Student Interviews for Pre-Service Teachers
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LSEE Program

The Liberal Studies for Early and Elementary Education BIS degree in the College of Humanities and Sciences is designed in conjunction with the Master in Teaching in the School of Education as a 5.5 year, dual degree program.

*Within the BIS degree requirements, two mathematics courses require classroom interviews.*
Mathematics Requirements

**Undergraduate Courses**

MATH 131/141 - Core

Math 361 - Numbers & Operations

Math 362 - Algebra & Functions

Math 303 - Investigations in Geometry

Stat 206 - Data Analysis & Statistics for Elementary Ed. - Department of Statistics

**Graduate Course**

TEDU 522- Mathematics Methods - School of Education
Upon completion of the LSEE program, students will have acquired:

- Proficiency in **quantitative literacy**.
- Proficiency in **written and oral communication**.
- Proficiency in **experiential learning**.
- Proficiency in **dispositions**.
- Proficiency in **reflection**.
Student Interviews & Mathematical Teaching Practices

- Establish mathematics goals to focus learning
- **Implement tasks that promote reasoning and problem solving**
- Use and connect mathematical representations
- **Facilitate meaningful mathematical discourse**
- Pose **purposeful questions**
- Build procedural fluency from conceptual understanding
- **Support productive struggle in learning mathematics**

Principles to Actions, NCTM, 2014
Interview Logistics

Clinical Faculty

Student Sign-ups

Tasks - Problem Sets

Planning/Classroom Discussion
Clinical Faculty

Who are VCU Clinical Faculty?
Clinical Faculty are exemplary preK-12 practitioners identified through a rigorous competitive selection process to work with VCU pre-service teachers.

Why is the VCU Clinical Faculty Program unique?
- Open to all teachers
- Comprehensive application process
- Required intensive training
- Rigorous evaluation process
- Opportunities to grow as teacher leaders
## Visit Sign-ups

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<tr>
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<tbody>
<tr>
<td>Shawn King</td>
<td>George</td>
<td>2nd</td>
<td></td>
<td><a href="mailto:Shawn-King@school.edu">Shawn-King@school.edu</a></td>
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<tr>
<td>1</td>
<td>Susan Mitchell</td>
<td>George</td>
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<td><a href="mailto:Mitchell@vcu.edu">Mitchell@vcu.edu</a></td>
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<td>Anthony</td>
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<td>George</td>
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<tr>
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<td>Emily King</td>
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Problem Set Sample Questions

Course instructors develop two sets of problems each semester.

Examples:

First Grade
How many different ways can you arrange 12 cookies into equal stacks?

Second Grade
How many different ways can you arrange 24 cookies into equal stacks?
Planning

Each student completes a planning sheet that is handed in prior to the visit. Necessary corrections are made and the final sheet is signed by the clinical faculty member on the day of the visit.

**Introduction:** Explain how you will initiate the mathematical conversation with the student(s)? Do not just restate the problem.

**Differentiation:** How could each problem be adjusted in the activity to make it more/less challenging for students?

**Effective Questions:** What questions, from the list of Effective Questions could be used to extend the mathematical conversation?
Obstacles

Clinical Faculty

Scheduling

Problem Sets
Student Interviews
Math 361

Visit #1 - Group Conversation
Math 361

Visit #2 - Reflection Paper Questions

Explain how the student solved the problem.

Did they correctly answer the problem? Explain. If not, what did they do incorrectly? Explain.

What did you learn about students and yourself from completing this assignment?
Math 361 Paper Reflections

“Just because we (teachers) think one way, does not mean that the student thinks that way as well.”

“I learned a lot from them. Most of the time they were teaching me something new!”

“In class we always talk about “this student did the problem this way while the other did the problem that way.” It gets confusing when it is always hypothetical or videos. But once you watch them in person writing it out it is amazing how their minds work!”
Math 361 Paper Reflections

“This really showed me how **challenging** it can be to keep one student engaged in the learning while the other students are struggling.”

“I also realized the **importance of differentiated instruction** because even in my small group the differences in understanding was huge!”

“It was disheartening seeing **some of the students who didn’t get the answer correct**, underestimate themselves. I tried to **motivate** them and **encourage** the other students in the group to do the same.”
Math 362

Visit #1 - Reflection Paper Questions

Using your student work sample, explain how the student solved the problem?

Did the student correctly answer the question? If the student did, what did the student do to get it correct? And if not, what did the student do incorrectly?

What is the take away message for you about students’ thinking when solving these types of math problems?
Using your student work sample, explain how the student solved the problem?

