Assessing Graduate Student Theses/Dissertations for Program Improvement

Assessment Office’s Mission

Improve student learning through academic program assessment

Website: manoa.hawaii.edu/assessment
Workshop Outcomes

1. Align faculty expectation with program learning outcomes
2. Leave with a draft/refined rubric
3. Develop strategies to use assessment results

Agenda

1. Rationales for using theses/dissertations for program assessment
2. Strategies to form common expectations
3. Rubric development
4. Strategies to use results
5. Evaluation of the workshop
Slide 5

RATIONALES

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Extensive Faculty Investment

Comprehensive → Proposal → Dissertation
Deep Knowledge of Student Work

Revision 1 → Revision 2 → Revision 3

Collaborative and Collective Evaluation of Student Work

Topic 1 Expert

Method 2 Expert

Student

Topic 2 Expert

Topic 3 Expert

Method 1 Expert
But, unsystematic evaluation may not be reliable

If I criticize the research design, what will the chair think?

It's a perfect chance to challenge Prof. Zhang.

We have been here for 3 hours!
Fine. I will pass the student.

Individual pass or fail tells us little

Knowledge
Research Design
Research Execution
Professional Skills
Best ways to harvest faculty time & expertise

1. Establish common expectations
2. Develop evaluation criteria based on common expectations
3. Use assessment results

Strategy 1

Use program learning outcomes to form common expectations

Resource: Annual Program Assessment Report
UHM Proposed Advanced Degree ILOs

- Knowledge and understanding
- Intellectual and applied skills
- Communication skills
- Professional responsibility

CHECK HOW YOUR SLOS ARE ALIGNED WITH ILOS
Knowledge and Understanding

1. Demonstrate comprehensive knowledge in one or more general subject areas related to, but not confined to, a specific area of interest.

2. Demonstrate understanding of research methodology and techniques specific to one's field of study.

Intellectual and Applied Skills

3. Apply research methodology and techniques specific to one’s field of study.

4. Critically analyze, synthesize, and utilize information and data related to one’s field of study.
Communication Skills

5. Proficiently communicate and disseminate information and data orally, in writing, and through media related to field.

Professional Responsibility

6. Conduct research or projects as a responsible and ethical professional.
7. Interact professionally with others.
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Common expectation Brainstorming questions:
1. What does meeting that outcome mean?
2. How can it be reflected in a thesis/dissertation?

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Strategy 2

Formalizing common expectations into evaluation criteria through a rubric
Introduction to Rubrics

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Level:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1 = Unacceptable</td>
</tr>
<tr>
<td></td>
<td>2 = Marginal</td>
</tr>
<tr>
<td></td>
<td>3 = Acceptable</td>
</tr>
<tr>
<td></td>
<td>4 = Exceptional</td>
</tr>
</tbody>
</table>

Mastery of knowledge (SLO 1)
Research Design (SLO 2)
Research execution (SLO 3)
Reporting (SLO 4)

Rubrics for evaluating dissertations:
- Biology
- Physics
- Electrical and Computer Engineering
- Math
- Economics
- Psychology
- Sociology
- English
- History
- Philosophy

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Tips for Rubric Development 1

- Align with program learning outcomes
- Important criteria that faculty care about
- No more than 7 dimensions $\rightarrow$ cluster/group
- Mutually exclusive dimensions

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Tips for Rubric Development 2

- Limit levels to 3 or 4
- Performance descriptors show growth across levels
- Leave space for comments
- Let it evolve $\rightarrow$ pilot, revise, and refine
Your turn

- Select the SLOs that can be assessed by theses/dissertations or defenses
- Create a rubric to assess theses/dissertations that supports the SLO assessment
  - Resource 1: Rubric language relevant to ILOs
  - Resource 2: Sample Rubrics
Considerations

- Don’t disclose results if you have less than 5
- Collect enough number of works across time
- Decide between 1 score sheet vs multiple score sheets
- Have one person responsible to collect and submit score sheets

Anticipate Questions

If our students pass the dissertations, that means they achieved the outcomes. Why do we have to use a rubric to evaluate their dissertation?
Assessment Example:
Education Psychology M.Ed & Ph.D.

