Using Excel's Pivot Table to Analyze Learning-Assessment Data
Workshop Evaluation Report

Executive Summary:
As part of the Spring 2013 Making Program Learning Assessment Happen workshops, the Assessment Office (AO) offered a workshop called Using Excel's Pivot Table to Analyze Learning-Assessment Data on February 13, 2013. The workshop was advertised as a beginner-level workshop suitable for faculty and assessment coordinators looking to increase their understanding of how to create and modify PivotTables to organize, summarize, and present data in meaningful ways. This workshop provided hands-on practice for participants to follow along independently through step-by-step instructions.

Seventeen participants completed and submitted the pre-workshop outcome survey (94% response rate). All 18 of the workshop participants completed and submitted the post-workshop outcome survey and workshop evaluation (100% response rate). The learning gain on intended outcomes ranged from 74-94%, which implies high effectiveness of the workshop. Overall, participants found the workshop useful and effective in increasing their understanding of how to utilize PivotTables.

1. State the SLO(s) that was Assessed, Targeted, or Studied
Evidence was collected on the extent to which participants achieved the learning outcomes and the extent they were satisfied with the usefulness and effectiveness of the workshop in relation to the workshop outcomes: (a) setting up pivot tables; (b) altering pivot table data values; (c) sorting tables and creating filters; (d) formatting pivot tables; (e) creating pivot charts. An evaluation form was used to determine if the workshop was effective in teaching participants how to utilize PivotTables.

2. State the Type(s) of Evidence Gathered
Pre-workshop and post-workshop surveys.

3. State How Many Pieces of Evidence Were Collected
Seventeen out of 18 participants completed the pre-workshop survey (94% response rate). All 18 workshop participants completed and submitted post-workshop evaluations (100% response rate).

4. State How the Evidence was Interpreted, Evaluated, or Analyzed
The workshop facilitator used descriptive statistics to examine the learning gain on each outcome and summarize closed-ended questions. The facilitator identified themes from close reading of the open-ended responses.
5. Summarize the Actual Results

**Learning outcome achievement results**
As shown in Table 1, more than 80% of the participants answered “Yes” to all the outcome related items (Item 1 - 9) on the post-workshop survey, whereas only a small percentage of participants answered “Yes” to the same items on the pre-survey (0-24%). The learning gain ranged between 65% to 94%. The gain on each learning outcome (Outcome 1 to 5) ranges from 74% to 94%. These results imply that the workshop was effective in promoting PivotTable skills for the participants.

However, when examining individual responses, it turned out that two participants answered mostly “No” or “Not sure” on the outcome items. One participant was using an older version of Excel on a Mac computer and she commented that she was not able to follow the instructions well because the interface was very different than on her computer. Another participant answered “No” or “Not sure” on 8 items and she felt that more time was needed for practice.

Table 1. Percent of learning gains on each pre- and post-survey items and on each of the learning outcomes aligned with the survey items.

<table>
<thead>
<tr>
<th>Learning Outcome</th>
<th>Survey Item</th>
<th>Pre</th>
<th>Post</th>
<th>Gain</th>
<th>Outcome Gain</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Set up pivot tables</td>
<td>1) prepare my data for PivotTable reports.</td>
<td>12%</td>
<td>94%</td>
<td>83%</td>
<td>74%</td>
</tr>
<tr>
<td></td>
<td>2) place fields in the Column Labels box.</td>
<td>24%</td>
<td>89%</td>
<td>65%</td>
<td></td>
</tr>
<tr>
<td>2 alter pivot table data</td>
<td>3) change PivotTable values from sum to count.</td>
<td>0%</td>
<td>94%</td>
<td>94%</td>
<td>86%</td>
</tr>
<tr>
<td>and create filters</td>
<td>4) show values as a percent of column totals in</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>a PivotTable.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 sort tables</td>
<td>5) sort values in a PivotTable.</td>
<td>6%</td>
<td>89%</td>
<td>83%</td>
<td>77%</td>
</tr>
<tr>
<td>and create filters</td>
<td>6) create a filter.</td>
<td>12%</td>
<td>83%</td>
<td>72%</td>
<td></td>
</tr>
<tr>
<td>4 format pivot tables</td>
<td>7) group items together to create a more general</td>
<td>6%</td>
<td>89%</td>
<td>83%</td>
<td>83%</td>
</tr>
<tr>
<td></td>
<td>category.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>8) change table design style.</td>
<td>12%</td>
<td>94%</td>
<td>83%</td>
<td></td>
</tr>
<tr>
<td>5 create pivot chart</td>
<td>9) create a PivotChart.</td>
<td>6%</td>
<td>100%</td>
<td>94%</td>
<td>94%</td>
</tr>
<tr>
<td>General</td>
<td>10) answer an assessment-relevant question</td>
<td>0%</td>
<td>72%</td>
<td>72%</td>
<td>72%</td>
</tr>
</tbody>
</table>

