

Brain-Friendly Techniques for Content Mastery and Retention: The Teaching of Malay Proverbs

Nuratiqah Mohammadhaizan, *Madrasah Irsyad Zuhri Al Islamiah*

In Singapore, there are 6 full time madrasahs. All the madrasahs come under the Education Act. Under section 87 and 88 of the Administration of Muslim Law Act, the control of Muslim Religious Schools shall be vested in MUIS. Madrasah Irsyad Zuhri Al-Islamiah caters to students from ages 7 to 12 and offers a dual curriculum consisting of 3 languages, mathematics, sciences, humanities and the Islamic studies. The curriculum is heavy for students and teachers strive to provide them with engaging learning experiences to support optimal use of curriculum hours. In this action research, we present the intervention project and outcome which focuses on the teaching of Malay Language Proverbs. This topic was of interest to the teachers because in the past 3 years, the performance of Madrasah students in Malay Language at Primary School Leaving Examination (PSLE) has been higher than the national average in all topics except for the topic of Proverbs component. The intervention project was designed to examine, analyze and address the under-performance in proverbs. Firstly, a set of customised proverbs cartoons was developed to support visual learning for the students. They were specifically designed for the students. Secondly, brain-friendly lesson segments which includes 'chunking' 'play' and 'reinforcements' were incorporated into the lesson delivery. Insights from student interviews were used to inform the lesson design. Pre and post-tests were administered to examine the outcome of the action research. The post-test results indicate that the visual representations and the brain-friendly techniques supported students understanding, mastery and retention. This intervention was well-accepted by students and they have shown improvements in their proverbs section. It is hoped that the findings from this action research will help us, teachers from all madrasah schools, understand the impact of the use of visual tools and cooperative learning strategies in improving the teaching and the learning of proverbs.

Abstract Number: 20071

Examining the Activity of 'Knowledgeable Other' in Lesson Study as a Hermeneutic Effort

May R. Chavez, *University of the Philippines*

Erlina R Ronda, *University of the Philippines*

The role of knowledgeable other (KO) is considered one of the critical factors for lesson study (LS) to be successful and productive for teacher learning. The KO is typically most visible during the post lesson discussion where they are expected to give the final comment about the research lesson. They are expected to provide deeper meaning to teachers' LS experience so that teachers' subjective experience in LS is transformed into significant professional learning. However, the role and activity of KO is less understood outside Japan and under theorized, even in Japan (Takahashi, 2014).

The study we present here aims to contribute towards understanding the activity of KO in LS using hermeneutic effort as theoretical construct. We adapted Isoda's (2015) description of this construct as consisting of four principles or process: (1) understanding the text (for self); (2) getting other's perspective; (3) instruction from experience (self-understanding); and (4) the hermeneutic circle. He proposed these principles for interpreting and sharing objectives of the lesson study so that it can be further developed. This paper takes the construct at the more specific activity in LS. Starting from the assumption that the object of interpretation of the KO and the LS team is the research lesson, we examine the activity of the KO vis-à-vis the hermeneutic process and the LS activities. To illustrate, the study made use of the researcher's experience as a KO in three lessons in elementary science. The data sources include the written research lessons, video-records of the implementation of the research lesson, the post lesson discussion, and interview of some pupils and, the KO's journal. The activity of the KO for each research lessons were analyzed in terms of the four phases of KO activity based on the hermeneutic process (1) interpreting from one's view; (2) interpreting from the point of view of others (teachers and learners); (3) reinterpreting one's view (bring new learning for self); and (4) interpreting and re-interpreting with other experts and/or with objective resources.

From the three LS cases analyzed our findings suggests that the activity of the KO can just be classified under level 2 of the hermeneutic process. There may be factors that hinder the KO to reach level 3 and 4 of the hermeneutic process. These could be the level of experience and knowledge of the KO, time to analyze the research lesson ahead, and setup/organization of the school. This paper recommends that describing the KO activity in terms of hermeneutic effort can also serve as framework for designing training for KO.

References

Isoda, M. (2015). Dialectic on the problem solving approach: Illustrating hermeneutics as the ground theory for lesson study. In S. J. Cho (Ed.), *Selected Regular Lectures from the 12th International Congress on Mathematical Education* (pp. 355-381). Switzerland: Springer International.

Takahashi, A. (2014). The Role of the Knowledgeable Other in Lesson Study: Examining the Final Comments of Experienced Lesson Study Practitioners. *Mathematics Teacher Education and Development*, 16(1), n1.

Abstract Number: 20413

Implementation of Problem Based Learning Model to Improve Student Metacognitive Skills through Lesson Study

Muhammad Ilyas, *Universitas Cokroaminoto Palopo*

Suaedi Fachruddin, *Universitas Cokroaminoto Palopo*

Nur Wahidin Ashari, *Universitas Cokroaminoto Palopo*

Rahman Hairuddin, *Universitas Cokroaminoto Palopo*

Problem-based learning provides an opportunity for students to solve problems presented by digging information as much as possible, then analyzed and sought solutions from problems. The process of learning mathematics should be able to actively involve the process and activity of student thinking by developing metacognitive activity. This research is an experimental research on mathematics education research methodology course developed through lesson study. The team of lecturers in the methodology course planned, implemented and reflected learning for four cycles. Metacognitive activities include planning, monitoring and evaluation that are integrated into each phase of the problem-based learning model. The results showed metacognitive activity of students in planning what will be implemented in understanding the problem. Metacognitive activity of students at the monitoring stage is shown in monitoring every step taken in understanding the problem, the relationship of data with the questioned, the initial knowledge used to solve. The student's mental activity at the evaluation stage is shown evaluating the steps used in solving the problem, evaluating the initial knowledge used, the truth of the settlement step, the important information being used, and the possibility of completion in different ways.