Evidence:
• M.Ed. Scholarly paper
• M.Ed. Thesis
• Dissertation proposal
• Dissertation defense
• Dissertation

Evaluation Rubrics

• Literature review
  – Proposal & dissertation
• Methods
  – Proposal & dissertation
• Oral presentation
Process

• 2007 faculty meeting:
  – Looked at standards from professional organizations
  – Looked at student exemplary work
  – Collectively articulated expectations
  – Gathered students’ feedback on the rubric
• AC collects, analyzes, & summarizes the results
• All faculty interpret the results
• All faculty make improvement plans

Use of the results

• Provided the rubrics to the students in various courses
• Required an additional methods course
• Add assignments in several courses:
  – literature review
  – oral presentation
Strategy 3

Use assessment processes and results
Institutional learning outcomes (ILOs) are a way to envision what graduate programs want students to know, do, and value by the time they graduate. They provide a means to promote the education that underlies an advanced degree, our desire for student success in their graduate experience, and to maintain WASC accreditation.

Many graduate programs already have program specific student learning outcomes that guide their programs. Additionally, all graduate programs share some common required outcomes (e.g., thesis, dissertation, other creative or scholarly work). The statements have undergone three rounds of feedback: two via the Graduate Council and one via all graduate chairs. Statements were formulated from information collected by the Mānoa Assessment Office from graduate programs.

Knowledge and Understanding
1. Demonstrate comprehensive knowledge in one or more general subject areas related to, but not confined to, a specific area of interest.
2. Demonstrate understanding of research methodology and techniques specific to one’s field of study.

Intellectual and Applied Skills
3. Apply research methodology and/or scholarly inquiry techniques specific to one’s field of study.
4. Critically analyze, synthesize, and utilize information and data related to one’s field of study.

Communication Skills
5. Proficiently communicate and disseminate information in a manner relevant to the field.

Professional Responsibility
6. Conduct research or projects as a responsible and ethical professional.
7. Interact professionally with others.
Program Learning Outcome Assessment Rubric Example 1

Program Learning Outcomes:
SLO 1: Demonstrate knowledge of the theories and research methods
SLO 2: Demonstrate ability to design research projects.
SLO 3: Demonstrate ability to carry out an independent research project to collect, analyze, and interpret data.
SLO 4: Demonstrate effective oral and written communication skills.

Ph.D. Student Dissertation and Defense Evaluation Form

<table>
<thead>
<tr>
<th>Assessment Criteria</th>
<th>Score:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Demonstrates mastery of fundamental knowledge in the field by consistently</td>
<td></td>
</tr>
<tr>
<td>applying fundamental and advanced concepts to topics in subject area. (SLO 1:</td>
<td></td>
</tr>
<tr>
<td>Knowledge)</td>
<td></td>
</tr>
<tr>
<td>2. Ability to access and integrate information into a cohesive overview of current</td>
<td></td>
</tr>
<tr>
<td>knowledge; ability to critically evaluate the meaning, value, and contribution of</td>
<td></td>
</tr>
<tr>
<td>published literature in the field. (SLO 1: Knowledge)</td>
<td></td>
</tr>
<tr>
<td>3. Ability to utilize sounds research methods to answer research questions or test</td>
<td></td>
</tr>
<tr>
<td>hypothesis through a thorough review and critical analysis of the methods used in</td>
<td></td>
</tr>
<tr>
<td>relevant studies. Provide just and well-thought-out rationales for data collection</td>
<td></td>
</tr>
<tr>
<td>and analysis. (SLO 2: Research design)</td>
<td></td>
</tr>
<tr>
<td>4. Ability to implement an appropriate collection and analysis of data. Data</td>
<td></td>
</tr>
<tr>
<td>interpretation is appropriate; creatively uses correct methodology; identifies</td>
<td></td>
</tr>
<tr>
<td>limitations in interpretation. Discussion was accurate and engaging. Conclusions/</td>
<td></td>
</tr>
<tr>
<td>summaries are appropriate and clearly based on outcomes (SLO 3: data collection,</td>
<td></td>
</tr>
<tr>
<td>analysis, and interpretation)</td>
<td></td>
</tr>
<tr>
<td>5. Masterfully defends research by providing clear and insightful answers to</td>
<td></td>
</tr>
<tr>
<td>questions; Uses presentation resources as a guide, gives detailed explanations, is</td>
<td></td>
</tr>
<tr>
<td>easily understandable, and keeps appropriate eye contact with the audience. (SLO 4:</td>
<td></td>
</tr>
<tr>
<td>Communication)</td>
<td></td>
</tr>
</tbody>
</table>
Program Learning Outcome Assessment Rubric Example 2

