

The Impact of Community-based Teacher Learning on Student Learning Outcomes

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KEY IMPLICATIONS

1. Prioritise and rationalise PLCs as a lever to achieve school objectives.
2. Invest in the development of PLT team leaders to build collaborative culture, develop teacher competencies, and ensure improvements in classroom teaching.
3. Effectively use student learning data to guide PLT discussions in determining effectiveness of teaching strategies and improving teaching strategies.

BACKGROUND

Community-based teacher learning (CBTL) started in Singapore in 2000, with the introduction of Learning Circles, followed by other forms of community-based teacher learning platforms such as Action Research and Lesson Study. By 2010, the Ministry of Education had embarked on a school- and system-wide approach to CBTL in the form of Professional Learning Communities (PLC). However, there are no studies looking at its impact on student learning outcomes locally, and studies are marginal in the international context also.

FOCUS OF STUDY

There were two main reasons for conducting this study. First, as resources have been used to support CBTL, practitioners and policymakers understandably want to know if this endeavor does improve teaching practices and students'

learning. Second, CBTL can only be considered effective if it has a positive impact on students' learning. The study therefore investigated whether CBTL impacted student learning outcomes, and if so, how.

KEY FINDINGS

The study showed that enhancing CBTL (e.g., PLCs) has the potential to impact student learning outcomes. The growth of Primary 5 (P5) students' mathematical problem solving ability in the experimental schools was statistically higher than those in the control schools, $t(1389) = 2.247$, $p < .05$, with a small effect size (0.124). The following explained how PLCs impact student learning outcomes:

1. The PLC impact on student learning outcomes was indirect through its impact on teaching.
2. Collective learning involving the promotion of sharing, reflecting, and interrogating/testing teachers' knowledge enhanced the translation of teacher learning, in PLC, to teaching practices.
3. Collective learning translated to collective teaching approaches, which were then modified to meet individual teachers' teaching needs and students' learning needs, and enhanced the translation of teacher learning in PLC to student learning.
4. Assessment data gave insights into individual students' learning needs which helped teachers determine the effectiveness of instructional practices, and refine them, which enhanced the translation of teacher learning in PLC to student learning.

5. Teacher leadership in PLC played a critical role in enhancing the effectiveness of PLC in three ways: a) building collegial and collaborative relations, b) promoting teacher learning and development, and c) enabling changes in teachers' teaching practices.
6. School leaders played a significant role in supporting PLC, for example, by providing direction, human and physical resources, grouping Professional Learning Teams (PLT), and monitoring.
7. A positive teacher attitude towards PLC can be nurtured if they are able to experience the teacher learning in PLC impacting teaching practices and students' learning.

evaluate the effectiveness of teaching strategies, evaluate students' conceptual understanding and misconceptions, modify teaching strategies, and monitor the growth of their students' abilities.

- Synergize school-wide formal and informal leadership support. School leaders can prioritize PLC as a key to improving school processes and meeting school objectives. Heads of Department (HOD) can ensure that the learning outcomes of PLTs are translated to curriculum change and development. School staff developers (SSDs) can provide the necessary professional development framework to build teachers' capacity for PLC. Senior and Lead Teachers can share their rich pedagogical knowledge and mentor other members in the PLTs.

SIGNIFICANCE OF FINDINGS

- Invest in the continual and progressive development of teacher leaders in PLTs. Besides recruiting suitable team leaders, schools should invest in the continual development of teacher leaders (e.g., inductions, monthly conversations among team leaders within the school, enrollment in AST team leader facilitation courses, etc.).
- Deepen collective learning in PLTs, progressing from the sharing of knowledge to reflecting on knowledge, and interrogating/testing of knowledge. In order to deepen pedagogical knowledge, teachers should go beyond simply sharing knowledge (e.g., ideas or resources), and move towards reflecting on their teaching practices. In doing so, classroom teaching can be brought into PLT conversations. PLT members should also test their assumptions on effective teaching practices using data as evidence.
- Strategically use assessment data in PLTs. Schools should adopt assessment approaches or platforms that help teachers

POPULATION

A total of nine mainstream primary schools participated in the study (three were experimental, six were control schools) involving 1391 P5 students, 45 P5 teachers, 9 SSDs, 9 Math HODs and 9 school leaders participated in the study.

RESEARCH DESIGN

The study employed a quasi-experimental research design to investigate the impact of CBTL on P5 student learning in mathematical problem-solving. The growth of the students' mathematical problem-solving ability in the experimental and control schools were compared between Time 1 and 2 using Rasch analysis. Data from focus group discussions was also collected to investigate how CBTL impacted on student learning. The three P5 PLTs from the experimental schools received intervention help from the research team.

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This brief was based on the project OER 14/12 HS: The Impact of Community-based Teacher Learning on Student Learning Outcomes.

How to cite this publication

Hairon, S., Goh, J., Chua, S.K., & Wang, L.Y. (2015). *The Impact of Community-based Teacher Learning on Student Learning Outcomes*. (NIE Research Brief Series No. 15-001). Singapore: National Institute of Education.

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