

Chapter 13

Re-Designing the Architecture Curriculum Through the Lens of Graduate Capabilities

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ABSTRACT

Aligned to the national and global movement towards the definition, design, and mapping of graduate capabilities of university curriculum, universities are assigned the colossal task to incorporate these capabilities through curriculum design, delivery, and assessment. Using curriculum design research as the methodology of study, this chapter presents the framework and principles for the development of an innovative curriculum in architecture to enhance specific graduate attributes. It describes the constraints of time as well as competency in curriculum design to make critical evaluations of mappings, integration, and progression throughout the different year-level of the programme and within each module. While fueled with challenges, it suggests the propensity for enhancement of a curriculum that engages with the whole-person development as well as opportunities for teaching and learning innovations.

INTRODUCTION

Sociological and technological shifts have transformed the education ecosystem over the years. This phenomenon suggests a paradigm shift in architecture education to embrace 21st-century graduate attributes aligned to the impact of the Industrial Revolution 4.0 on future jobs. Skills demanded of graduates have changed based on the study by the World Economic Forum (2018). In architecture, these attributes are not new; however, they are not structured and intentionally designed within the “intended” curriculum at the macro level; however, they are implemented based on individual classroom practices and the individual initiative of the teacher. This individual classroom approach implies that the attainment of skills is by chance, and not by design. This paper posits the need to examine these attributes critically and offers conceptual thinking about how they are integrated into the architectural curriculum through the methodology of educational design research.

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Table 1. Comparing the top ten skills demand 2018 vs. 2020

Today, 2018	Trending, 2022	Declining, 2022
<ul style="list-style-type: none"> ● Analytical thinking and innovation ● Complex problem-solving ● Critical thinking and analysis ● Active learning and learning strategies ● Creativity, originality and initiative ● Attention to detail, trustworthiness ● Emotional intelligence ● Reasoning, problem-solving and ideation ● Leadership and social influence ● Coordination and time management 	<ul style="list-style-type: none"> ● Analytical thinking and innovation ● Active learning and learning strategies ● Creativity, originality and initiative ● Technology design and programming ● Critical thinking and analysis ● Complex problem-solving ● Leadership and social influence ● Emotional intelligence ● Reasoning, problem-solving and ideation ● Systems analysis and evaluation 	<ul style="list-style-type: none"> ● Manual dexterity, endurance and precision ● Memory, verbal, auditory and spatial abilities ● Management of financial, material resources ● Technology installation and maintenance ● Reading, writing, math and active listening ● Management of personnel ● Quality control and safety awareness ● Coordination and time management ● Visual, auditory and speech abilities ● Technology use, monitoring and control

Source: (Centre for the New Economy and Society, World Economic Forum, 2018)

BACKGROUND

21st Century Skills and its Impact on Graduate Capabilities and Curriculum Design

A recent World Economic Forum report, *The Future of Jobs* (Centre for the New Economy and Society, World Economic Forum, 2018), studied the employment, skills and workforce strategy for the future in the wave of Industrial Revolution 4.0. The trending skills included problem-solving, critical and creative thinking, and emotional intelligence, as shown in Table 1.

Graduate Capabilities

As the job landscape shifts, the employability skills and its relation to capabilities of graduates should be re-visited. Graduate capabilities are a set of attributes that form a framework of outcomes by which the university's graduates should acquire upon completion of studies. The concept of graduate capabilities has gained emphasis in higher education around the world in the last two decades in Australia, Europe, the United States and New Zealand.

In the literature, synonyms used to describe graduate capabilities are terms such as competencies, soft skills, employability skills, transferrable skills and graduate attributes. Standard Capabilities that have been in adopted in universities include: problem-solving skills, critical thinking skills, lifelong learning skills including research and inquiry skills, personal attributes, social skills, creativity, and cross-cultural awareness.

In recent works, Oliver and Jorre (2018) and Crisp and Oliver (2019) stressed the need to continually revise the capabilities to ensure their relevance to the rapidly changing employment contexts. It has been recommended that capabilities should be embedded in the assessed curricula, and assessments are explicit and clearly explained in relation to the capabilities.

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