Target Program Learning Outcomes
SLO 2: Educational Psychology graduate students have inquiry skills to conduct scholarly research effectively. (Assessment focus: literature review)

Final Literature Review Assessment Rubric
(revised 05/02/09)

<table>
<thead>
<tr>
<th>Rubric Component</th>
<th>Standards</th>
<th>Unacceptable (0)</th>
<th>Satisfactory (1)</th>
<th>Exemplary (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Statement of research question</td>
<td>EDEP graduate students are knowledgeable about inquiry methods.</td>
<td>The statement of the research question is unclear. The question is not feasible or broad enough in scope for a master’s project/thesis or doctoral dissertation. The practical and/or scholarly significance for educational psychology is not discussed.</td>
<td>The research question is clearly stated. The question is feasible, but the scope may not be appropriate for a master’s project/thesis or doctoral dissertation. The practical and scholarly significance of the research for educational psychology is discussed.</td>
<td>The research question is clearly stated. The question is feasible and is broad enough in scope for a master’s project/thesis or doctoral dissertation. The practical and scholarly contributions of the research for educational psychology are critiqued.</td>
</tr>
<tr>
<td>2. Context</td>
<td>EDEP graduate students are knowledgeable about inquiry methods.</td>
<td>The literature review does not adequately contextualize the research question, and/or there is no indication of what literature was included and excluded.</td>
<td>The literature review adequately contextualizes the research question, indicating what literature was included and excluded.</td>
<td>The literature review adequately contextualizes the research question and includes a critique and synthesis of the literature.</td>
</tr>
<tr>
<td>3. Organization</td>
<td>EDEP graduate students are knowledgeable about inquiry methods.</td>
<td>The writing is not clear. There are many problems with the organization of the paper.</td>
<td>For the most part, the writing is clear and organized.</td>
<td>The writing is clear and well organized.</td>
</tr>
<tr>
<td>4. Style and writing conventions</td>
<td>EDEP graduate students are knowledgeable about inquiry methods.</td>
<td>There are many errors of APA style and other writing conventions.</td>
<td>There are some errors of APA style and other writing conventions.</td>
<td>There are relatively few errors of APA style and other writing conventions.</td>
</tr>
<tr>
<td>5. Revision</td>
<td>EDEP graduate students are knowledgeable about inquiry methods.</td>
<td>The advisor’s and/or Committee’s comments and suggestions are not addressed.</td>
<td>Some of the advisor’s and/or Committee’s comments and suggestions were addressed.</td>
<td>All of the advisor’s and/or Committee’s comments and suggestions were addressed.</td>
</tr>
</tbody>
</table>
Program Learning Outcome Assessment Rubric Example 3

