ANGEL: Using Assessments to Improve Teaching and Learning

Delivered by ITS Training Services for Penn State and developed in collaboration with Schreyer Institute for Teaching Excellence
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OBJECTIVES
Participants will be able to
• Match appropriate question types to evaluation needs
• Create an assessment in ANGEL
• Utilize different question types within an assessment
• Manipulate assessment settings to modify question sets and the options for display, submission, time, and review
• Manipulate question settings to create questions customized for display, value, and feedback

CREATING ASSESSMENTS

Before Designing Assessments
Assessing student learning is a vital part of teaching. Assessments provide opportunities for diagnosing and monitoring student learning. Assessments also provide evidence of what students have learned and of the extent to which they are meeting learning objectives. Before creating an assessment, some questions to consider include:

1. What learning objectives do you want to assess?
2. What will count as evidence of student learning?
3. How do you want to assess your students?
   • ANGEL assessments may constitute the full suite of assessments for your course, or they may be only a part of your assessment plan.
   • In ANGEL, assessments can be designed to provide instant scoring, which saves time for instructors and gives students instant feedback.
   • Assessments can be used as a method of self-evaluation, can give students practice with basic terms, concepts, and principles, and can help students complete homework problems, assigned readings, and prepare for exams.
4. What type of questions will you ask?
   • Selected response item types provide students with all possible answers and require them to select the correct one. Selected response type items include multiple choice, matching, and true/false and are typically harder to write but easier to score.
   • Supplied response item types provide students with a prompt and require them to supply a response. Examples include short answer and essay. Typically, supplied response items are easier to write but harder to score.
   • Whichever question type you choose, remember that it typically will take students four times as long to take the assessment as it takes you.
5. How much will each assessment be worth?
   • When designing any assessment, it is important to consider how it fits into your overall assessment plan.
   • Higher stakes assessments may be worth a considerable amount, while other more diagnostic types of assessments may be weighted less heavily.

6. How often will you assess your students?
   • Substantial amounts of research exist to support that frequent testing improves learning (e.g., Butler, 2010; Kornell, Bjork, & Garcia, 2011).
   • Try to find ways, both formal and informal, to test student understanding.

Penn State has many resources to help you create effective assessments including:
   • Schreyer Institute for Teaching Excellence: [http://www.schreyerinstitute.psu.edu](http://www.schreyerinstitute.psu.edu)
     o Consult with assessment and evaluation experts on course design and planning, teaching and assessment strategies, course evaluation, and evaluation for educational grants.
     o Attend customized workshops on a variety of teaching and learning topics.

After creating an assessment, it is a best practice to demo the assessment using the student preview tool in ANGEL. This allows you to see the assessment as the student will see it, giving you the opportunity to make changes to the assessment before the semester begins.

**Testing at Penn State**

Penn State provides computer-based classroom testing in a secure environment via the Testing Center located on the first floor of the Pollock Building. The assessment is delivered in a secure environment where students must present identification to enter and exit the Testing Center. There are specific directions for scheduling your assessment at the Testing Center as well as specifications for the assessment’s settings available on the Testing Center’s website located at [http://testing.psu.edu/](http://testing.psu.edu/)

**Content Tab**

The Content tab provides the following options for the assessment’s page settings and link settings:
   • **Page settings**: contains information about the assessment such as title, subtitle, and page text.
   • **Sequence**: available when the Advanced radio button is selected; is used to determine the content item’s position on the Lesson tab or within the folder where it is located.
   • **Link Settings**: available when the Advanced radio button is selected; is used to direct the content item to open in a new window, post the URL of a custom script to which responses should be posted, change the icon displayed for the assessment, or add a help link for the assessment.

**NOTE:** If the assessment is to be graded, it is recommended that instructors choose the Same Window setting to prevent the assessment from opening in a new browser window.
EXAMPLE

In this exercise, we will add an assessment called Assessment 1 to the Week 1 folder.

1. From within the ANGEL Training Sessions course, select the Lessons tab.
2. Click the Week 1 folder.
3. Click the Assessment Exercises folder.
4. Click the Add Content link.
5. Click the Assessment icon.

![Assessment icon](image)

The New Assessment screen is now displayed.

![New Assessment Content tab](image)

6. Select the Advanced radio button.
7. In the Page Settings area, enter Your initials: Assessment 1 in the Title field.
8. Ensure that Same Window is selected from the Link Target drop-down menu.

**NOTE:** If the assessment is going to be graded, it is recommended that instructors choose the Same Window setting to prevent the assessment from opening in a new browser window.
Access Tab

The Access tab provides options for accessing, viewing, and editing the assessment.

