WHAT DO STUDENTS LEARN FROM PARTICIPATION IN AN UNDERGRADUATE RESEARCH JOURNAL? RESULTS OF AN ASSESSMENT

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Outline

- Background of the project (JPUR)
- Method for developing assessment
- Highlights of assessment results
- Recommendations

Effective * Sustainable * Practical
Background:

*Journal of Purdue Undergraduate Research*

- Established in 2011, faculty-initiated, Libraries/Press
- 2,000 Purdue undergrad research projects annually
- Writing, publishing study results integral part of research process, but need for opportunities
- In disciplinary journal, many authors, student contribution not discernible
Background

• Collaboration:
  • Provost, University Press and Libraries, Faculty Advisory Board, Department of English, Purdue Marketing and Media, faculty mentors, grad and undergrad students

• Provost funded 3 years

• Required strong assessment plan to assess the contribution of the journal to student success
Method

*Purpose statement was basis for assessment*

Assessment strategy:

1. What do you want to achieve with the program/intervention/activity?

2. How do you measure whether you achieved it?
Method: Purpose of JPUR

- Student authors will benefit from experiencing the scholarly publishing process from submission, through review and development, to formal publication.

- Learn scientific writing, publication ethics.

- Develop information literacy knowledge.

- Articles will be evidence of achievement, valuable for careers.
Methods: Purpose of JPUR

- **Faculty** will be motivated to act as **mentors**

- **Student editors** will learn publishing process from behind the scenes, better preparing them to be future academic authors

- Benefit **administrators** for recruiting and retention, K-12 outreach, fundraising

- **Reach global audience** strengthening Purdue’s ability to attract outstanding international students
Methods: Identify Stakeholder Groups

<table>
<thead>
<tr>
<th>Stakeholder Group</th>
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</thead>
<tbody>
<tr>
<td>Student authors of articles</td>
</tr>
<tr>
<td>Student Editorial Board</td>
</tr>
<tr>
<td>Faculty Advisory Board</td>
</tr>
<tr>
<td>Faculty mentors of student authors</td>
</tr>
<tr>
<td>Students attended JPUR workshops</td>
</tr>
<tr>
<td>Students non-accepted abstracts</td>
</tr>
<tr>
<td>Faculty mentors of students non-accepted</td>
</tr>
<tr>
<td>University administrators</td>
</tr>
<tr>
<td>Global audience</td>
</tr>
</tbody>
</table>
Methods

• Questionnaires

• Workshop evaluations

• Web metrics
  • Google Analytics
  • Purdue e-Pubs institutional repository downloads
Methods:
Questionnaire Dimensions

Self and mentor perceptions of learning
Helpfulness of resources
Influence on career decisions
Do it again?
Methods: Questionnaires

Self and mentor perceptions of learning gains:

BEFORE I WROTE AN ARTICLE for JPUR/AS A RESULT OF WRITING AN ARTICLE for JPUR, I would rate my understanding of each of the following skills as:

BEFORE I MENTORED A STUDENT in preparing an article for JPUR/AS A RESULT OF MENTORING A STUDENT to prepare an article for JPUR, I would rate my understanding of each of the following skills as:

Do you believe that THE STUDENT AUTHOR(s) with whom you worked gained a better understanding of the following areas as a result of writing an article for JPUR?

[Options include: __None __Very little __Some __Sufficient]
Methods: Questionnaires

- How to write for professional publication
- How to write about research for an informed public audience
- The process for publishing an article
- How scholarly publication contributes to the research community
- How to identify and paraphrase the main ideas from an article or book
- How to synthesize information from multiple sources
- How to use evidence to draw conclusions
- How to support my points with evidence
- How to evaluate the credibility of authors of articles/books/reports
- When to cite other authors in a paper
- How to use a citation manager (such as Zotero, EndNote, or Reference Manager) to record and format citations for bibliographies
- How to use a publication style manual to format papers or bibliographies
- How to construct spreadsheets, charts, or graphs to display information
- How to work collaboratively
Methods: Questionnaires

How helpful were the following resources in helping you learn to write your article?

[Options include:

__ Didn’t use
__ Used but not helpful
__ Used and somewhat helpful
__ Used and was very helpful]
Methods: Questionnaires

__Faculty Mentor
__Student Editorial Board
__Workshop: ‘Abstracts to Articles: Preparing Your Article for JPUR—Part 1’ ([workshop date])
__Workshop: ‘Abstracts to Articles: Preparing Your Article for JPUR—Part 2’ ([workshop date])
__JPUR Website
__Purdue’s Online Writing Lab (OWL)
Methods: Questionnaires

Please indicate how the process of writing an article for JPUR influenced decisions about your career.

