

THE TEACHING SKILLS THAT NOVICES BRING TO TEACHER EDUCATION: THE CASE OF ELICITING STUDENT THINKING

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ORIENTING PROFESSIONAL PREPARATION TO OUR STUDENTS

- Teaching should be oriented to the prior knowledge and skills of learners, at any level or any context
- This is just as true of teacher education
- Knowing what teacher candidates already believe and what they are already inclined to do can help make professional education more effective

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
- Learning and attending to what young people think is foundational to teaching
- Many other teaching practices rely on being able to elicit and interpret learners' thinking

USING STANDARDIZED SIMULATIONS TO ASSESS ELICITING

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

Simulations:

- Engage participants in authentic demands of practice
- Strategically hold still some elements of the practice-based situation
- Are common in many professional fields
- Can provide information that is difficult to access in the context of classroom practice

SETTING THE STAGE FOR ELICITING

$$\begin{array}{r} 29 \\ 36 \\ + 18 \\ \hline 623 \\ \textcircled{83} \end{array}$$

The teacher candidate:

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

$$\begin{array}{r} 29 \\ 36 \\ + 18 \\ \hline 623 \\ \textcircled{83} \end{array}$$

Final answer 83

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

$$\begin{array}{r} 29 \\ 36 \\ + 18 \\ \hline 623 \\ \textcircled{83} \end{array}$$

Final answer 83

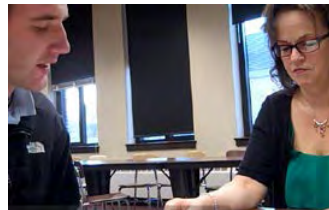
Correct answer, alternative algorithm, degree of understanding is unclear

HOW IS EVIDENCE OF ELICITING SKILLS OBTAINED?

$$\begin{array}{r} 29 \\ 36 \\ + 18 \\ \hline 623 \\ \textcircled{83} \end{array}$$

The teacher candidate:

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**



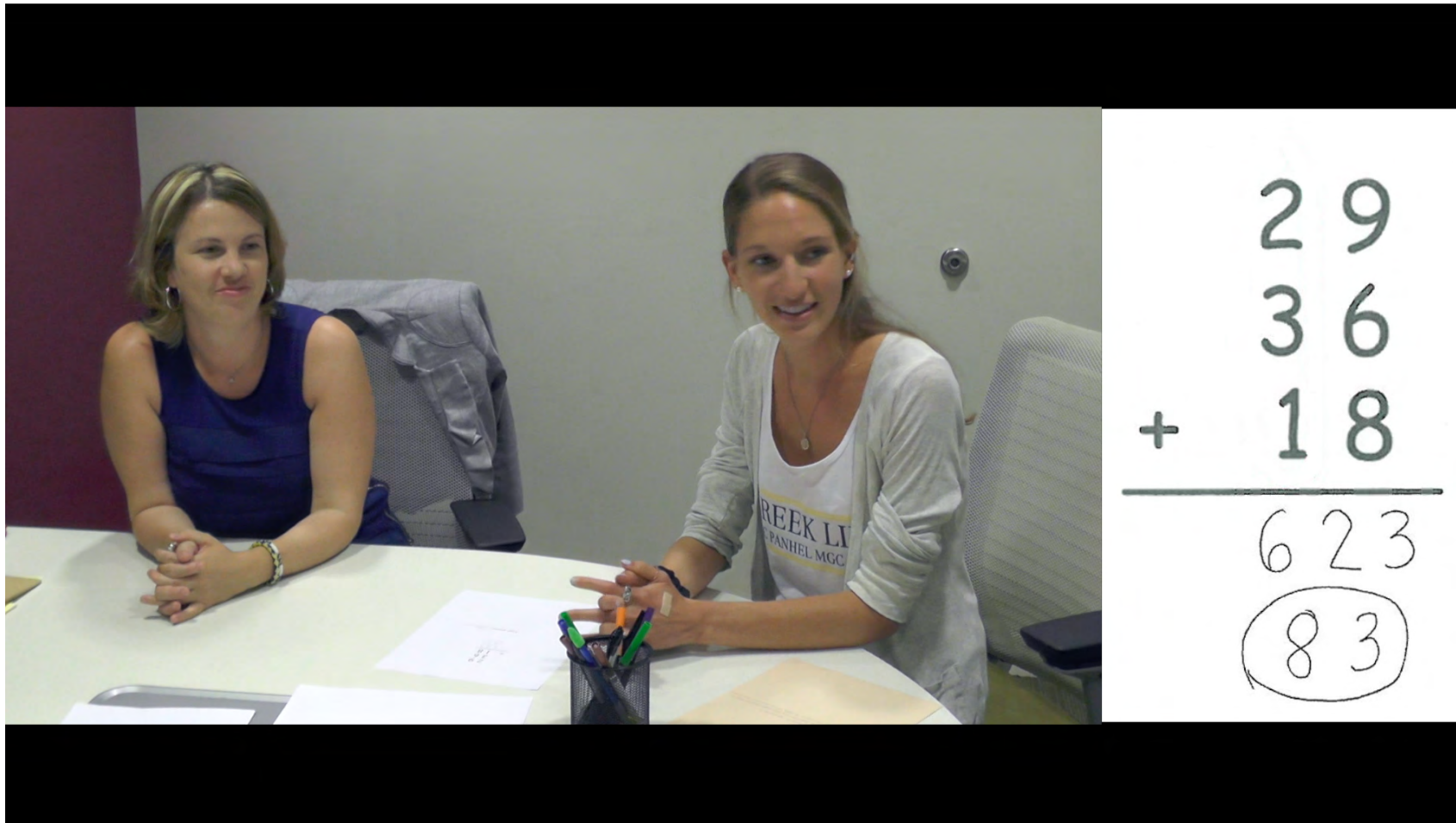
A Standardized Student

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

$$\begin{array}{r} 29 \\ 36 \\ + 18 \\ \hline 623 \\ \textcircled{83} \end{array}$$