User Tracking

The instructor can record information about visits to a lesson item by enabling user tracking. It is recommended to set User Tracking to Everyone so that a log of the users who have accessed the content item can be generated, showing the date and time each user accessed it. This log can be viewed by selecting the Reports link located under the name of the assessment on the Lesson tab.

View Restrictions

The View Restrictions area of the Access tab provides options for choosing the dates during which the assessment will be displayed on the Lessons tab.

- **Do not allow users to view this item**: Overrides the Viewable By and Start Date options and allows you to hide the assessment. This can be helpful if you want to temporarily hide an item without having to change its Viewable By or Start Date settings.
- **Viewable by**: Define which types of users should be able to view the item. If Students is selected, everyone in the course can view the assessment.
• **Password:** Assigning a password requires students to enter that password before viewing that item. Instructors may directly access the content without entering a password. To remove a password, simply delete the characters in the Password field.

• **Team Access:** Restrict viewing of an item to a particular group of users. This can be useful if you want to have independent group projects and you want to ensure that members only see materials for their own group.

• **Start and End Dates:** Determines the date when that content item will be visible within the course. You may schedule your content to appear within the course in advance.

**NOTE:** If no dates are selected, the user will always be able to see the assessment on the Lessons tab, but will not be able to take the assessment as long as there are dates specified in the Delivery Settings on the Interaction tab.

### Edit Restrictions

The Edit Restrictions areas of the Access tab allow you to specify which category of users can edit the assessment.

• **Editable By:** Define which types of users should be able to edit values on that items’ Access tab. The default setting is to allow all course/group editors to edit these settings. It can also be set to author/owner to further restrict editing rights.

• **Object Editable By:** Define who can change the description, title, or page text for the assessment by selecting an option under the Object Editable By drop-down menu.

### Internet Security

The options under the Internet Security section determine the level of browser security associated with the assessment. The default setting is None – no browser security imposed. The following options are available:

• **Medium – disable right-click, print, etc.:** Will open the assessment in a new window, disable common browser functions including menus, address bar context menus, and the use of most control keys.

• **High – requires Secure ANGEL browser:** Will make the assessment available only to users who view it using special software available only on Penn State Testing Center computers in 104 Pollock Building at University Park.

• **IP Filter field:** Specify a specific range of IP addresses that can access the assessment. This is most useful for a computer lab; you can specify the range of IP addresses for just that lab. Click the IP Filter help topic link for more information.
EXAMPLE

In this exercise, we will modify the assessment settings for the assessment that we created in the previous exercise.

1. Ensure the Access tab is selected.

![New Assessment Access tab]

   2. In the Access Tracking section, ensure Everyone is selected from the User Tracking drop-down menu.

   NOTE: If tracking was turned on at the folder level, the assessment should reflect that at this point.
Interaction Tab

The Interaction tab allows the instructor to have control over how the users will interact with the assessment. The instructor can control the delivery settings, display settings, question set defaults, submission settings, and time settings. ANGEL’s assessment tool provides many options for assessment interaction. It is a best practice to determine ahead of time how the user will interact with the assessment and then preview the assessment using the User Preview tool. See Appendix B for a summary of these settings.

Delivery Settings

ANGEL’s delivery settings on the Interaction tab control when the user can take the assessment.

- The user is able to enter the assessment and view the questions during the time frame specified under the Start Accepting Submissions / Stop Accepting Submissions area.
- Even though dates are specified in the Delivery Settings area, the user will still see the assessment icon under the Lessons tab when viewing it at a time other than during the specified delivery date range.
- To hide the assessment icon, use the settings under the View Restrictions area of the Access tab. If using dates under both the Access tab and the Interaction tab, it is recommended to match the start/end dates and times under both tabs.
- When an assessment is created, the default start and stop time frame is the current date and time.
- The instructor must select dates and times from the drop-down menus in addition to selecting the checkboxes beside the Start and Stop Accepting Submissions checkboxes.
- If no dates are selected, the user can enter the assessment and view the questions at any time.

NOTE: If overriding the delivery settings for a particular student or a team, be sure to uncheck the Do not allow users to view this item checkbox under the View Restrictions area of the Access tab. Checking the Do not allow users to view this item checkbox will prevent the student or team from accessing the assessment, even though you have set the delivery dates to allow access to the assessment. For more information on overriding delivery settings, see the Knowledge Base article “Override Assessment Settings for Specific Students” located at http://kb.its.psu.edu/cms/article/27
Display Settings

Display settings control how the assessment is viewed by users.