__As a result of writing an article for JPUR, I decided to pursue a career in research in my field of study.
__As a result of writing an article for JPUR, I decided to pursue a career in research in a different field of study.
__As a result of writing an article for JPUR, I decided not to pursue a career in research.
__Writing an article for JPUR did not influence my career decisions.
What techniques did you learn about finding articles and other sources for your literature review by writing an article for JPUR? (Check all that apply)

___ I learned about databases of citations to articles about my subject (examples given)
___ I learned how to retrieve the full text of journal articles
___ I learned to set Google Scholar preferences to search for articles available through Purdue Libraries
___ I learned how to broaden or narrow my search topic
___ I learned about the Libraries’ Interlibrary Loan service
Methods: Questionnaires

In what ways has the experience of serving as an editorial board member influenced you? (Check all that apply)

__I have learned that I enjoy teaching.
__I have learned that I do not enjoy teaching.
__I have learned that I enjoy editorial work.
__I have learned that I do not enjoy editorial work.
__I have learned that I enjoy scholarly writing.
__I have learned that I do not enjoy scholarly writing.

Would you mentor a student who wanted to publish an article in JPUR again?
## Results:
### Response Rates

<table>
<thead>
<tr>
<th>Stakeholder Group</th>
<th>Response Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faculty mentors of snapshot authors</td>
<td>76% (n=54)</td>
</tr>
<tr>
<td>Article authors</td>
<td>61% (n=22)</td>
</tr>
<tr>
<td>Snapshot authors</td>
<td>59% (n=55)</td>
</tr>
<tr>
<td>Faculty mentors of article author</td>
<td>57% (n=20)</td>
</tr>
<tr>
<td>Faculty Advisory Board (2011)</td>
<td>58% (n=7)</td>
</tr>
<tr>
<td>Student Editorial Board members</td>
<td>55% (n=12)</td>
</tr>
<tr>
<td>Faculty mentors non-accepted abstract author</td>
<td>18% (n=8)</td>
</tr>
<tr>
<td>Non-accepted abstract authors</td>
<td>8% (n=5)</td>
</tr>
</tbody>
</table>
### Results:
Table Template Self-reported Learning Gains

<table>
<thead>
<tr>
<th>Competency</th>
<th>Article Authors Reporting Gains</th>
<th>Snapshot Authors Reporting Gains</th>
<th>Editorial Board Members Reporting Gains</th>
</tr>
</thead>
<tbody>
<tr>
<td>How to write for professional publication</td>
<td></td>
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</tr>
<tr>
<td>How to write about research for an informed public audience, etc.</td>
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<td></td>
</tr>
</tbody>
</table>
## Results:

### Table Template: Other-reported Learning Gains

<table>
<thead>
<tr>
<th>Competency</th>
<th>Faculty Mentors of Student Authors</th>
<th>Student Mentors</th>
<th>Faculty Mentors of Snapshot Authors</th>
<th>Faculty Advisory Board</th>
</tr>
</thead>
<tbody>
<tr>
<td>How to write for professional publication</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How to write about research for an informed public audience, etc.</td>
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</table>
Results

✓ Students experienced **gains in learning as a result of** writing an article, writing a research snapshot, mentoring student author

✓ **Because of their involvement with JPUR**, student authors intended to **publish articles in the future**

✓ Faculty were **motivated** to continue to act as mentors

✓ JPUR reaches **large global audience**
Results

- Student authors benefitted from experiencing full spectrum of scholarly publishing process.

- Students gained knowledge of important IL concepts.

- JPUR influenced student career and scholarly aspirations.

- JPUR supports university priorities for student success, Libraries’ strategic priorities
Resulting changes…

- Continue faculty and peer mentoring
- Continue workshops, add research data management, author rights
- Add links to learning resources:
  - using a citation manager
  - constructing spreadsheets, charts, and graphs to display information
  - setting Google Scholar preferences to search for articles available through the Purdue Libraries
  - strategies for working collaboratively
  - subject citation databases
  - interlibrary loan
What we didn’t learn…

• Less learning gains in:
  • How to use a citation manager
  • How to set Google Scholar preferences
  • How to access specialized databases
  • Interlibrary loan service

• So, how did they find citations for their articles?
• Did they do thorough searches?
• How did they obtained full text for those articles not available through the library?
What we didn’t learn…

- Student Editorial Board felt they gained least in how to work collaboratively
  - essential skill for their role
  - characteristic of research groups

- University administrators perspectives on value for recruitment and retention, K-12 outreach, fundraising
Recommendations

- Base assessment plan on established goals for program or activity
- Be realistic about your strategy
- Give others opportunity to provide feedback, but don’t let them hold up the process
- Consult with campus assessment experts
- Communicate results in relevant formats for differing audiences

*Effective * Sustainable * Practical*
Thank you!

Comments and Questions...