

Chapter 5

Developing Fluid and Organic Curricula: Key Principles and Lessons to Prepare Future-Ready Graduates

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ABSTRACT

Literature has argued for the importance of developing complex problem-solving and active learning capabilities among the graduates in response to the challenges posed by the Fourth Industrial Revolution. Literature has also argued for the need to promote interdisciplinary and personalised learning to nurture such future-ready graduates. To effectively fulfil and sustain this expectation, higher education curriculum must be designed to become more fluid and organic, promoting more personalized and interdisciplinary learning. This chapter outlines a curriculum framework as well as key principles and lessons learned in developing a fluid and organic curriculum through broad-based and flexible programme options. The chapter also highlights the importance of efficiency consideration to ensure scalability across a university. It is believed that such fluid and organic curricula caters to the changing demands of the industry as well as diverse learner career aspirations, interests, and the capability of learners.

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INTRODUCTION

The need to nurture future-ready graduates in response to the challenges posed by the Fourth Industrial Revolution has been actively discussed recently. The Future of Jobs Report (World Economic Forum, 2018) highlighted the “increased demand for new roles (as a result of the Fourth Industrial Revolution) ... (leads to) the need for proactive investment in developing a new surge of agile learners and skilled talent globally”. This chapter will start by discussing the graduate capabilities needed in response to the challenges, especially the complex problem-solving and active learning capabilities. It will then discuss the type of learning required to nurture those capabilities, focusing on interdisciplinary and personalised learning. It will review the current state and challenges concerning offering of interdisciplinary and personalised learning, and the need for fluid and organic curriculum.

This chapter will then outline a Curriculum Framework and its key principles in developing and implementing a fluid and organic curriculum, that promotes more personalized and interdisciplinary learning. It will then discuss the design outcomes, especially the broad-based and flexible programme options. This chapter will also highlight the importance of efficiency consideration to ensure scalability. It is followed by the key lessons learned from the experience of curriculum design and implementation, which will lead to recommendations for future research.

BACKGROUND

Literature argues that the increasing complexity of problems posed by the Fourth Industrial Revolution requires solutions that derive from multiple perspectives or interdisciplinary knowledge to increase the chances for success (Afifi, Atef, & Al Busaidi, 2019; Gillis, Nelson, Driscoll, Hodgins, Fraser, & Jacobs, 2017; Holley, 2017; Lattuca, Knight, Ro, & Novoselich, 2017). As a result, higher education institutions are required to equip students with the capacity to engage in interdisciplinary thinking, collaboration, and problem solving (Gillis, Nelson, Driscoll, Hodgins, Fraser, & Jacobs, 2017; Lattuca, Knight, Ro, & Novoselich, 2017).

This requirement leads to the need for a broad-based curriculum promoting interdisciplinary learning. The interdisciplinary curriculum requires students to synthesize and work with knowledge drawn from multiple disciplines to have a more holistic understanding of a given problem (Afifi, Atef, & Al Busaidi, 2019; Ashby & Exter, 2018; Holley, 2017; Lattuca, Knight, Ro, & Novoselich, 2017). The literature argues that the interdisciplinary education opportunities should be part of the undergraduate experience (Gillis, Nelson, Driscoll, Hodgins, Fraser, & Jacobs, 2017; Lattuca, Knight, Ro, & Novoselich, 2017).

Various models or efforts have been reported in the literature to promote interdisciplinary learning (Afifi, Atef, & Al Busaidi, 2019; Gillis, Nelson, Driscoll, Hodgins, Fraser, & Jacobs, 2017; Holley, 2017; Lattuca, Knight, Ro, & Novoselich, 2017). The various models or efforts can be summarised in the following perspectives:

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