![Display Settings](image)

- **All at once**: Displays all the assessment questions on a single page.
- **Question set at a time**: Displays one question set at a time. The user must click the Continue button to view the next set of questions associated with the assessment.
- **Question at a time**: Displays one question at a time and the user must click the Continue button to view the next question.

**NOTE**: Displaying one question at a time is recommended as it allows students to focus on one question at a time. Additionally, students cannot determine the answer to a question by using other questions on the same page.

- **Show question titles**: Displays question titles with the question text.
- **Enable Assessment Navigation**: Allows students to mark questions for review, sort by question or answers, and jump to any question.
Question Set Defaults

An assessment may contain one or more question sets. A question set is a group of questions which can be displayed in random order each time the assessment is presented to the student. Settings for questions sets are located under the Question Set Defaults area of the Interaction tab.

- **Randomize the order in which questions are delivered**: Randomizes the presentation of questions within a question set.
- **Randomize the order of each question’s answer options**: Randomizes the order of each question’s answer options.

**NOTE**: Randomizing the order of each question’s answer options is typically not recommended in the testing literature. Some research suggests that randomization can result in differential difficulty, especially for lower performing students.

- **Don’t allow backtrack**: Does not allow the user to go back to previous questions or question sets. This setting is only available when using the Question set at a time or Question at a time display mode settings.
- **Display question feedback after each question**: Displays feedback created by the instructor after each question is answered. This setting is only available when using the Question at a time display mode setting.
- **Correct answer must be selected before next question is presented**: Disables the assessment from advancing to the next question until the user selects the correct answer. This setting is only available when using the Question at a time display mode setting.

**NOTE**: You cannot enable assessment navigation in the display settings and disable backtrack in the question set defaults at the same time. A warning message will appear instructing you to make a choice between these two settings.
Submission Settings

The submission settings specify how an assessment is submitted. You may choose different settings depending on the purpose of the assessment.

- Submission Settings

<table>
<thead>
<tr>
<th>Mastery Settings</th>
<th>□ if score is above □ % deny additional attempts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attempts Allowed</td>
<td>Unlimited</td>
</tr>
<tr>
<td>Validation</td>
<td>Allow, but issue warning</td>
</tr>
<tr>
<td>Save Option</td>
<td>□ Show save button</td>
</tr>
<tr>
<td>Anonymous Mode</td>
<td>□ Make submissions anonymous</td>
</tr>
</tbody>
</table>

Figure 8: Interaction Tab with Submission Settings displayed

- **Mastery settings**: Allows the course editor to specify a percentage that demonstrates mastery on the assessment. User scores equal to or higher than this percentage indicate mastery of the assessment, and the user is denied access to retake the assessment.

**NOTE**: Use this feature in conjunction with the Action Editor to be certain that students can demonstrate a particular level of mastery before moving on to new content or skill development. For example, mastery of certain lab-related knowledge may be required before participating in a science lab. For more information on using the Action Editor, please refer to the IT Knowledge Base article “Lesson Items Settings: Action Settings Field” located at [https://kb.its.psu.edu/cms/article/149](https://kb.its.psu.edu/cms/article/149).

- **Attempts allowed**: Sets the number of times a user can complete the assessment. Research supports that students learn from testing (e.g., Roediger, Putnam, & Smith, 2011). Consider whether your particular assessment may be a candidate for multiple student attempts.

- **Validation**: Specifies the following validation options:
  - Do not allow incomplete submissions.
  - Allow incomplete submissions with a warning.
  - Allow incomplete submissions without a warning.

- **Save option**: Allows users to save answers and finish the assessment at a later date or time. All answers are auto-saved upon clicking Next and/or Submit.

**NOTE**: If a student saves the assessment but does not submit the assessment within the assessment’s specified time frame, ANGEL will not automatically submit the assessment.

- **Anonymous mode**: Allows assessments to be completed and submitted anonymously.
Time Settings

Options under time settings allow you to set the total amount of time users will have to complete the assessment, as well as provide a warning when time is about to expire. There is a 90-minute time out setting in ANGEL. If no information is sent from an individual user’s computer to ANGEL for 90 minutes, ANGEL will time out and close the user’s connection. You may create certain types of assessments that need more than 90 minutes to complete, such as essay assessments or assessments for individuals who require more than 90 minutes to complete an assignment. If there is no question submission during the 90-minute period, ANGEL may time out. The best way to prevent this from happening is to break up assessments into two or more individual assessments and ask students to take these assessments one after the other. You should also inform your students about the 90-minute time out limit.

