LEARNING ABOUT LEARNING THROUGH RESEARCH

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Study Purpose

- Explore undergraduate students’ experiences of learning research through a S-UR program and the meaning students attribute to such experiences – student voice.
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- Explore undergraduate students’ experiences of learning research through a S-UR program and the meaning students attribute to such experiences – student voice.

- Identify various contexts within a S-UR program that students perceive as meaningful for learning of research.
Research Questions

How do students experience the learning of research during a (S-UR) program?

Conceptions of research

How research unfolds

Views of themselves as researchers

Contexts for learning research
Conceptual Framework

Learning as experiential  Learning as situated

Four dimensions of learning

Learning as social  Learning as a source of identity
Research Design

Qualitative design
- Hypothesis generating approach

Study Site
- Research University, Very Heavy Research Activity in NE U.S.

Data Collection
- Interviews
- Observations
- Document analysis
### Study Sample by Data Source

#### Demographics

<table>
<thead>
<tr>
<th>Major</th>
<th>Gender</th>
<th>Race</th>
<th>Level of study</th>
<th>Home institutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>55.5% Social sciences/Humanities 44.5% Natural sciences</td>
<td>55.5% Women 44.5% Men</td>
<td>55.5% African American 45.5% Latino</td>
<td>77% Juniors 22% Sophomores</td>
<td>66% Public research 22% public 4 year 11% private 4 year</td>
</tr>
</tbody>
</table>
## Study Sample by Data Source

<table>
<thead>
<tr>
<th>Study</th>
<th>Participants</th>
<th>Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary study participants</strong></td>
<td>9 students (response rate 82%)</td>
<td>Baseline and exit interviews, observations, document analysis.</td>
</tr>
<tr>
<td><strong>Focal Study Participants</strong></td>
<td>4 students selected among primary study participants.</td>
<td>Baseline, 2 post-observation, exit and follow-up interviews; 26 observations throughout the S-UR program, and document analysis</td>
</tr>
<tr>
<td><strong>Secondary Study Participants</strong></td>
<td>5 S-UR program staff (2 focal study participants’ research sponsors, 2 S-UR program graduate student mentors and S-UR program administrative assistant)</td>
<td>One end of program interview</td>
</tr>
</tbody>
</table>
Data Analysis

- Emergent themes
- Reliability checking
- Evidence-based claims
- Analytical questions
- Discrepant Data analysis
- Coding
Study Findings – Data Claim 1

Analytic questions:

What changes, if any in her/his view of learning does this study participant attribute to her/his S-UR program participation?

What does this study participant refer to learning about herself/himself as a learner through her/his S-UR program participation?
Study Findings – Data Claim 1

**Analytic question 1:** What changes, if any in her/his view of learning does this study participant attribute to her/his S-UR program participation?

*Study participants come to the S-UR program with an understanding of learning and of themselves as learners, specifically in regard to what encourages and challenges them in their subject-matter learning. They refer to the S-UR program experience as expanding the understandings of learning they developed through prior experience.*
Analytic question 1: What changes, if any in her/his view of learning does this study participant attribute to her/his S-UR program participation?

Study participants come to the S-UR program with an understanding of learning and of themselves as learners, specifically in regard to what encourages and challenges them in their subject-matter learning. They refer to the S-UR program experience as expanding the understandings of learning they developed through prior experience. They point to gaining: a) an increased awareness of and confidence in their abilities to enact learning and b) a different view on the nature of knowledge. These insights differ by study participants’ academic discipline: humanities and social sciences participants refer to gaining a deeper awareness of their abilities to enact learning, while natural sciences participants refer to acknowledging that there are limits to the knowledge acquired through learning.
Study Findings – Data Claim 1

Analytic question 2: What does this study participant refer to learning about herself/himself as a learner through her/his S-UR program participation?

Result Study participants gain an increased awareness of and confidence in their abilities to enact learning
“But she always asked me, and eventually I developed a system where I was able to do it effectively in my head, but that’s because I thought of—I started thinking how, thinking about how I think, and thinking of little shortcuts that I knew would be easy for me to do, you know, and that’s where I really, really started to get better at it, because the way that she went about it and did it, and the way that she processed numbers was different than the way I processed numbers, and I was able to identify that and I was able to pinpoint how I would be able to process it and, and keep it, you know, and retain it, you know what I mean?” ....
Study Findings – Data Claim 1

Result: Study participants gain a different view on the nature of knowledge.
Study Findings – Data Claim 1

**Result:** Study participants gain a different view on the nature of knowledge.

“Other people. I feel like we never learn alone. I find that impossible. Even if you’re reading, you’re learning from another person, or just, like, talking. Talking. Communication, I guess….Interactions, like, not just with people but, like, with things. I mean, like, with the world, because you could see something happen and that might teach you something….\"
Conclusions

- As undergraduates engage in and learn research, they can learn about learning and about themselves as learners.

- What students learned about learning and about themselves as learners through their S-UR program participation differed by academic discipline.

- Prior UR experience, academic discipline and S-UR project matter for what students can learn about research and themselves as learners.