APPRAISING THE SKILLS FOR ELICITING STUDENT THINKING THAT PRESERVICE TEACHERS BRING TO TEACHER EDUCATION

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ORIENTING PROFESSIONAL PREPARATION TO WHAT PRESERVICE TEACHERS BRING

If we know more about the knowledge and skills that beginners bring to teacher preparation, then we could reconsider:

- The curriculum (things that need to be learned and “unlearned”)
- Settings for teacher learning and needed resources
- Recruitment

We could also better track on preservice teachers’ developing skill
CONSIDERING ONE TEACHING PRACTICE: ELICITING STUDENT THINKING

To find out what students know or understand, and how they are thinking/reasoning, a teacher must:

- Establish an environment in which a student is comfortable sharing his/her thinking
- Pose questions to get students to talk
- Listen to and hearing what students say
- Probe students’ responses
- Develop ideas about what a student thinks
- Check one’s interpretation
FOCUSING ON ELICITING FROM THE BEGINNING OF TEACHER EDUCATION

Early attention to eliciting and interpreting student thinking is crucial, because:

- People are likely to develop ways of doing this in everyday life
- Caring about what students think is foundational to teaching
- It is foundational to many other teaching practices
USING STANDARDIZED SIMULATIONS TO ASSESS ELICITING

Simulations are approximations of practice that can be used for both assessing and supporting ongoing learning.

Simulations:
- place authentic, practice-based demands on a participant
- purposefully suspend or standardize some elements of the practice-based situation
- are commonly used in many professional fields
- can provide insights that are not possible or practical to determine in real-life professional contexts
SETTING THE STAGE FOR ELICITING

The preservice teacher:

1. Prepares for an interaction with a standardized student about one piece of student work

Your goal is to elicit and probe to find out what the “student” did to produce the answer as well as the way in which the student understands the steps that were performed.

Correct answer, alternative algorithm, degree of understanding is unclear
HOW IS EVIDENCE OF ELICITING SKILLS OBTAINED?

The preservice teacher:
1. Prepares for an interaction with a standardized student about one piece of student work
2. Interacts with the student to probe the standardized student’s thinking

A Standardized Student
Developed response guidelines focused on:

- What the student is thinking such as
  - Uses an alternative algorithm (column addition), except the student is working from left to right
  - Applies the method correctly and has conceptual understanding of the procedure

- General orientations towards responses such as
  - Talk about digits in columns in terms of the place value of the column (e.g., 23 ones)
  - Give the least amount of information that is still responsive to the question

- Responses to anticipated questions
ELICITING A STUDENT’S THINKING
INITIAL SKILL IN ELICITING STUDENT THINKING

Context:
- Simulation assessment (47 preservice teachers)
- Data collected during the first week of the teacher education program

Analyzing the prevalence of eliciting moves:
- Eliciting components of the student’s process
- Probing the student’s understanding of the process
- Attending to the student’s ideas
- Deploying other moves that support learning about student thinking
PREVALENCE OF MOVES:
ELICITING PROCESS

Eliciting where the 6 comes from (89%)
Eliciting the sequence of the process (87%)
Eliciting description of the combining (85%)
Eliciting where the 23 comes from (79%)
PREVALENCE OF MOVES: ELICITING UNDERSTANDING

0% (no preservice teachers)

50%  

100% (all preservice teachers)

- Probes why combining is necessary (68%)
- Probes the value of 623 (36%)
- Probes the equivalence of ‘23’ and 2 tens and 3 ones (17%)
PREVALENCE OF ELICITING: DEPLOYING OTHER MOVES

0% (no preservice teachers)

50%

100% (all preservice teachers)

- Encouraging writing (25%)
- Posing a follow-up problem (15%)
- Positioning the paper so that the student can see and participate (100%)
- Facing the student when asking a question (100%)
- Refraining from asking the student to use a different process (85%)
- Refraining from filling in the student’s process or understanding (62%)
WHAT CAN BE LEARNED FROM THE SKILLS THAT NOVICES BRING?

1. Moves that require new learning ➔ Novices have much to learn about eliciting student thinking (e.g., asking the student to write, posing a follow up problem, and probing the student’s understanding)

2. Moves that can be built upon ➔ Novices bring relevant skills to teacher education which can be leveraged and built upon (e.g., facing student, asking process questions)

3. Moves that require unlearning ➔ Some of the skills brought to teacher preparation by novices may undermine to the work that teachers need to do (e.g., filling in student thinking or asking the student to use a different process)
CONCLUSIONS

- When teacher education is focused on the practice of teaching:
  - We need information about the skills with teaching practices that novices bring to teacher education
  - Such information can inform the design of teacher education
- Specific findings cannot be generalized beyond this particular group (i.e., a group of preservice teachers with differing prior experiences might bring different skills)
- Categories may be generalizable to other contexts and other teaching practices