- **Time Limit**: Sets the amount of time allowed for users to complete the assessment.
- **Time Warning**: Sets a time warning to remind users of how much time they have left to complete the assessment. Time warning values can be set in increments of 1 minute to 30 minutes.
- **Automatically submit when time limit expires**: Sets the assessment to automatically submit, regardless of completion status, when the time has expired. This setting is not recommended.
- Select the Interaction tab.
EXAMPLE

In this exercise, we will modify the assessment’s settings under the Interaction tab.

1. Ensure the **Interaction** tab is selected.

2. In the Delivery Settings area, ensure the **Start Accepting Submissions** and **Stop Accepting Submissions** checkboxes are unchecked.

3. In the Display Settings area, ensure the **Question at a time** radio button is selected.

4. In the Question Set defaults area, check the **Display feedback after each question** checkbox.
5. In the Submission Settings area, select **Unlimited** from the Attempts Allowed drop-down menu.

**NOTE:** This option is selected during this exercise in order to allow participants to use the Student Preview tool to take the assessment multiple times.

![Figure 13: Interaction Tab with Submission Settings displayed](image13)

6. In the Time Settings area, ensure the **Unlimited** radio button is selected.

![Figure 14: Interaction Tab with Time Settings displayed](image14)
Review Tab

Multiple review and feedback options are available under the Review tab. The options under the Review Availability heading provide control over when students can see the assessment feedback that is applied in the Feedback Options area.

**View Submission History**: Determines the level of review feedback to which users have access.

- **Full Review**: User has access to the full results of the assessment upon submission, restricted only by the current Feedback Options. In addition, upon returning to a previously submitted assessment, the user is presented with a hyperlinked list of the dates on which he/she has submitted the assessment. The user may click on the hyperlinked item to review the full results of the submission restricted only by the current Feedback Options settings.

- **List only**: User has access a list summary of the assessment upon submission, including the number of points awarded, the number of points missed, and an overall score. In addition, upon returning to a previously submitted assessment, the user is presented with a list of the dates on which the user submitted the assessment and the grade for each submission (if applicable).

- **Disabled**: Prevents the display of feedback.

**NOTE**: It is recommended that instructors set View Submission History to Disabled until after the assessment has been completed.

**Review Availability**: Sets when review feedback is displayed. There are three different options to control review availability:

- **Review begins**: Set the review period to begin any number of days after:
  - The user submits their assessment
  - The assessment is disabled (no longer able to be taken)
  - A specific date

- **Review ends**: The review period can be set to end any number of days after it begins.

- **Restrict review until all questions are graded**: Selecting this option delays delivery of feedback to students until all questions have been graded.
Display Feedback: Determines when review feedback is displayed.

- **Question set completion** (conditional): Displays review feedback upon completion of each question set. This option is applicable only when using the Question set at a time display mode interaction setting.
- **Assessment completion**: Displays review feedback upon completion of the assessment.

Feedback Options: Specifies which review feedback options are displayed. Options available for display include:

- **Overall score**: Displays table with points possible for the assessment
- **Right or wrong**: Indicates correct and incorrect responses with either a green check or red x
- **Question text**: Displays question text and answer options; must be enabled to see User response.
- **User response**: Displays the user's answer choice or response
- **Feedback text**: Displays individual question feedback text for the user's response.
- **Answer key**: Displays a sequential list of the correct answer options.
- **Grader remarks**: Displays overall question feedback for correct or incorrect answers.
- **Points possible**: Shows points possible for the Assessment.
- **Points awarded**: Shows points earned for the Assessment.

**EXAMPLE**

In this exercise, we will modify the assessment settings under the Review tab.

1. Ensure the **Review** tab is selected.

   ![Figure 16: New Assessment Review tab](image)

2. Ensure that **Full Review** is selected from the View Submission History drop-down menu.

   **NOTE**: Full Review is selected during this exercise to demonstrate how the feedback options are displayed to the user after taking the assessment using the user preview tool.

3. Click the **Save** button.
The Assessment Editor is now displayed.

![Assessment Editor](image)

Figure 17: Assessment Editor displaying default Question Set titled Questions

By default, when an assessment is created, the Assessment Editor creates a question set called Questions.

**Assessment Questions and Question Sets**

After creating an assessment, the Assessment Editor opens by default. The Assessment Editor allows you to add questions to the assessment and provides options for organizing the questions into question sets. After creating an assessment, you can return to the Assessment Editor at any time to add or revise questions by selecting the assessment you wish to revise under the Lessons tab.

The Assessment Editor provides options to selected response and supplied response question types (see Appendix C for a list of pros and cons for each item type).