**Note:** The first column shows the learning outcome targeted, and Survey Item column shows the items used to assess each of the targeted outcome. The percentages under the Pre and Post columns are the percentages of the participants who answered “Yes” on either the pre-workshop survey or the post-workshop survey items. Numbers under Gain show the increase in percentage of participants learned a particular pivot table skill. Outcome Gain is the average of the gains on items aligned with a particular outcome.
**Workshop Participant Evaluation results**

- 13 out of 18 participants (72%) said the workshop was ‘Very Useful’, 4 participants (22%) said it was ‘Useful’, and 1 participant (6%) said it was ‘Of Little Use’.
- 12 out of 18 participants (67%) said the workshop was ‘Very Effective’, 5 participants (28%) said it was ‘Effective’, and 1 participant (6%) said it was ‘Not Very Effective’.
- Overall, the majority of the participants found the workshop very helpful. They mostly appreciated the hands-on practice and the step-by-step instructions on the handout and in the demonstration.
- Actionable suggestions are to provide more practice opportunity, provide separate workshops for those with own Macs or PCs, and to slow-down in the demonstration.

Detailed results are presented in Appendix A.

6. **In addition to the actual results, were there additional conclusions or discoveries?**

One participant said the workshop was ‘Not Very Effective’ and ‘Of Little Use’, but only because they already had some experience with pivot tables and did not learn any new information. This workshop is targeted towards beginners, providing the basics for using PivotTables.

7. **Use of Results/Program Modifications:**

A couple of participants stated that they had trouble following along on their Mac computers. Next time, the facilitator should also make it clear that the workshop will be demonstrated using Excel 2010. Alternative resources with instructions and videos can be provided separately for the Mac users.

Most importantly, the facilitator can provide more time for independent practice on an assigned tasks.

8. **Reflect on the Assessment Process**

The pre- and post-surveys worked very well in assessing the learning gain.

9. **Other Important Information**

None.
Appendix A. Responses to Open- and Closed-Ended Questions

Stem: Overall usefulness of the workshop

<table>
<thead>
<tr>
<th>Response Item</th>
<th>Number of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Useful</td>
<td>13</td>
</tr>
<tr>
<td>Useful</td>
<td>4</td>
</tr>
<tr>
<td>Of Little Use</td>
<td>1</td>
</tr>
<tr>
<td>Not Useful At All</td>
<td>0</td>
</tr>
<tr>
<td>No Opinion</td>
<td>0</td>
</tr>
</tbody>
</table>

Stem: Workshop effectiveness in increasing understanding

<table>
<thead>
<tr>
<th>Response Item</th>
<th>Number of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very Effective</td>
<td>12</td>
</tr>
<tr>
<td>Effective</td>
<td>5</td>
</tr>
<tr>
<td>Somewhat Effective</td>
<td>0</td>
</tr>
<tr>
<td>Not Very Effective</td>
<td>1</td>
</tr>
<tr>
<td>Not Sure</td>
<td>0</td>
</tr>
</tbody>
</table>

Most valuable aspect of the workshop

- Print out of instructions so I can follow after workshop
- Power instructions, hands-on work
- Knowing how to utilize pivot table in real-life settings very useful!
- Learning how to use PivotTable
- Step-by-step PivotTable creation/use
- On-screen demo was helpful
- I am entirely new to PivotTables, so everything was useful. Practicing on my own was most valuable.
- Hands-on allows information to solidified.
- I didn't even know what PivotTables were, so it was a good introduction.
- Ways to filter the data- this is something regular tables don't do well.
- Hands on activities gives practice.
- 1:1 help in addition to the lecture.
- The presenter. She was really good!
- Step-by step example.
Least valuable aspect of the workshop

- More time needed to practice
- All was useful!
- Learning that still have to compute statistics manually; conceptualizing usefulness of PivotTable to what I'll be doing
- Could use more time with this. I still need more practice to see if I really get it.
- Mac vs. PC differences pop up
- Little quick, but not too much, slow a little bit.

Other constructive comments

- This was great. More please!!! Would love stuff of SPSS!
- I had a hard time because I have a Max with an old Excel so was a bit hard to follow but I have my notes and will try to do this again when I get Excel 2011 on my laptop.
- LOVE IT!
- Very well-prepared!
- Organize slides in more orderly way and don't skip steps
- Run Mac & PC workshops separately. Mahalo!
- Thanks!
- Very sharp-looking slides!
- More time & in-depth → another workshop?
- Very helpful.
- Thank you, Yao!!!
- The workshop itself was very good but didn't give me really any new information on something, I could have figured it out on my own. I already have some experience with pivot tables.