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Enhancing Visualization of Student Thinking in Lesson Study through a Learning Environment Technology: A Case of Problem Posing in Arithmetics

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Students thinking which discussed a lot in lesson study activities occurred invisible, embedded as part of ongoing, and experiential; connected to and driven by classroom experiences, their development stages and growth as well. Making visualizes this invisible thinking would bring benefit for teachers to be more anticipating on their learning trajectories. The paper describes how visualization of students thinking analysis supported by particular learning environment - apps for learning arithmetics in primary level ' used in lesson study, especially finding on a misconception. Discussion on how teachers effort conventionally through the lesson study cycles to grasp students misconception is compared with the result of graphs analysis of learning analytics produced from the apps. A real time version expected provide new directions in students learning trajectories analysis methods and teachers improvement treatment in the classroom for better students learning experiences.

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Making English Great Again!

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English is the lingua franca in a multiracial Singapore. However, reading is at an all-time low. According to a study conducted by the National Arts Council, Singapore, among the 1015 Singaporeans and Permanent Residents surveyed, 56% had not read a literary book between March 2014 to March 2015. According to the Straits Times, A lmost half of these non-readers cited lack of time as a reason for not reading. The same proportion cited a lack of interest.' Students at Westwood Secondary School, Singapore, also face similar challenges, with some of them not even reading newspapers or non-fiction books during their leisure moments. This has a direct impact on their ability to interact with English as their schema is not enriched through outside sources. This affects their language awareness, ability, and therefore lowers their willingness to comprehend and engage holistically as well as critically with the English language. The immediate gaps are a shallow vocabulary base, a reluctance to express themselves either through writing or formal presentation, and languishing test scores. Though we teach vocabulary in a variety of ways, either directly (having standalone vocabulary lessons with words, attendant meanings, and examples given) or indirectly (explication of passage and words before students attempt either the Cloze Passage or Comprehension), students still find it difficult to incorporate these new or unfamiliar words in their usage. The English Department of the school therefore embarked on a lesson study to revive students' appreciation of the English Language that incorporates the use of Information and Communication Technology (ICT), Assessment for Learning (AfL), and Process Writing, while following the six Principles of EL Teaching and Learning (CLLIPS), adapted from the EL Syllabus 2001, and following the teaching processes called ACoLADE as mentioned in the EL Syllabus 2010, in order to provide A contextualised and holistic approach to learning that will provide a rich language environment for developing language skills, grammar and vocabulary.' We have hence developed a more engaging, interactive, fulfilling and organic way of achieving vocabulary attainment and mastery. The key objectives are to stoke and rekindle the students' interest, sense of curiosity, and joy of learning in the language. This will have the added benefit of facilitating their learning, and cause them to pick up and retain new words, appreciate the meaning, and understand the context and cultural / current relevance. This was rolled out to the Secondary Three Express Stream students in Term 3, 2016. It involved screening TED shows with the subtitles to these students, upon which they are tasked to identify key / difficult words and employing them in sentence-formation and crafting a speech on a given topic. On analysing the data, it was seen that the number of distinctions increased by 15% in the classes where the study had been conducted. The feedback received from teacher-observers was also positive, attesting that the students were more engaged. Encouraged by this data, in 2017, we expanded the project to include both the Secondary Two Normal Academic and Technical classes, and the current Secondary Three Normal Technical class, as well as Literature students. We learned from the initial run that some students found the tasks a little too difficult, and in light of the expansion to both the lower secondary and lower-ability classes, we tweaked the tasks to make them even more engaging and organic. It is this journey and experience we would like to share.

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Going the Distance: A Lesson Study on the Derivation of the Distance Formula

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An An examination of the curriculum guides in Mathematics in the 12-year Philippine basic education system would show that there are a multitude of learning competencies that target the derivation of various mathematical formulas aside from the actual application of these formulas. These learning competencies, eighteen in all, are distributed across eight grade levels. The renewed emphasis on students' ability to derive formulas in the Enhanced K to 12 Basic Education Program has become a concern for Mathematics teachers of Dolores National High School (DNHS) in Eastern Samar, Philippines. The shared awareness regarding difficulties encountered both by teachers and their students in developing this type of competencies prompted eleven teachers towards improving instruction in deriving formulas in Mathematics. Using lesson study as an approach, the teachers decided to focus on one learning competency in the tenth grade, one which students are expected to derive the distance formula. With a poem-centered activity, the lesson study group agreed that activities that seek to activate students' multiple intelligences provide for students' opportunity to easily deal with problem-based strategy. However, there was emphasis on the teacher's ability to scaffold the responses of the students, that is, asking the right questions, in the right sequence, at the right time. Only by careful planning of the lesson and the teacher's understanding of its sequence will implementation be successful. Overall, the lesson formulated was assessed to have been successful in developing in students the ability to derive the distance formula and build their appreciation towards the use of the formula. As part of the recommendations, the lesson study group agreed that other learning competencies in the curriculum which impose the similar challenge of derivation must be explored in future lesson study sessions in order to contribute to the exploration of innovative instructional practices that center on learners' experiences.