Selected Response: question type that provides all possible answers and requires that students select the correct one.

- **Multiple Choice**: Question followed by a list of choices; one selection is allowed
- **Multiple Select**: Question followed by a list of choices; multiple selections are allowed
- **Matching**: List of items and definitions to be matched
- **True or False**: Statement that is either true or false
- **Ordering**: List of items that must be placed in the correct sequence

Supplied Response: question type that provides a prompt and requires students to supply a response.

- **Short Answer**: Question followed by a single line answer box; must be manually graded
- **Essay**: Question followed by a multi-line answer box; must be manually graded
- **Fill in the Blank**: Question presented as text with blank spaces for the correct word or phrase to be filled in by the user; must be manually graded
- **Offline Item**: Question with no answer field that must be completed offline; must be manually graded
- **Algorithmic**: Question automatically generated by mathematical formulas and variables; automatically graded by ANGEL

Instructors can use the Assessment Editor to select questions from other sources, such as copying questions from an existing assessment, using questions from a question pool, or copying and pasting questions from a text file.

The different types of questions available in ANGEL can be created alone or can be grouped together in a question set. An assessment can contain a single question set or multiple questions sets. For example, all true or false questions can be grouped together in one question set, and all short answer questions
can be grouped together in another question set. You may also group questions by units from within your course. For example, if your course contains five instructional units and you are preparing a final exam, the final exam might have five question sets, one for each unit. Instructors can also use question sets to display a group of questions in random order each time the assessment is presented. ANGEL’s assessment tools give instructors greater flexibility in how they present materials to their students.

EXAMPLE

In this exercise, we will add questions to the default question set called Questions. See Appendix C for a list of sample questions and answers for use with this exercise, or you may use your own.

1. Click the **Add Question** link in the Question Set: Questions area.

The Select Question Type screen is displayed in a new window.

![Select Question Type screen](image)

2. Select the **Multiple Choice** question type from the Select Question Type screen.
3. Enter a **Question title**, a **Point value** for the question, the **Question text**, and **possible answers** for your multiple choice question.

![Multiple Choice Editor](image)

**Figure 19: Multiple Choice Editor**

4. Select the radio button next to the **correct answer** for the question.

5. Uncheck the **Add to question bank** checkbox.

6. Click the **Save** button at the bottom of the Multiple Choice Editor page.

The Question Editor displays the mutiple choice question that was just created.

![Question Editor](image)

**Figure 20: Question Editor with a multiple choice question displayed**

7. Click **Add Question** from the Question Set: Questions area to add a second question.
8. Choose the **True or False** question type from the Select Question Type page.

9. Complete the **Question Title, Points, Question Text**, and **Answer** fields.

![Figure 21: True or False Question Editor](image)

**NOTE:** Assessments can contain different point values for each question. Not all questions have to have the same point value.

10. Uncheck the **Add to question bank** checkbox.

11. Click the **Save** button to add the question to the assessment.

12. Click the **Add Question** link in the Question Editor’s Question Set: Questions area.

13. Choose the **Multiple Select** question type from the Select Question Type page.

14. Complete the **Question Title, Points, Question Text**, and **Answer choices** fields.

![Figure 22: Multiple Select Question Editor](image)

15. Choose one or more **correct answers**.

16. Click **Save**.
NOTE: You can continue to add additional questions by selecting the Add Question link in the Question Set: Questions area.

Figure 23: Questions displayed in the Assessment Editor
Once you have finished entering questions into your assessment, it is considered a best practice to take the assessment using the User Preview tool. The User Preview tool can be used to preview any item in a course or group. If previewing as a Student/Member, you will not see the Manage tab or link options that you see as an Instructor/Course editor.

**EXAMPLE**

In this exercise, we will use the User Preview tool to take the practice assessment that we created in the previous exercise.

1. To activate the User Preview tool click the **eyeglasses icon** located by your name in the upper right corner of the screen.

   ![Figure 24: User Preview tool button]

2. On the User Preview Tool screen, ensure that the **Student** radio button is selected.

   **NOTE:** A member in an ANGEL group is equivalent to a student in an ANGEL course.

3. Click the **Begin Preview** button.

   ![Figure 25: Rights area on the User Preview Tool screen]

   **NOTE:** When the preview tool is active, the user name displays as Student and the color of the eyeglasses icon changes from gray to blue.

4. Click the **Week 1** folder link.

5. Click the **Assessments Exercises** folder.

6. Click the **Assessment** icon.
The Assessment Instructions screen is now displayed. Any instructions and interaction options you added to the assessment will appear on this screen.

