

Chapter 2

Teach Less, Learn More: A Paradigm Through Collaborative Learning in Science

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ABSTRACT

This chapter attempts to promote the use of collaborative learning as a strategy for teach less, learn more (TLLM) in science education. This does not mean that more traditional modes of teaching should be abandoned entirely in learning science. The idea is to provide a platform for learners to construct meaning through communication and comparison, where the learners are required to resolve different viewpoints that may surface along with their interactions and experiences with others. Overall, the aim is to move away from rote learning, repetitive tests, and teacher-centered learning towards more engaged learner-centered education by using practical collaborative approaches and strategies. The rationale and methods for the implementation of collaborative learning are also discussed. Such procedures were found to be useful to promote active and self-directed learners.

TEACH LESS LEARN MORE (TLLM): AN EDUCATION INITIATIVE

Teach Less Learn More (TLLM) is an education initiative that aims to achieve educational goals by reducing content quantity (e.g. memorization of facts) and injecting higher quality teaching process through the utilization of active learning pedagogies. A rigid and siloed education setting is no longer sustainable, which makes active learning important to prepare learners today with disposition and agility to respond to opportunities and threats for the volatile, uncertain, complex and ambiguous (VUCA) world. TLLM initiatives scaffold learners towards the development of essential competencies and shape their learning. It should not be an approach that permits the teachers to do less, instead it can be translated as providing a good lesson design that enables learners' understanding to develop and deepen their

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understanding of critical ideas. In other words, TLLM envisions learners to be engaged in the process of learning while teachers delineate the purpose, content and pedagogy of instruction given the need to prepare learners to be future-ready.

The Inception of TLLM

The TLLM education approach was first conceptualized by Singapore's Prime Minister Lee Hsien Loong in 2004 during the National Day Rally. Lee hoped to streamline Singapore's education by reducing rote learning and adopt teaching methods that would engage learners and prepare them for the future. The Singapore TLLM initiative envisioned that education could be reshaped by striking a balance between academic and non-academic pursuance, which involves expansion of the curriculum, shaping various soft skills, attributes and multiple intelligences. The emphasis of TLLM in education is to ensure that learners are to be successful in the 21st century. The approach aims to make learning more diverse and flexible through the incorporation of integrated programs in schools, including specialized areas of interest such as Sports, Arts, Mathematics and Science. Meanwhile, in alignment with this TLLM approach, some schools in Singapore moved practical studies including Filmmaking, Designing, IT, Nutrition and Cooking for children as exam subjects or electives, in order to provide learners various career pursuit pathways.

The TLLM approach started as a prototype in Singapore involving 29 schools in 2006, and slowly expanded to 327 schools in 2011. Though this initiative encourages innovative teaching and learning pedagogy, teachers spent more time in preparation for the classes. Besides, teachers have difficulty in balancing the application of TLLM objectives and the need to cover the syllabus and preparing learners for examination as there is a more considerable emphasis in Singapore for grades and academic performance. Nevertheless, the Singapore Education Ministry found that TLLM initiatives enhanced learners' engagement and teachers' professionalism. Based on the analysis, learners claimed that learning becomes more interesting and exciting as they were more attentive and participated actively.

Similarly, the Malaysian education system has grown to have an equal focus on technical and vocational training, along with traditional academic pathways. The Malaysia Education blueprint 2013-2025 has highlighted the significance of striking a balance between knowledge and skills together with ethics and morality that are being built around qualities such as leadership skills, national identity, language competency, thinking skills and knowledge. The aim is to produce holistic, entrepreneurial and balanced graduates who are values-driven and job creators. With that, the Ministry and higher learning institutions have focused on providing an integrated and comprehensive educational system that is personalized, addresses learners' needs in addition to a better learning involvement. TLLM approach may not be clarified substantively in the blueprint; nevertheless, it demands teaching to be more than imparting textbook knowledge and to inspire learners to learn in creative ways.

Key Features of TLLM

The implementation of TLLM is based on three key elements: core purpose, content and pedagogy of instruction for preparing learners to be future-ready.

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