Research Learning Experiences (RLEs)

University of Maine System Student Success & Retention initiative

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Research Learning Experiences Context

- Student Success & Retention - Outcomes & Initiatives
  - RLE Definition & Examples
    - Growth and Scale
  - RLE Logic Model & Assessment
Student Success & Retention Outcomes and Initiatives

Research Learning Experiences
Extended “bridge week” new student orientation, research-based courses using high-impact practices

Gateways to Success
Undergraduate learning assistants / active learning strategies in high DFWL courses

First Destination
System-wide collection of employment and graduate school outcomes

Pathways to Careers
System-wide and industry partner collaboration to expand paid undergraduate internships
What makes an RLE?

• Summer “bridge week”
• First-semester experience
• Course-based research for credit
• Small class size (<24)
• Pedagogy focused on discovery, knowledge creation, experiential learning, active learning
## Growth and Scale of RLE

<table>
<thead>
<tr>
<th>University of Maine System</th>
<th>2021-22 (Y1)</th>
<th>2022-23 (Y2)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>University of Maine</td>
<td>241 (39)</td>
<td>42 (355)</td>
<td>594 (84)</td>
</tr>
<tr>
<td>University of Southern Maine</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>University of Maine at Augusta</td>
<td>17 (1)</td>
<td></td>
<td>17 (1)</td>
</tr>
<tr>
<td>University of Maine at Farmington</td>
<td>148 (12)</td>
<td></td>
<td>148 (12)</td>
</tr>
<tr>
<td>University of Maine at Fort Kent</td>
<td>28 (4)</td>
<td></td>
<td>28 (4)</td>
</tr>
<tr>
<td>University of Maine at Machias</td>
<td>6 (1)</td>
<td></td>
<td>6 (1)</td>
</tr>
<tr>
<td>University of Maine at Presque Isle</td>
<td>9 (5)</td>
<td></td>
<td>9 (5)</td>
</tr>
</tbody>
</table>

**Total Unique Students (RLE courses):**

- University of Maine System: 802 (104)
Logic Model

**Inputs**
- Harold Alfond Foundation Grant Money
- Faculty time and expertise
- Student participation
- Administrative processes - communication - promotion - training and support

**Activities**
- RLE course development
- RLE course delivery (26 sections)
- Summer Bridge Week

**Outputs**
- Courses reflect the program-established cognitive and dispositional outcomes.
- Faculty use high-impact instructional practices in courses.
- Different types of research/discovery courses are offered by faculty.
- A diverse body of students will participate in RLE courses and Summer Bridge Week

**Short-term Outcomes**
- Participants' cognitive abilities in terms of the research/discovery process are expanded.
- Participants' personal dispositions are enhanced.
- Participants persist in college in their first and second years.
- Participants are empowered to engage with the university.

**Long-term Outcomes**
- Overall retention and graduation rates increase in the University of Maine.
- Participants gain meaningful employment after college.
- Participants have increased confidence in career-ready skills
- Increased internship OR independent research participation

**Goal**
To equip students to have meaningful lives and careers.
### Implementation of Assessment

<table>
<thead>
<tr>
<th>Assessment Activity</th>
<th>Timing</th>
<th>Time needed</th>
<th>Tech System</th>
<th>RLE sections</th>
<th>non-RLE control group</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Faculty alignment survey</strong>&lt;br&gt;Provide information on alignment of course and assignments with the learning outcomes</td>
<td>First 1-2 weeks</td>
<td>As needed</td>
<td>Qualtrics</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td><strong>Student pre-course survey</strong>&lt;br&gt;Scales on sense of belonging, academic self-efficacy, research self-efficacy, etc…</td>
<td>First 1-2 weeks</td>
<td>15 minutes</td>
<td>Qualtrics</td>
<td>✔ ✔</td>
<td></td>
</tr>
<tr>
<td><strong>Faculty survey</strong>&lt;br&gt;High-impact practices and instructional approaches employed, feedback on implementation, likelihood to teach an RLE again, etc…</td>
<td>After midterms</td>
<td>15 minutes</td>
<td>Qualtrics</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td><strong>Student post-course survey</strong>&lt;br&gt;Scales on sense of belonging, academic self-efficacy, research self-efficacy, etc, experiential learning and project ownership…</td>
<td>Last 1-2 weeks</td>
<td>15 minutes</td>
<td>Qualtrics</td>
<td>✔ ✔</td>
<td></td>
</tr>
<tr>
<td><strong>Rubric Assessment</strong>&lt;br&gt;Faculty assess students on at least one cognitive learning outcomes</td>
<td>Last week / finals</td>
<td>As needed</td>
<td>Brightspace</td>
<td>✔</td>
<td></td>
</tr>
</tbody>
</table>
Results & Findings