Figure 27: Assessment Instructions screen

7. Click **Begin Now** to start the assessment.
8. Complete the **assessment**.

**NOTE:** It is a best practice to answer questions correctly and incorrectly to ensure that both types of assessment feedback display correctly.

Figure 28: Active assessment with answers selected

9. Click **Submit** when you are finished answering all of the questions.
10. Depending on the way you set the user features during the assessment creation, you may be presented with a prompt confirming that you are about to submit the assessment. Click **OK** if you are ready.
The Assessment Submission Results screen is now displayed.

![Assessment Submission Results screen](image)

You will also see any of the feedback options selected when the assessment was created. In the example below, correct and incorrect responses, points earned, and correct answer feedback is displayed.

| Points Awarded | 21.00 |
| Points Missed | 2.00 |
| Percentage | 91.3% |

Figure 29: Assessment Submission Results screen

You will also see any of the feedback options selected when the assessment was created. In the example below, correct and incorrect responses, points earned, and correct answer feedback is displayed.

5. You can only have one question type in a question set.
   - A) True
   - B) False

| Points Earned | 2.0/2.0 |
| Correct Answer(s): False |

6. Short answer, Fill in the blanks, and offline items questions need to be manually graded?
   - A) True
   - B) False

| Points Earned | 0.0/2.0 |
| Correct Answer(s): True |

7. ANGEL has the following available options for the instructor. Select all that apply.
   - A) Built in course gradebook.
   - B) Grade submission options to e.Lion.
   - C) Option to permanently delete students from the course roster.
   - D) The ability to view the course as a student.

| Points Earned | 5.0/5.0 |
| Correct Answer(s): A, B, D |

Figure 30: Assessment results displaying feedback

11. When finished reviewing the results, select the **Continue** button at the bottom of the page.
The Assessment Instructions page is now displayed, showing that this assessment has been completed. The screen also displays the time submitted, the number of points earned, and the assessment’s score.

<table>
<thead>
<tr>
<th>Instructions</th>
</tr>
</thead>
<tbody>
<tr>
<td>• This assessment is not tied to a gradebook assignment</td>
</tr>
<tr>
<td>• Maximum number of attempts: 1</td>
</tr>
<tr>
<td>• Time limit: Unlimited minutes</td>
</tr>
<tr>
<td>• Review mode: Full</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Submitted</th>
<th>Question Points</th>
<th>Submission Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/22/2013 11:39:00 AM</td>
<td>21 of 23</td>
<td>91.3%</td>
</tr>
<tr>
<td>Average</td>
<td></td>
<td>91.3%</td>
</tr>
</tbody>
</table>

Figure 31: Assessment results with completion confirmation

12. To exit the User Preview mode, click the **blue eyeglasses icon** by the user name in the upper right corner of the screen.

13. Click the **Cancel Preview** button without selecting any of the rights radio buttons.

To confirm that you have exited the User Preview tool, ensure that your name and the gray eyeglasses icon are now displayed in the upper right corner of the screen.

Figure 32: User Preview button displaying the user’s name
Appendix A: Summary of Best Practices

- In the Access tab, set User Tracking to Everyone so that a log can be generated of user id’s and access dates/times.
- When making selections in the Interaction tab, determine ahead of time how the user will interact with the assessment.
- If using dates under both the Access tab and the Interaction tab, ensure the start/end dates and times match under both tabs.
- When working in the Interaction tab, be aware that you cannot enable assessment navigation in the Display Settings and disable backtrack in the Question Set Defaults at the same time.
- Avoid randomizing the order of each question’s answer options in the Interaction tab, since this is typically not recommended in the testing literature. Some research suggests that randomization of answer options can result in differential difficulty, especially for lower performing students.
- In the Review tab, set View Submission History to Disabled until after the assessment has been completed.
- Complete the assessment using the User Preview tool in ANGEL before administering it to your students.
- When using the User Preview tool, answer questions correctly and incorrectly to ensure that both types of assessment feedback display correctly.
- Remember that it will typically take students four times as long to take the test as it takes you.
- Inform your students about the 90 minute ANGEL time out limit.
- If an assessment takes longer than 90 minutes, break up longer assessments into two or more individual assessments.
- If breaking up longer assessments, instruct students to take these assessments one after the other, or lock subsequent assessments using the Action Editor. When a subsequent assessment is locked, students are not able to take the subsequent assessments until the first assessment is submitted. See the IT Knowledge Base article “Lesson Item Settings: Action Settings Field” located at https://kb.its.psu.edu/cms/article/149/ for more information.
## Appendix B: Assessment Interaction Settings

### Table 1: Assessment Interaction Settings

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start Accepting Submissions</td>
<td>Sets the date the assessment is available to users.</td>
</tr>
<tr>
<td>Stop Accepting Submissions</td>
<td>Sets the date the assessment is no longer available to users.</td>
</tr>
</tbody>
</table>
| Display Mode                            | Sets how the assessment is viewed by users:

**All at once:** All questions are displayed on a single page.

**Question set at a time:** Questions are displayed one question set at a time. The user must click the Continue button to view the next set of questions associated with the assessment.