**Program learning outcome to be assessed:** SLO 2 Conduct scholarly research

<table>
<thead>
<tr>
<th>Category</th>
<th>Needs work</th>
<th>Meets expectations</th>
<th>Exemplary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypothesis</td>
<td>O Hypothesis is stated but is vague and lacks clarity regarding the research questions to be answered. O Describes an activity, tool, method, technique, rather than a hypothesis.</td>
<td>O Hypothesis is clearly stated, concise, and testable.                                                                                 O Provides a clear understanding of the research questions to be answered. O Is significant.</td>
<td>O Hypothesis is very clearly stated, concise, and highly testable.                                                                                 O Makes the research questions transparent. O Is highly significant and original.</td>
</tr>
<tr>
<td>Score: ____</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Research Design/Methods</td>
<td>O Is clear enough for readers to understand what is to be accomplished. O Is shoddy. The method selection and the sequence need to be further justified. O Leaves part of the research questions unanswered.</td>
<td>O Is well justified.                                                                      O Is relevant and appropriate to test the hypothesis or answer the research questions. O Serves as a map of the study. O Represents rigor.</td>
<td>O Is well grounded in theory; exhausts all possibilities. O Design is elegant and compelling. O Serves as a blueprint of the study and is highly replicable. O Represents high analytical power and rigor.</td>
</tr>
<tr>
<td>Score: ____</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data Analysis</td>
<td>O Data analysis techniques provide basic answer to the research question(s). O Analysis sequence lacks coherence. The accuracy of the results is unclear. O There are limited visual aids.</td>
<td>O Employs appropriate data analysis techniques of the specialization. O Analysis sequence and results are accurate/appropriate. O Supports the communication of the results with appropriate visual aids.</td>
<td>O Uses strong and innovative analysis techniques. O Analysis sequence is highly logical, thorough, and compelling, and the results are accurate. O Effectively uses visual presentation of the data of superior quality.</td>
</tr>
<tr>
<td>Score: ____</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data Interpretation/Conclusion</td>
<td>O Major topics or concepts are inaccurately described. O Considerable relevant discussion is missing. O Conclusions/summary is not entirely supported by findings/outcomes.</td>
<td>O Discussion is sufficient and with few errors. O Conclusion draw upon past work in the area but greater foundation is needed. O Conclusions/Summary is based on outcomes and is appropriate, includes some recommendations.</td>
<td>O Discussion is superior, accurate, and engaging. O Shows strong foundation of the past work and contributes significantly to the field. O Conclusions/summaries and recommendations are appropriate and clearly based on outcomes.</td>
</tr>
<tr>
<td>Score: ____</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Additional Criteria</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall Rating: ____</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comments:</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Examples of Graduate Program Assessment Using Theses/Dissertations Work and Work-in-Progress Evaluation

<table>
<thead>
<tr>
<th>Program</th>
<th>Feature in 2014 Annual Program Assessment Report</th>
</tr>
</thead>
<tbody>
<tr>
<td>Civil Engineering (MS)</td>
<td>Plan A and Plan B evaluation rubric</td>
</tr>
<tr>
<td>Communication &amp; Info Sci (PhD)</td>
<td>Dissertation proposal assessment rubric</td>
</tr>
<tr>
<td>Communication (MA)</td>
<td>MA thesis defense rubric</td>
</tr>
<tr>
<td>Economics (Ph.D.)</td>
<td>Ph.D. thesis and defense assessment rubric</td>
</tr>
<tr>
<td>Education Psychology (Ph.D.)</td>
<td>Grad program assessment rubric to assess lit review and ethics</td>
</tr>
<tr>
<td>Electrical Engineering (MS)</td>
<td>Plan A defense and Plan B evaluation rubrics</td>
</tr>
<tr>
<td>Hawaiian (MA)</td>
<td>Plan A and Plan B thesis and oral defense rubrics</td>
</tr>
<tr>
<td>Nutrition (Ph.D.)</td>
<td>Ph.D. program assessment using rubrics</td>
</tr>
</tbody>
</table>

Select the strategies to use results

☐ Public and effective presentation of results:
  Sample Results Presentation:

<table>
<thead>
<tr>
<th>SLO</th>
<th>% meeting or exceeding expectations (Total Number = 10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLO 2. Research Methods</td>
<td>100%</td>
</tr>
<tr>
<td>SLO 3. Lit Review</td>
<td>75%</td>
</tr>
<tr>
<td>SLO 4. Communication</td>
<td>50%</td>
</tr>
</tbody>
</table>

☐ Guide discussion with questions
  • How well did we do?
  • How well do the results live up to our expectations?
  • How clear were the expectations to our students?
  • How can we help students better achieve our expectations?

☐ Develop an action plan that clearly specifies:
  • Descriptions of actions
  • Person(s) responsible for implementing the plan
  • Timelines