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## Deconstructing Teacher Expertise for Inquiry-based Teaching in Japanese Elementary Classrooms: Neriage as Consensus Building Pedagogy

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This paper discusses a study on the nature of teacher expertise that it takes to effectively teach inquiry-based lessons by looking into the Japanese inquiry-based lessons involving neriage (whole class consensus building). We videotaped a series of inquiry-based mathematics lessons taught by leading teachers at Japanese elementary schools and interviewed the teachers on the observed lessons. The triangulated data analysis revealed that the teachers made use of their structured lesson plans that involved the four steps (hatsumon, kikanjunshi, neriage and matome) of Japanese inquiry-based lessons, but if needed, derailed from them on the spot as they made a variety of decision-making to catalyze students' independent thinking and to achieve the content goals so that students are ready for the climax of the lessons. In the climax of the lessons, they facilitated whole class discussions in which they asked students to collectively examine different strategies and mathematical ideas presented by their peers and build consensus on the best strategies to use next time in the form of neriage. To make sure that every student is on board, the teachers flexibly modified and optimized the scopes and sequences of their lessons on the spot. The follow-up interviews with the teachers revealed that their lesson planning and actions during the lessons were backed by their successfully anticipating students' diverse responses to their questions, their understanding of the social dynamics of the class and their commitment to mainstream all the students to achieve the targeted goals. All the teachers conceptualized their inquiry-based lessons as an arena to build a strong and inclusive learning community in which students' personal and social development can be catalyzed through mathematical learning. They all indicated that they developed the expertise through school-based lesson study and informal conversations with experienced teachers at their workplaces in which they could share and discuss actual lessons, classroom situations and specific needs of students. There, they learned how to deal with the complexity and uncertainty of inquiry-based teaching as they gained new perspectives and possible solutions offered by their peer teachers. In fact, the teachers even had an opportunity to reflect on their inquiry-based teaching in terms of the existential dimension of their profession as they learned about who they should be as a teacher' in informal dialogues with experienced teachers at their workplaces. Based on these, we argue that teacher expertise needed for effective inquiry-based lessons is highly organic and cannot be separated from practice contexts. The study implies that teacher education programs should not be structured with a single-cycled model detached from decision-making in the social dynamics of the practice context. Rather, it should furnish systemic opportunities for teachers to develop adaptive expertise characterized by organic envisioning, inter-subjectivity and inclusiveness in practice contexts.

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## **Real Class Observation: The Best Way for Prospective Science Teachers to Learn Strategies- Methods of Teaching and Classroom Management**

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Teaching science is basically aims to enhance science literacy of students. According to students, learning from a text book on how to build students' science literacy is a difficult thing to imagine. Some research results stated that learning from real situations is the best practices that can build the competency of prospective teachers to teach science than just using the theories only. Research with the descriptive method has been done to know how far real class observation can be able to build competence of secondary school teacher candidates in designing science lesson plan. After attending a classical class where all theories about learning are delivered (six meetings), as many as 20 teacher candidates followed four class observations from four different science teachers. In every observation, students observed models, strategies, learning methods and classroom management. In addition, students also interviewed several students and four model teachers to confirm the results of his observations. The observation results were then discussed in the class. The results showed that students gave a very large response to this observation activity. Student motivation on learning is seen during the discussion and can be observed from the many questions and responses posed by the students. The best practice they gained was that classroom management greatly influences the success of learning science of students, as well as the appropriate methods and learning strategies used. Moreover, the students' competence in designing learning increases, significantly different with the other class that follow classical learning with group discussion without class observation.

## The Influence of Teacher Strategies in Responding Children in Their Early Childhood

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Curiosity is as important as intelligence and it is one of the most important factors in academic performance of students. Teachers can inspire curiosity in students to keep them engaged and to facilitate their learning process (S. Von Stumm, B. Hell, and T. Chamorro-Premuzic, 2011). In this paper we observed teacher various ways in responding to preschool children curiosity that affects their behavior while doing activity in the class through lesson study. This lesson study will show influence and teachers most appropriate response to children through instruction, questions and statement in activity involving the ability in problem solving. The conclusion from the observations through lesson analysis is that if teachers use statement and provide an open question will give chance for children to find their own solutions and facilitate them to develop a sense of curiosity. This certainly could be a reflection for teacher to create strategies in responding to children in various activities in the classroom.

Key words : curiosity, preschool, responding children, lesson analysis