**Question at a time:** Questions are displayed one question at a time. The user must click the Continue button to view the next question.

**Show question titles:** Question titles are displayed with the question text.

**Enable Assessment Navigation:** Allows students to mark questions for review, sort by question or answers, and jump to any question. |
| Randomize the order in which questions are delivered | Randomizes the order in which questions are delivered. |
| Randomize the order of each question's answer options | Randomizes the order of each question's answer options. |
| Don't allow backtrack                     | Does not allow users to go back to previous questions or question sets. This option is only available when using the **Question set at a time** or the **Question at a time** display mode setting. |
| Display feedback after each question      | Sets feedback to display after each question is answered. This option is only available when using the **Question at a time** display mode setting. |
| Correct answer must be selected before next question is presented | Disables the assessment from advancing to the next question until the correct answer is selected. This option is only available when using the **Question at a time** display mode setting. |
| Mastery settings                         | The course editor specifies a percentage to represent mastery on the assessment. User scores equal to or higher than this percentage are considered to demonstrate mastery of the assessment and the user is denied access to retake the assessment. |
| Attempts allowed                         | Sets the number of times a user can complete the assessment.                                                                                   |
| Validation                               | Sets validation options:

- Do not allow incomplete submissions.
- Allow incomplete submissions with warning.
- Allow incomplete submissions without warning. |
<p>| Save option                              | Allows users to save their answers and finish the assessment at a later date/time.                                                            |</p>
<table>
<thead>
<tr>
<th>Field Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anonymous mode</td>
<td>Allows assessments to be completed and submitted anonymously.</td>
</tr>
<tr>
<td>Time Limit</td>
<td>Sets the amount of time allowed to complete the assessment.</td>
</tr>
<tr>
<td>Time Warning</td>
<td>Sets a time warning to remind users of how much time they have left to</td>
</tr>
<tr>
<td></td>
<td>complete the assessment. Time warning values can be set in increments of 1</td>
</tr>
<tr>
<td></td>
<td>minute to 30 minutes.</td>
</tr>
<tr>
<td>Automatically submit when time</td>
<td>Automatically submits the assessment, regardless of completion status,</td>
</tr>
<tr>
<td>limit expires</td>
<td>when the time has expired.</td>
</tr>
</tbody>
</table>
Appendix C: Question Types

Table 2: Pros and Cons of Selected Response Item Types

<table>
<thead>
<tr>
<th>Item type</th>
<th>Description</th>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
</table>
| Multiple choice | Question followed by a list of choices; one selection is allowed | • Great flexibility in assessing lower- and higher-order thinking  
• Can be used diagnostically to test misconceptions  
• Time-efficient administration  
• Fast and efficient scoring | • Difficult to assess effective constructs  
• Challenging and time consuming to write effective questions |
| Multiple select | Question followed by a list of choices; multiple selections are allowed | • Credit can be given for partial correctness  
• Increases amount and nature of content assessed in a single question | • Since there is more than one correct answer, students are less able to effectively use an elimination strategy  
• ANGEL does not indicate that an item is a multiple select item; this must be included in the question title or question text |
| Matching    | List of items and definitions to be matched     | • Effective when assessing definitions and relationships             | • Not well-suited for assessing higher order thinking  
• Correct matches may be evidence of guessing rather than understanding |
| True or false| Statement that is either true or false          | • Time-efficient administration and scoring  
• Effective when assessing misconceptions, cause-effect relations | • High probability of students guessing the correct answer          |
<p>| Ordering    | List of items that must be placed in the correct sequence | • Effective when assessing understanding of a critical sequence       | • Slight probability of students guessing the correct sequence       |</p>
<table>
<thead>
<tr>
<th>Item type</th>
<th>Description</th>
<th>Pros</th>
<th>Cons</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short answer</td>
<td>Question followed by a single line answer box; must be manually graded</td>
<td>• Good for testing higher order thinking</td>
<td>• Extra steps are required to ensure objectivity and consistency in scoring</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Makes it more difficult to guess</td>
<td>• Somewhat time-consuming to score</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Easy to write, relative to other item types</td>
<td></td>
</tr>
<tr>
<td>Essay</td>
<td>Question followed by a multi-line answer box; must be manually graded</td>
<td>• Excellent for testing higher order thinking</td>
<td>• Extra steps are required to ensure objectivity, and consistency in scoring</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Makes it more difficult to guess</td>
<td>• May put poor writers at a disadvantage</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Easy to write, relative to other item types</td>
<td>• Time-consuming to score</td>
</tr>
<tr>
<td>Fill in the blank</td>
<td>Question presented as text with blank spaces for the correct word or phrase to be filled in by the user</td>
<td>• Time-efficient administration and scoring</td>
<td>• If no word bank, test taker must know the one “right answer”</td>
</tr>
<tr>
<td>Algorithmic</td>
<td>Question automatically generated by mathematical formulas and variables</td>
<td>• Questions and answers are different for each assessment</td>
<td>• Can be difficult to create</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Scored automatically by ANGEL</td>
<td></td>
</tr>
</tbody>
</table>
Appendix D: Sample Assessment Questions