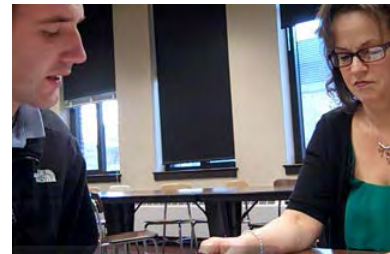
INITIAL SKILL IN ELICITING STUDENT THINKING

Context:

- Simulation assessment (47 teacher candidates)
- Data collected during the first week of the teacher education program

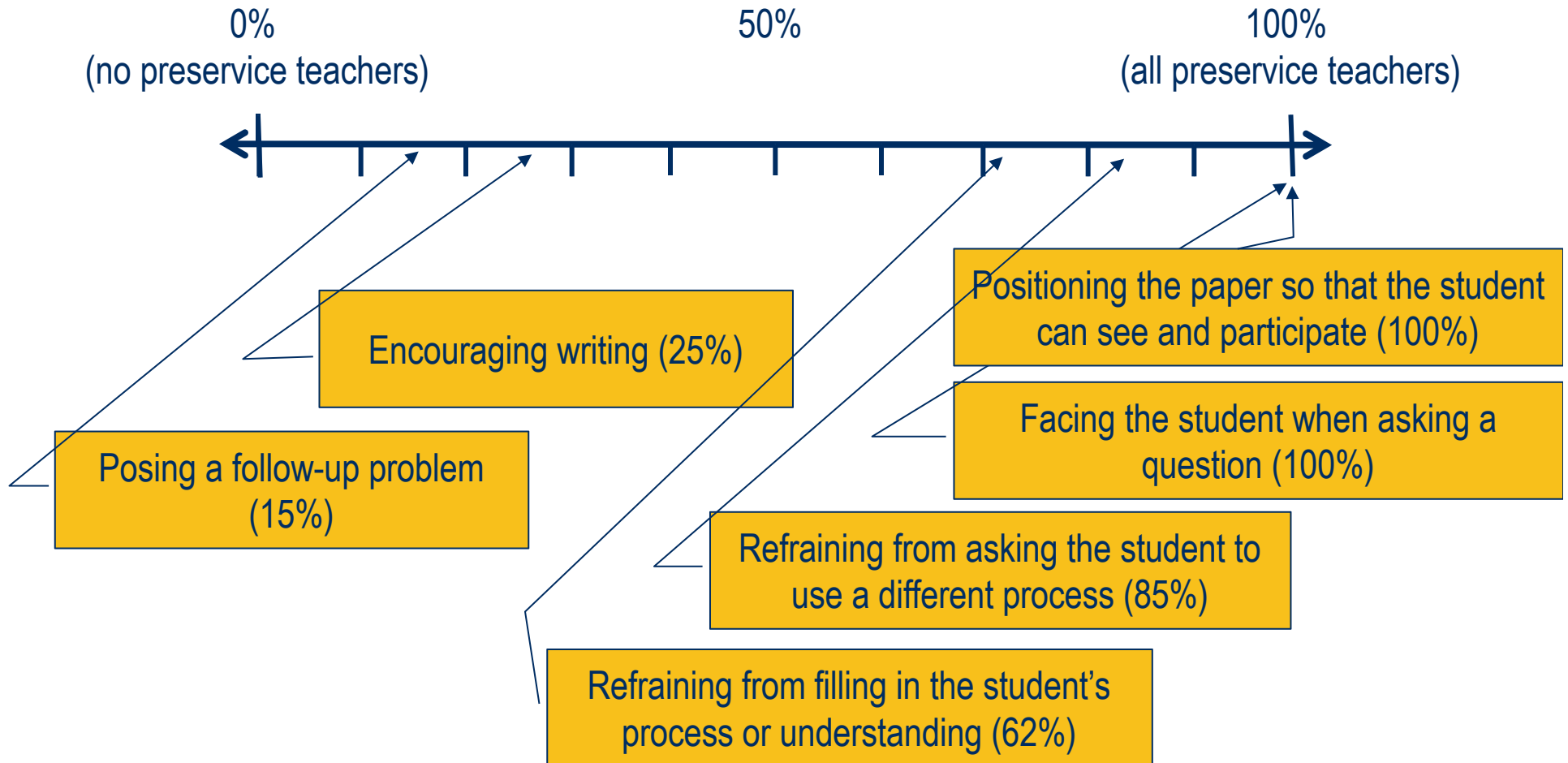
Analyzing the prevalence of eliciting moves:

- 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 ELICITING: DEPLOYING OTHER MOVES

$$\begin{array}{r} 29 \\ 36 \\ + 18 \\ \hline 623 \\ \textcircled{83} \end{array}$$



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)

QUESTIONS FOR FUTURE RESEARCH

- Is the empirical data is generalizable to other populations of teacher candidates? In what ways?
- Do the three categories generalize across different teaching practices and subject matters? If so, what are the implications for teacher education?
- What sense did the teacher candidates make of the student thinking that they elicited?