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Understanding the Concept of Life Process in Animals Based on 7E inquiry Model through Lesson Study Approach

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Teaching and learning of science-based inquiry is very relevant because it combines all of the science process skills. But the extent to which it is implemented is still a challenge to educators and students. Looking at the success of Lesson Study approach in Japan has given a high aspiration towards the Ministry of Education Malaysia to adopt this approach and equitable education system in Malaysia. Lesson Study may be a good approach to be adopted in the inquiry teaching activities because it will not only improve teachers' professional skills but also to ensure the practice of student's science process skills while doing science through the collaboration of teachers. Thus, this study aims to explore the development of year five pupils' learning in implementing inquiry-based science activities through Lesson Study approach in the topic of life process in animals. The lesson study's step began with the researchers plans lessons that integrate inquiry along with four teachers at the school, followed by open class, and reflection after teaching. There are eight observers which involved during open class and reflection which from teachers in school, teachers from other school and science educator from university. Activities of the inquiry involves seven phases in the 7E inquiry learning model which include of elicit, engage, explore, explain, elaborate, evaluate and extend. As a result of observation and reflection found a few features inquiry was conducted by students during the learning process such as: i) making an observation, ii) engage in questioning, iii) obtain and use relevant information, iv) propose answers, description or expectations about a situation, v) communications, vi) lower-order thinking skills (LOTS) and vii) higher order thinking skills (HOTS). The implications of this study shows that lesson study approach helps teachers plan how to integrate the inquiry while further implementation can be evaluated by other teachers to improve the lesson of inquiry based-learning to be carried out successfully in the context of students learning.

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A Presentation of a Japanese School Professional Development Model Supporting Collaborative Inquiry and Reflective Practice Record Writing of Teachers

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This qualitative study focuses on a Japanese junior high school and its organizational structure which supports teachers' continuous long span inquiry learning through collaborative reflection and reflective writing. In this school, teachers examine learning by collegially following through students' responses and uncovering students' thinking processes to create a new perspective about learning and to cultivate a stronger community of practice. The teachers model the kind of inquiry learning expected from their students, inquire together regardless of subject and/or grade level, and grow together in pursuing students' learning. These result to an ongoing cycles of students' learning inquiry and teacher's practices which are documented by teachers in their reflective practice record. But what are these reflective practice records and what do teachers write after the reflection? How does a reflective practice record look like?

The researcher had been working with the school for more than two years now attending its research and lesson study meetings to understand the kind of topics and questions being raised during discussions, and how comments, questions and suggestions reorganize a teacher's thoughts and reflections. Also, the researcher examined and compared four different completed practice records written by arts, english, math and music teachers to explore emerging patterns of what teachers write on their practice records. These are then validated with the school's existing documents and practices to orient new teachers with reflective practice record writing. Thus, this presentation focuses on the following points as a result of the research: (a) concrete exemplars of what teachers write in their reflective practice records, (b) the kind of learning stories highlighted in the reflective practice records, and (c) the school's professional development model that supports reflection and writing. The practice of reflection and writing enables teachers to look closer and pursue students' thinking processes which promotes teachers' deeper understanding of their students. Moreover, giving teachers a space to reflect and learn both individually and collectively contributes to the depth of the reflection taking place which in turn contributes to the improvement a teacher's professional capital and to the school's culture of inquiry.

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Teacher as Learning Designer: Aligning HBLT with SLS Pedagogical Scaffold - A Case Study of a Mathematics Lesson in Percentage

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In this presentation we share how White Sands Primary School (WSPS), a school in the eastern part of Singapore, embarks on a whole school Lesson Study (LS) approach where each staff is a member of a lesson study team. A LS workshop was held to give all teachers an overview of lesson study. The professional learning goal and research theme for the school were crafted during the workshop. The structure and schedule for the year were then drawn up for 16 teams for the following subjects: English, Mathematics, Science, Mother Tongue, Physical Education, Art and Music. A Celebration of Learning Conference was held after seven months to share our learning in the LS journey.

LS has provided teachers the opportunities for professional dialogue and is instrumental in improving our practice in teaching and learning. It has also supported a culture of trust, a drive for improvement and a shared responsibility for student outcomes among the staff.

Singapore is now into its fourth Masterplan (mp4) in Information and Communication Technology (ICT) which is about sharpening and deepening of ICT practices to prepare our students to be future ready and responsible digital learners. For teachers, this means they need to be able to design learning experiences and environments and harness ICT, with regard to the curriculum taught, pedagogies used and assessments done to inform the learning of the students. The teacher as a Learning Designer plans the learning tasks and designs the experiences and environments, made possible by the range of ICT tools for the learning to take place, resulting in greater student engagement.

One of the tools in mp4 is the SLS (Student Learning Space) Pedagogical Scaffold which is a design tool to guide teachers in deciding on teaching processes for active learning experiences with technology. It comprises three design phases. There are four active learning processes in the design of learning activities with technology. WSPS has been using the HBLT (Hook Book Look Took) lesson framework to guide teachers in lesson planning. It is simple yet effective and has been found to be well-suited to meet the learning needs of WSPS pupils. The HBLT was originally developed by Richards and Bredfeldt (1998) and subsequently adapted by Renandya and Tedjaatmadja (2012).

Our team found similarities in both and designed a lesson to address a common misconception in percentage using both the SLS Pedagogical Scaffold design process and the HBLT framework. This common misconception is that pupils are often not able to identify the base when the original number was increased or decreased. Learning activities that promote active learning processes using a Google site together with Google Slides and the Padlet and Linoit applications to support collaborative and self-paced learning were designed for a class of Primary 6 pupils. The main idea of the lesson is to design an ICT lesson to address the misconception using LS and in the process develop teachers professionally. In this presentation, we will

share how we aligned both the HBLT framework and SLS design tool using LS as a platform to sharpen and deepen our ICT practices. We will share our pupils' artefacts and reflections as well.