Question Type: Multiple Choice
- Question Title: ANGEL Best Practices
- Points: 5
- Question Text: What is a best practice for adding course content in ANGEL?
- Answer options
  - Promoting use status for class students
  - Filling out the two required fields in your course syllabus
  - Enabling user tracking
  - Making course groups open for everyone
- Correct answer: Enabling user tracking

Question Type: True or False
- Question Title: ANGEL Best Practices
- Points: 2
- Question Text: Short Answer, Fill in the Blank, and Offline items need to be manually graded.
- Correct answer: True

Question Type: Multiple Select
- Question Title: none
- Points: 5
- Question Text: ANGEL has the following options available for the instructor. Select all that apply.
- Answer Options
  - Built in course Gradebook
  - Grade submission options to eLion
  - Option to permanently delete students from the course roster
  - The ability to view the course as a student
- Correct answer: select all except for Option to permanently delete students from the course roster

Question Type: Multiple Choice
- Question Title: none
- Points: 5
- Question Text: Why would you preview an assessment from the Student view?
- Answer Options
  - To check if correct feedback is displayed
  - To check if the assessment is awarding the correct points
  - To check if the questions are displayed in the correct order
  - All of the above
- Correct answer: All of the above

Question Type: True or False
- Question Title: none
- Points: 2
- Question Text: Questions are added to a Question Pool so they can be copied into other assessments.
- Answer: True


ANGEL Knowledge Base https://kb.its.psu.edu/cms/

Penn State Learning Design Community Hub http://ets.tlt.psu.edu/learningdesign/

Penn State Learning Designers Yammer Group
https://www.yammer.com/psu.edu/#/threads/inGroup?type=in_group&feedId=220480

Teaching and Learning with Technology
http://tlt.psu.edu/2013/01/21/angelshorts-creating-assessments/
Technology Training Resources

Through ITS Training Services

Find face-to-face and online training workshops through Penn State ITS Training Services at
http://its.psu.edu/training/catalog/

Learn about Training On Demand (sessions upon request for groups of five or more) at
http://its.psu.edu/training/ondemand/

Explore thousands of free video tutorials that are available for self-paced learning at
http://lynda.psu.edu/

Take free Microsoft eLearning courses or find out more about free certification vouchers at
http://msitacademy.psu.edu/

Discover training news, fun tips, and session reminders via social media on
@psuITTraining (Twitter)
http://www.facebook.com/psuitstraining/ (Facebook)

Join one of our news lists to receive monthly email notification of all upcoming technology training opportunities, by sending a blank email to
L-TRAINING-NEWS-SUBSCRIBE-REQUEST@LISTS.PSU.EDU (Training News List)
L-FACULTY-TECHRTRAINING-SUBSCRIBE-REQUEST@LISTS.PSU.EDU (Faculty Training List)
L-CAMPUS-TECHRTRAINING-SUBSCRIBE-REQUEST@LISTS.PSU.EDU (Campus Training List)

Additional Technology Resources

Contact the IT Service Desk with general technology-related questions by emailing
ITSServiceDesk@psu.edu or call 814-865-4357 (HELP)

Search for technology-related information in the IT Knowledge Base at
http://kb.its.psu.edu/

Purchase discounted software or software licenses through Penn State at
http://software.psu.edu/

Access free online books about popular technology topics through the Penn State Libraries at
http://proquest.safaribooksonline.com/