A girl in my first grade class named Noel solved a problem from the Drawings and Diagrams activity that stated, “Lilly has two crayons and Tia has six crayons. How many more does Tia have?” using the manipulatives I provided, as well as her drawings. Noel drew two crayons and wrote an “L” next to them and then drew six crayons and wrote a “T” next to them.

Did the student correctly answer the question? If the student did, what did the student do to get it correct? And if not, what did the student do incorrectly?

Yes, Noel correctly answered the question. She knew that it was a subtraction problem because it contained the words “how many more” so she subtracted Lilly’s two crayons from Tia’s four crayons to get the difference between the two, which is four crayons.
What is the take away message for you about students’ thinking when solving these types of problems?

The takeaway message about students’ thinking when solving these types of problems is that it is especially helpful for students to have manipulatives (tangible items to play around with), to encourage students to draw pictures or diagrams, or both! I also think it is beneficial for students to look for clues within the word problem, such as “how many more,” which helps them figure out whether it is an addition or subtraction problem. Providing and encouraging the use of visuals is an important method for teaching math because it allows students to more easily understand how to solve the problem.
Rams Project - Audio Recording/Partner Discussion

a. A brief synopsis of how each student solved the problem. Did the student correctly answer the question? If the student did, what did the student do to get it correct? If not, what did the student do incorrectly?
b. Address how the two students’ mathematical work is the same and/or different.

Reflection

Write a short paragraph that addresses what you learned during the visits about working with children to get to their thinking. How will the ideas you learned translate into your future role as a teacher? Post the paragraph on your Rampages post that will include the audio recording.
RamPages Discussion
RamPages Reflection

First, I have realized that I need to put aside any preconceived notions about how students think. While working with the students, there were times that they would do something and I would assume that it was because they understood something, or conversely, that they did not understand something because of what they did or did not write down. However, after talking to the students about their work, I often discovered that they did understand the concepts, but they looked at it in a completely different way than I would have. This led me to understand that in order to determine what my students understand, I need for them to tell me what they are doing.
The Good & The Bad

- **Good**
  - Discourse
  - Posing Questions
  - Multiple representations

- **Bad**
  - Mathematical Content Knowledge
Pre-Service Teacher Reflections

“I wish we did the visits more than twice each semester. The visits are a chance for me to see how students think about math. The students don’t know how to solve all of the problems that we take to the classrooms, but we get to see ideas we have talked about in class.”
First Year Teacher Reflections

“My going into the classroom in my early math education classes taught me so much. I learned students know so much more than we give them credit. If given a chance they can invent techniques to solve problems that I would never have thought of myself. “

“Those visits influenced the way I learned from my other education classes and I still use what I learned. I do not teach tricks, because students lose their own critical thinking skills when they do not get to reason out a problem. They then only have a surface knowledge and not a deep understanding of the content. I think this is important for education students to see early on because it will shape the way they approach their pedagogy.”
Clinical Faculty Thoughts

Professionally and personally, it is valuable for me to have teachers in the classroom for many reasons.

First, it is a wonderful experience to allow the teachers to work in the classroom with my students. It gives them an opportunity to observe in the classroom, get ideas, and gain a true understanding of real experience working with students. After the lessons, they all understand the success and challenge that comes with working with students of varied skill levels without knowing the student’s prior knowledge of the concepts.

Second, my students LOVE having the teachers in to teach and enjoy working with others in the small groups! On these days, my students are energized and excited about the lessons which leads to a positive learning environment.
Clinical Faculty Thoughts

*Third, this experience is professionally rewarding to me as an educator.* All of the teachers are given the same lesson and it always amazes me how differently they each approach teaching. Some of the teachers use hands on experiences or manipulatives while others simply state the questions or activities and use pencil and paper. Some teachers offer extensions to the students who meet their expectations easily off the top of their heads and others stick to the lesson plans. It is extremely interesting to observe the approach and watch how different students respond to the different approaches of the teachers. *I often take away ideas that I can use with my students in future lessons.*

*Last, it is FUN for all involved!* I enjoy it and look forward to the contact each year about having the teachers in the classroom!
Strength of the Interviews

Connects to classroom content

Reflection on current mathematical ability and future teaching

Reinforces mathematical teaching practices (questioning, discourse, and mathematical tasks)

Visit an assortment of classrooms (good & bad)
Areas of Improvement

- **Logistics** - Is there an easier way to connect pre-service teachers with a real classroom?

- **Mathematical Content Knowledge** of our students - How can we strengthen the mathematical understandings of our students even more?

- Other thoughts?
Contact Information