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What do Students Learn from Participation in an Undergraduate Research Journal? Results of an Assessment

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

Presentation given at 2014 Library Assessment Conference
8/5/2014
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Purdue University
Vice-President, National Forum on Information Literacy
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

- Student authors of articles
- Student Editorial Board
- Faculty Advisory Board
- Faculty mentors of student authors
- Students attended JPUR workshops
- Students non-accepted abstracts
- Faculty mentors of students non-accepted
- University administrators
- Global audience
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.
Methods: Questionnaires

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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<td></td>
</tr>
<tr>
<td>How to write about research for an informed public audience, etc.</td>
<td></td>
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<td></td>
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</tbody>
</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…