Chapter 17
IR4.0 Ready and Aware Academics at the National Defence University of Malaysia

Jowati Juhary
https://orcid.org/0000-0002-5314-1195
National Defence University of Malaysia, Malaysia

ABSTRACT
This chapter argues for the importance of equipping academics with the knowledge and impact of IR4.0 and beyond for future graduates. Particularly to prepare for military leaders for Malaysia at the National Defense University of Malaysia (NDUM), a new learning model may be apt and urgently needed. The objectives of the chapter are twofold: firstly, to gauge the readiness and awareness level of academics on implementing IR4.0 during their classroom teaching, and secondly, to investigate academics’ views on their own teaching practices. The methodology for this chapter is quantitative in nature, where an online survey was used to collect data from the academics. It is found that, first, there are mixed reactions from academics on their readiness and awareness of IR4.0 and its impacts, and second, should the existing curriculum be revamped to serve students’ needs on IR4.0, academics opined that the delivery methods must change too.

INTRODUCTION
Education is dynamic since it evolves more often than societies realize. With multifaceted digital technologies today, higher learning institutions are faced with the demands and needs of the students, who are digital natives. Teaching and learning with technology is inevitable. Today, academics are challenged with the ideas on implementing Industrial Revolution 4.0 (IR4.0) in their classroom practices. Malaysia is also now moving toward fulfilling this need through various initiatives especially at its higher learning institutions. This chapter argues for the importance of equipping academics with the knowledge and impact of IR4.0 and beyond for future graduates. Therefore, the objectives of the chapter are twofold; to gauge the readiness and awareness level of academics on implementing IR4.0 during their classroom teaching, and second, to investigate academics’ views on their own teaching practices. The methodology for this chapter is quantitative in nature, where an online survey was used to collect data from the academics. It is found that, first, there are mixed reactions from academics on their readiness and awareness of IR4.0 and its impacts, and second, should the existing curriculum be revamped to serve students’ needs on IR4.0, academics opined that the delivery methods must change too.
teaching, and secondly, to investigate academics’ views on their own teaching practices. The author opines that in order to prepare the new breed of leaders, the students today must be trained to face the unknown challenges. Particularly to prepare for military leaders for Malaysia at the National Defense University of Malaysia (NDUM), a new learning model may be apt, and urgently needed.

As a new topic of debates and discussions, there are various questions on IR4.0 and its implementation, including how best to cater to the learning needs of the military and civilian students in a military learning environment. Especially for military cadets, they are undergoing their academic and military training concurrently. Will they be affected academically by the rigorous military training? Will they have issues to excel academically? Similarly, will the civilian students, who are also required to be in the Reservist Officer Training Unit (ROTU), be able to perform academically since they also have military training every Wednesday and sometimes, over the weekends? On the other hand, critical questions such as the awareness and readiness of the academics to serve the students for IR4.0 must be checked as well. Are they equipped with relevant teaching skills to assist students to learn? Are they able to deliver curricula that are tailored for IR4.0? What types of assessments are involved to measure students’ competency and skills? This chapter, nonetheless, focuses only on academics’ perceptions about all these issues.

To begin with, an overview of the NDUM will be offered. The Defense University was initially known as the Military Academy of Malaysia (MAM), which started its academic and military training in June 1995 with 172 military cadets (Ahmad Azan Ridzuan, 2011). Although it was a military academy, the academics were staff of a public university, Universiti Teknologi Malaysia, who were seconded to the MAM. This suggests that there were two components to teaching and learning back then. One, the academic component was served by another public university, and two, the military component was provided by the Malaysian Armed Forces (MAF). It was a smart collaboration between these two institutions until the government decided that it is best for the nation to have its own defense university. Consequently, in November 2006, the NDUM was gazetted in the parliament, and its first batch of students reported for studies was about 450 in number including military cadets and civilian students. To date, the Defense University has 3,856 graduates over a period of 11 years, and about 65 percent of them are military officers now serving all three branches in the MAF, namely the Malaysian Army, Royal Malaysian Navy and Royal Malaysian Air Force.

After 11 years of operation, the NDUM is still the youngest public university in Malaysia. Being the youngest has its advantages since the university is able to learn from the sibling universities in Malaysia. Despite its age, the most critical element for the graduates of the NDUM is its Intellectual Leaders of Character program, where all graduates must be inspired to possess. There are six attributes in this program, specifically targeted at military cadets explained briefly next. Firstly, graduates must have bachelor degrees in any relevant fields offered by the Defense University. Secondly, graduates must be commissioned military officers, and to achieve this, military cadets must achieve a Cumulative Grade Point Average (CGPA) of 2.75 and above. Thirdly, graduates must be qualified Imams (leaders for prayers), as well as able to lead in all religious activities. Fourthly, graduates must acquire black belts in an unarmed combat; in the case of the NDUM, taekwondo. Fifthly, graduates must be qualified players and coaches for at least one sports. Lastly, graduates must possess the skills and competency as officers and gentlemen/ladies. This last attribute will only be reflected when graduates join the armed forces and civilian workforce.

Given the new scenario in the workforce today, where IR4.0 becomes significant in manufacturing and business, what and how could higher education in Malaysia produce suitable workforce to face the challenges of the new world? This chapter argues that there are at least two components that higher