Lesson Study – A Professional Development Activity for Teachers

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Lesson Study at Henry Ford Community College: Lesson Study was implemented in two phases. In Phase I (Winter 2010), four math faculty studied the lesson “Solving systems of linear equations in two variables”. A math educator from the University of Michigan-Dearborn was our “knowledgeable other” who observed the lesson taught and participated in the “reflect” process. The lesson was modified based on our observations and taught again in Spring 2010. This modified lesson gave us more opportunities to observe students learning.

In Phase II (Fall 2010), seven faculty from the College are studying the lesson “Solving quadratic equations by completing-the-square method.”

Participant Feedback

What do you like about Lesson Study?

“It is interesting to discuss a teaching topic in depth with a colleague. Provides a nice structure to the conversation about teaching.”

What impact has the Lesson Study project had on you?

“Encourage asking more meaningful questions rather than procedural. Encouraged discussion with colleagues.”

Would you recommend Lesson Study to a friend, and why?

“Our teaching and enjoyment of teaching improves when we engage in thoughtful reflection on how we present materials to our students.”

Lesson-Specific Errors Observed in Student Work

**Example 1:** What is the solution to the following system of equations?

\[
\begin{align*}
2x + y &= 3 \\
x - y &= -3
\end{align*}
\]

**Answer:** The student rewrote both equations in the slope-intercept form to graph and realized the lines are same and answered.

**Example 2a:** What do you notice about the systems of equations that have no solutions?

**Answer:** The two lines are parallel.

**Example 2b:** What do you notice about the systems of equations that have a unique solution?

**Answer:** The two lines are perpendicular.

**Example 3:** Solve the following equation using the square-root property:

\[
2x^2 + 1 = 4
\]

**Answer:** The two lines are perpendicular.

**Example 4:** Solve the following equation using the square-root property:

\[
(x - 2)^2 + 1 = 10
\]

**Teacher: Why are x=5 and x=-5 solutions?**

**Student:** When applying the square-root property the equation has both positive and negative numbers as solutions.

References


Catherine C. Lewis (2002), *Lesson Study: A Handbook of Teacher-Led Instructional Change*. Research for Better Schools Inc. (Lesson Study Cycle figure is developed based on a model from this textbook)

Acknowledgements

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