowledge of instructional design and information and communications technology (ICT). IR 4.0, often referred to as Education 4.0, requires universities to upgrade their CPDT that can enhance ICT skills of lecturers/teachers as well as students. The Ministries of Education (MOEs) and Ministries of Higher Education (MOHE) among ASEAN countries need to share their initiatives to help produce effective digital citizens. The quality of students depends on the quality of lecturers/teachers trained in CPDT. CPDT should be carefully redesigned to encourage more lecturers to enhance their student learning as well as engagement through ICT integration. Guidelines of redesigning CPDT are provided to redesign better and effective CPDT in the future. It is hoped that lecturers can increase their teaching effectiveness, efficiency, and productivity through continuous successful exposure of ID knowledge, skills, and ICT integration.
INTRODUCTION

All ASEAN countries especially the Ministries of Education (MOE) and Ministries of Higher Education (MOHE) collaborate among themselves to share and promote effective Information and Communications Technology (ICT) policies, initiatives and platforms through the Southeast Asian Ministers of Education Organization (SEAMEO) and The United Nations Educational, Scientific and Cultural Organization (UNESCO). A variety of instructional reforms and views from research conducted by countries participating in the Organisation for Economic Co-operation and Development (OECD) have also contributed to the redesign and restructure of Continuing Professional Development Training (CPDT) for lecturers and teachers in Malaysia. Lecturers in universities especially those involved in teacher training departments need to improve their knowledge, attitude and skills in order to prepare prospective (future) teachers and in-service teachers undergoing training in universities. These teachers can deliver quality instruction if the lecturers are well-equipped with necessary skills and knowledge of Instructional Design (ID). The knowledge of ID can certainly enhance the development and production of better, effective and more interactive teaching and learning materials used for their students. Teachers need to shift from teacher-centred learning to more learner-centred learning approaches, individualistic to collaborative learning, shallow learning to deeper learning, single-sense sensory learning to multiple sense sensory learning, mundane to more interactive learning and low skills to higher skills’ learning (Roblyer and Hughes, 2018). Just like any other countries, Malaysia is preparing its teachers to be ICT-competent leaders in schools. Focus of CPDT is on training teachers to not only teaching with ICT such as computers and mobile devices but also integrating ICT into a variety of subjects taught in schools. Eventually, CPDT needs to produce excellent teachers who focus more on producing life-long learners (Su & Wood, 2012; Carr, 2003 & Ramsden, 2003).

Besides SEAMEO, UNESCO and OECD, there are also many world’s ICT organizations such as International Telecommunication Union (ITU), The United Nations Information and Communication Technologies Task Force (UNICTTF), The World Health Organization (WHO) and the International Society for Technology in Education (ISTE) which organize meetings consistently to maximize the impact and the potential of ICT in classrooms at universities and schools. In ensuring the achievement of Malaysia’s Vision 2020 and development of holistic and balanced human beings, MOE (MOHE merged with MOE in 2018) and its agencies has to design and structure CPDT to align with expectations of Industrial Revolution (IR) 4.0 and referred to as Education 4.0 as educators at higher institutions of learning. The Internet of Things (IOT) and Web 2.0 have revolutionized and transformed the way lecturers and teachers present good pedagogy of learning to their students (Seale, 2010 & Carr, 2003). Undoubtedly, “[t]he regulation of quality is central to the credibility of the higher education system” (Brown, 2010, p. 47). Brown cites that the quality of lecturers needs to be seen from students’ lenses or views.

To ensure teaching excellence at universities or schools, collaboration and interaction are expected to be integrated into teaching and learning processes (Luppicini, 2012; Kanter & Litow, 2009). Education 4.0 along with IR 4.0 are “expected to bring immense benefits and many challenges” (Morar, Arman, & Mousa, 2017, p. 2). With the help of Education 4.0, lecturers can increase their productivity and teach their students to be creative and innovative with technology and its tools (Waters, 2016; Drucker, 2014; Cordes & Stacey, 2017). Students are required to be effective and competent users of ICT (Roblyer & Hughes, 2018; Roblyer & Doering, 2012) as well as digital citizens (McAlister & Crappell, 2014; Winn, 2012). Universities need to train their lecturers to be skillful in dealing with a variety of digital resources.
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