Chapter 7
Inciting Systems Thinking Through Connectedness in Teaching and Learning:
A Case of Universiti Teknologi MARA Dental Education

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ABSTRACT

The chapter discusses the integration of systems thinking and connectedness in dental education at Universiti Teknologi MARA (UiTM) to achieve Sustainable Development Goals (SDGs), particularly SDG 4 (Quality Education). It highlights challenges in integrating Education for Sustainable Development (ESD) and emphasizes values-based education. The A.D.A.B. Model (Analyze, Design and Deliver, Assess, Build in Belief) developed by Universiti Teknologi MARA (UiTM) is introduced, which integrates intellectual, emotional, moral, and spiritual dimensions into education. Case studies demonstrate the successful application of the A.D.A.B. Model in promoting connected learning and systems thinking among dental students. The chapter concludes with recommendations for further validation of the model, integration of systems thinking across disciplines, enhancing connectedness in learning, and professional development for educators.

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INTRODUCTION

The target year to achieve the Sustainable Development Goals (SDGs) is fast approaching. The United Nations Sustainable Development Goals Report 2023 stipulated that progress towards SDGs including SDG 4 (Quality Education) was stalled due to factors such as the pandemic, conflicts and climate change. Malaysia in particular has not achieved the SDGs but is expected to be on track by 2030 (SDG for Malaysian States, 2022). In particular, Target 4.7 that is to '*ensure all learners acquire knowledge and skills needed to promote sustainable development, including among others through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship, and appreciation of cultural diversity and of culture's contribution to sustainable development'* (Sustainable Development Solutions Network- SDSN) was not particularly reported in the document. The speed at which the education community lags is a cause for concern despite the awareness and enthusiasm to implement Education for Sustainability Development (ESD) (Acut, Lobo, & Garcia, 2025; Zainal Abidin, Mokhtar & Arsat, 2024; Batool & Habiba, 2021). Educators report low understanding of the ESD design, lack of training on ESD integration and the top-down nature of the education system as challenges in integrating ESD (Wang, Loh, & Sera, 2023;Balakrishnan, 2021; Mohamoud, Maon, & Kassim, 2020). Despite being off-track, educators must be empowered through ESD. This chapter promotes ESD in the form of lesson design. It discusses specific sustainability competency and how it is being incorporated into the students' educational program by designing learning based on connection.

BACKGROUND

SDG 4 aims that all people have access to quality education and lifelong learning opportunities. Target 4.7 is all about sustaining planet health through education and equipping people with the knowledge and skills they need to live sustainably. The SDG indicator 4.7.1 measures the 'Extent to which (i) global citizenship education and (ii) education for sustainable development are mainstreamed in (a) national education policies, (b) curricula, (c) teacher education, and (d) student assessment' (UNESCO, 2016)

The UNESCO Institute of Statistics describes Education for Sustainable Development (ESD) as follows:

The Adoption of Mobile Devices as Digital Tools for Seamless Learning

Gürol Yokuand Tuba Yanpar Yelken (2017). *Digital Tools for Seamless Learning (pp. 297-324).*

www.irma-international.org/chapter/the-adoption-of-mobile-devices-as-digital-tools-for-seamless-learning/172844