
Book review: Developing metacognitive teaching strategies through lesson study

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Developing Metacognitive Teaching Strategies through Lesson Study
Singapore
Springer
2021
79 pages, ISBN 978-981-16-5569-2

The first chapter of this book assumes that streaming education can help workplaces cope with the hurdles posed by Industry 4.0, and it also outlines the education required to address Industry 4.0 and self-regulation as the competency-based curriculum's (CBC) key learning outcomes. It poses a challenge in terms of constructively implementing the CBC to help students develop self-regulation skills. The requirement for cognitive learning processes to be regulated in order to achieve the curriculum's goal of successful learning. The enhancement of the CBC and its proposed learning outcomes on the self-regulation abilities of students are depicted in this chapter. Education for Industry 4.0 transitions from "knowledge based to competency based programmes, with the goal of cultivating students' competence" (p. 22). It is ultimately up to the teachers' competencies to address the challenge of efficient implementation of such projects. In order to apply the new curriculum, teachers must adapt to the dynamic nature of knowledge. Literature on metacognition and metacognitive teaching has been examined in chapter 2 in order to discuss the significant uniqueness and task of metacognition, metacognitive teaching, and self-regulating skills in efficient teaching-learning process and also to highlight the need of implementing a competency-based curriculum effectively. The findings of studies on memory, problem-solving, reading, comprehension and developing metacognitive competency have been critically reviewed. It also articulates the impact of metacognition on students' learning outcomes and other skills using an empirical model.

Lesson study is a medium for instructors to exchange and develop pedagogy in which their latent knowledge is socialized, externalized and systematized in lesson-plans across disciplines, which can then be synthesized to form school pedagogies for broader diffusion and internalization. With the help of "SECI model" (p. 30), chapter 3 demonstrates how lesson study can be utilized to promote metacognitive teaching using a case study carried out in Hong Kong. Theoretical and practical considerations for employing lesson study to craft metacognitive teaching approaches for boosting students' learning abilities are discussed in



Ethics approval and consent to participate: Not applicable.

Consent for publication: Not applicable.

Availability of data and materials: Not applicable.

Funding: This review work was funded by University Grants Commission, New Delhi (Grant Number: NFO-2018-19- OBC-ORI-77288).

Authors' contribution: There is only one author in this paper. The author read and approved the final manuscript.

Competing interests: The authors declare that they have no competing interests.

this chapter. It also explains the way lesson study can be used to create metacognitive teaching pedagogies that help learners learn more effectively. “A lesson study model based on variation theory” (p. 43) is described in chapter 4 as a tool for using metacognitive strategies for instructional design. Despite the variation theory’s resilience in resolving student misconceptions, there are currently no viable teaching tools for enacting the patterns of variation. As a metacognitive learning behaviour, discerning the pattern of variability can be enacted through metacognitive teaching strategies. This chapter discusses about biology teachers who have had the opportunity to visualize these concepts. The concluding chapter addresses the character of “knowledgeable others” (p. 61) in lesson study to help instructors understand the fundamentals of metacognitive teaching. It also articulates that completing lesson study allows teacher to gain more expertise and internalize their knowledge for effectively executing CBC through instructional designs.

The book itself applies a metacognitive teaching plan to give scaffolding instructions so readers can experience metacognitive learning. By integrating variation theory and lesson study, this book opens up new research avenues. It also includes a proficient toolkit aimed at pre-service and in-service teachers. It articulates a teaching-learning improvement initiative that used lesson study as a medium for developing metacognitive pedagogies among instructors, pre-service teachers and partnered school teachers. The study was carried out using a “school partnership model” (p. 61) that offered a genuine teaching-learning atmosphere for pre-service students to improve their metacognitive teaching abilities.

Students will be expected to be lifelong learners as a result of Industry 4.0. In a world where artificial intelligence technology is rapidly evolving, there are few skills more crucial to instil in pupils than the ability to “learn to learn” (p. 22). Cognition encompasses intellectual processes that aid individuals in generating novel knowledge and applying what they already know. Metacognition provides an individual with active control over their own cognitive processes. Progress in metacognition among students unquestionably improves their academic performance. Educators must be equipped with the essential pedagogical competences in order to help pupils improve their metacognitive capacities. During the preparing, observing, and reflecting phases, lesson study allows teacher to work together in the teaching and learning process by bringing in and exchanging their experiences of how learners learn and how to make their thought process apparent. Without a doubt, the global adoption of lesson study has proven it to be an effective device for developing pedagogical expertise in teaching. This book is intended to be one of many resources and practices available to help teachers use metacognition more effectively in teaching. Through the application of these strategies, teachers can gradually influence pupils’ learning behaviour to assist them become skilled learners and prepare them for their future.

Abbreviation

CBC Competency-based curriculum

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Further reading

Acedo, C.C. and Hughes, C. (2014), “Principles for learning and competences in the 21st-century curriculum”, *Prospects*, Vol. 44, pp. 503-525, doi: [10.1007/s11125-014-9330-1](https://doi.org/10.1007/s11125-014-9330-1).