

**EDUC 4405/6639 Session 5**

**Optional Math Belief + Reflection Survey**

**Prior Knowledge/Preparing for Learning**

Questions borrowed from:

White, A.L., Way, J., Perry, B., & Southwell, B. (2005) Mathematical attitudes, beliefs, and achievement in primary pre-service mathematics teacher education. *Mathematics Teacher Education and Development* 7(33-52).

And

**Part 1:**

**Things I believe about myself doing math**

On a scale of 1 to 5, with 1 being “that’s not me!” and 5 being “that’s definitely me!”, rank how you feel about each statement:

- 1) Generally, I feel secure about the idea of teaching mathematics.
- 2) I find many mathematical problems interesting and challenging.
- 3) Mathematics makes me feel inadequate.
- 4) I’m not the type of person who could teach mathematics well.
- 5) I have always done well in mathematics classes.
- 6) I do not enjoy having to teach math.
- 7) I’m quite good at mathematics.
- 8) I have generally done better in math courses than other courses.
- 9) I have hesitated to take courses that involve math.
- 10) Of all the subjects, mathematics is the one I worry about most in teaching.

**Part 2:**

**Things I believe about math**

On a scale of 1 to 5, with 1 being “that’s not true about math!” and 5 being “that’s definitely true about math!” rank how you feel about each statement:

- 1) Mathematics is computation.
- 2) Mathematics problems given to students should be quickly solvable in a few steps.
- 3) Mathematics is a beautiful, creative and useful human endeavor that is both a way of knowing and a way of thinking.
- 4) Right answers are much more important in mathematics than the ways in which you get them.
- 5) Mathematics knowledge is the result of the learner interpreting and organizing the information gained from experiences.

- 6) Periods of uncertainty, conflict, confusion, surprise are a significant part of the mathematics learning process.
- 7) Young students are capable of much higher levels of mathematical thought than has been suggested traditionally.
- 8) Being able to memorize facts is critical in mathematical learning.
- 9) Teachers should provide instructional activities which result in problematic situations for learners.
- 10) Teachers should recognize that what seems like errors and confusion

### Part 3:

#### Mathematical Language I know

Identify (circle or highlight) the academic language of math in equations below.

Bonus: Without a calculator, solve the problems.

1. Write two different numbers that up to 19.  
Write another two numbers that up to 19.  
How many pairs of numbers are there?
2. Put the set of numbers in order from smallest to largest:  
4,680; 8,640; 6,480; 6,840; 4,860
3. Expand 4,609,234 using powers of 10.
4. Calculate  $47 \times 25$  (show all your work)  
Calculate  $47 \times 25$  using a different method than above (show all your work)
5. Divide 378 by 7 (show all of your work)
6. Find the cost of a \$1600.00 television it was reduce by %15.
7. Convert 17% to a decimal fraction.
8. Convert  $\frac{3}{5}$  to a percentage.
9. Calculate  $14.82 \times .06$
10. Find  $\frac{5}{8} - \frac{2}{5} = ?$

### Part 4:

#### Reflection

- 1) What types of thinking, expressions, and grammar are emphasized in math?
- 2) What role, do you think, math language plays in math understanding?
- 3) Where and when did you learn the language of math?
- 4) What kinds of thinking are most valuable for math learning?
- 5) If you were to audio record a math class you took OR a math class you currently teach, do you think you would hear teachers and students using math terms to explain their thinking? Would you hear a discussion of the answers by students or teachers or both? Would goal be to find a single process to get the answer or multiple processes? What language would convey that goal to students?
- 6) How is discussion-based learning interdisciplinary?