- Outcomes from Pilot Years 1 and 2
  - Student Surveys
  - Student Interviews
  - Future Analyses
Pilot Year Outcomes: Fall 2021

- RLE students’ post scores differed significantly from their pre scores on the following survey constructs:
  - Collaboration
  - Confidence in Research Tasks

- Similar, and significant drop from pre-post in Morale for both RLE and non-RLE students.

- No statistically significant differences were found between RLE and non-RLE students when controlling for demographic characteristics.
Student-Reported RLE Benefits

RLE students report feeling supported or strongly supported by their classmates more frequently (RLE=68%) than their peers who did not take an RLE (non-RLE=45%).

- **I did not find it beneficial at all**: 7%
- **Learning to think outside of the box**: 31%
- **Learning research skills**: 35%
- **Helped me explore a field/discipline**: 35%
- **Having a support system with a faculty...**: 40%
- **Having a support system with peers**: 41%
- **Acclimating to campus during Bridge week**: 50%
- **Making friends during Bridge Week**: 50%

*Support/belonging reasons are most common*
Survey Outcomes & Retention (Pilot Cohort)

● First year retention is not statistically different between RLE (75.9% retained) and non-RLE (72.7%) [controlling for demographics], though RLE is slightly higher.

● For all students (RLE and non-RLE), Sense of Belonging to UMaine post-scores are positively related to first-year retention [controlling for demographics].
Student Interviews - Pilot Cohort

- Themes [positive, sense of belonging]
  - Support system (8 students)
  - Learning about university resources (5)
  - Acclimating to campus early (3)

“I thought it was really cool that I got to be here a week early, and I didn't have to move in with everybody else because that would've caused, you know, panic and anxiety”

“I would say closest friends, almost all of them are from the RLE except for like a few...”

“I have a goal in mind... and the RLE showed me okay, you have these tools...”
Preliminary Outcomes: Fall 2022 at UMaine

- **Sense of Belonging to UMaine:**
  - RLE students scored significantly higher on the post survey as compared to non-RLE students [controlling for pre-score, sex, HS GPA, First-gen, Pell, and course].
● **Reflection:**
  ○ RLE students scored significantly higher on the post survey as compared to non-RLE students [controlling for pre-score, sex, HS GPA, First-gen, Pell, and course].

● Faculty reported using reflection in RLEs more often than in other courses:
  ○ Student reflection on effective college/study strategies (81% of faculty used in RLE; only 26% used in other classes)
  ○ Student reflection on research/exploration process (97% vs. 45%)
Interviews - Fall 2022 Cohort

- Currently conducting interviews focused on *how* and *why* RLEs impact sense of belonging.
- Sample: Students who increased on belonging from pre-post, and others who decreased.
Future Directions: Analyses

- Are RLEs particularly beneficial for marginalized or underrepresented groups of students (e.g., first-generation students)?
- Which RLE course strategies are most effective at increasing student outcomes (e.g., field work, reflection)?
- Considering how to account for experiential learning that students get OUTSIDE of RLEs.
- Evaluating program impact with controls for opt-in effects
Future Directions

- Addressing RLE participation, RLE participants are disproportionately lower retention risk
- Refining the RLEs based on assessment
- Growing initiative at smaller, rural campuses
Thank you!
Questions?

Acknowledgements:
Alfond Foundation