Chapter 11
Bridging the Gaps of "Science/Social Science Education–Technology" With Values-Based Framework Development:
Exemplary Transdisciplinary Studies Related to STREAM

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ABSTRACT

Technological innovations in digital era has modified the landscape of education to be in line with industrial revolution,but created some psycho-sociological impacts to the society affecting healthy lifestyle. This paper reports on values-based sustainable STREAM education (VabsSTREAM) blended-mode transdisciplinary approaches to learning outcomes in higher education focusing on Science/Social Science education. Mixed-research was implemented involving mixed-mode of data collection/analysis methods. Literature review is made on related definitions, thereafter framework is developed bridging the gaps of 'Science (Biotech/Health Science), Social Science (Arts/Music/Cultural) Education (& Comparative Studies) and Technology'. Qualitative analysis involving multiple-case analysis with digital output reflecting framework and exemplary cases are reported. Illustration is made on how the design of Structural Model can be developed based on the framework designed for VabsSTREAM. Implications and significance are discussed with suggestions for future studies on knowledge management.

INTRODUCTION

Background and Overview

The increasingly globalized digital era with swift technological innovations has modified the landscape of educational settings to be in tune with the imminent industrial revolution (IR) 4.0 or even IR5.0 that is just around the corridor as reported by engineers (Leong, 2023). However, it also created some psycho-sociological impacts to the society such as environmental pollutions and even pandemic affected much of the healthy lifestyle of global citizens as experienced by all. These require many transdisciplinary approaches involving contextual and/or problem-solving as revealed from literature (O'Donnel & Day, 2022). In line with the current trends in the advent of digital transformation, the methodological basis of research trends had been gearing towards transdisciplinary approaches to ensure any 'ad hoc, opportunistic, repeatable' contextual problems are solvable or can be well 'managed' from various angles with 'optimized' resources (Agustina, 2021; Dziuban et al., 2018; Güzer et al., 2014; Hay, 2017; i-SCOOP, 2024; Mansurjonovich & Davronovich,

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