Distributed Item Review

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Distributed Item Review (DIR)

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DIR Description and Purpose

A secure web-based system for presenting test items to expert reviewers across broad geographic regions so they can be evaluated for important dimensions of bias, sensitivity, and alignment with standards.
DIR Intended Audiences

• Content and Field Experts
• Education Researchers
• Education Leaders and Practitioners
• Test and Curriculum Developers

Recruited/sampled from targeted expert reviewer pools (i.e., local, state, regional, national)
Reviewer View

Example Review Study from Reviewer Login: Alignment of Grade 5 Science Items to Essentialized Standards

Note:
- Study Information (top)
- Navigable Item List (left)
- Support Resources (center)
- Reviewer Instructions (bottom)

Reviewer clicks Next to begin review.
Example Review Study from Reviewer Login: Non-secure Oregon Extended Assessment Practice Item

Note:
- Navigable Item List (top left)
- Support Resources (bottom left)
- Item (center, screenshot – see slide 14)
- Questions (bottom)
- Standards (bottom)

Reviewer clicks **Save and Continue** to save responses and move to next item.
Essential Features: Reviews

Reviews are administrator-defined based on a research study’s design and goals. Reviews frame:

- Subject (ELA, Math, or Science)
- Title
- Date (general descriptive)
- Start/End Dates
- Grade(s)
- Resources
- Review Instructions
- Email Notice Message
- Questions
- Review Questions
Essential Features: Reviews cont.

Example Review: Alignment Study of ELA Items from the Oregon Extended Assessment
Essential Features: Assignments

Assignments are housed inside reviews, and allow the administrator to:

- Bulk select and order items (and associated standards/images) by content area, grade, and other dimensions
- Select and designate reviewers
- Provide assignment-specific directions to reviewers
**Essential Features: Assignments cont.**

**Example Assignment:** Grade 5 Science Item Assignment for Steve and Shawn

<table>
<thead>
<tr>
<th>Review</th>
<th>Title</th>
<th>Closing Date</th>
<th>Edit</th>
<th>Delete</th>
</tr>
</thead>
<tbody>
<tr>
<td>OREx English Language Arts Items</td>
<td>All ELA Items</td>
<td>03/05/2016</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>OREx Science Items</td>
<td>Grade 5 Science Item Review</td>
<td>03/05/2016</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>OREx Science Items</td>
<td>Grade 8 Science Item Review</td>
<td>03/05/2016</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>OREx Science Items</td>
<td>Grade 11 Science Item Review</td>
<td>03/05/2016</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>OREx Math Items</td>
<td>Grade 3 Math Item Review</td>
<td>03/26/2016</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>OREx Math Items</td>
<td>Grade 4 Math Item Review</td>
<td>03/26/2016</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>OREx Math Items</td>
<td>Grade 5 Math Item Review</td>
<td>03/26/2016</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>OREx Math Items</td>
<td>Grade 6 Math Item Review</td>
<td>03/26/2016</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>OREx Math Items</td>
<td>Grade 7 Math Item Review</td>
<td>03/26/2016</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>OREx Math Items</td>
<td>Grade 8 Math Item Review</td>
<td>03/26/2016</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>OREx Math Items</td>
<td>Grade 11 Math Item Review</td>
<td>03/26/2016</td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

**Assignments / Edit**

- Review: Grade 5 Science Item Review
  - Title: Grade 5 Science Item Review
  - Description: Included in this assignment are 425 individual science items. Please review all items making sure to take breaks as necessary, so that you review each item carefully and completely.
  - Please write all comments and suggestions in the Comments window below each set of questions. Your comments are critical to help us make this item aligned to an essentialized standard when you rate an item alignment as a 5. Also, if you have any suggestions for making the item more accessible to students with significant cognitive disabilities, please include those in the
  - Reviewers:
    - Jones, Steve - steve.jones@yahoo.com
    - Glasgow, Aaron - aaron.glasgow@boston.edu
    - Costa, Trevor - trevor.costa@gmail.com
    - Meger, Ryan - ryan.meger@boston.edu
    - Invis, Shawn - shawn.invis@gmail.com
    - Azeez, Rachel - rachel.azeez@state.gov

**Items**

- **Assignment Items: (in order)**
  1. SSIPPH-1 1.2 L1
  2. SSIPPH-1 1.2L1
Essential Features: Items

*Diverse test item types* can be:

- Bulk uploaded into the DIR using .csv files
- Instantly associated (paired) with desired entities (e.g., standards, image files)
- Associated with specific reviews/assignments
Essential Features: **Items** cont.

To upload items in bulk, the *items File* must be in .csv format and contain the following columns in order (optional fields may be left blank):

- **Item ID** - Unique item identifier
- **Group** - (optional) Item group/task
- **Standards** - A colon-delimited set of standards
- **Item Information** - (optional) Scoring protocol and information
- **Prompt** - (optional) Item prompt text
- **Option A** - (optional) Response option A text
- **Option B** - (optional) Response option B text
- **Option C** - (optional) Response option C text
- **Correct** - (optional) Letter of correct response option (a, b, or c); ‘a’ is assumed to be correct if missing

To include images for items, the *Images Archive* must be an archive in .zip format containing the images. Item images must have a file name of the corresponding item ID, while item option images must have a file name of the corresponding Item ID followed by an underscore “_”, followed by the option letter. Accepted file formats are JPEG, PNG, GIF, and SVG.

Example: For an item with ID ‘123XYZ’, the following are valid image file names: 123XYZ.png, 123XYZ_a.png, 123XYZ_b.png, and 123XYZ_c.png.

- **Select .csv file containing relevant column headers**
- **Select zipped image folder containing image files to be paired with items** → **Linked by Item ID**
Essential Features: **Items** cont.

|   | A       | B       | C       | D       | E                                      | F                                      |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 1 | Item ID | Group   | Item    | Standards | Item Information                      | Prompt                                  |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 2 | M03OAT1.1_L04 | 3       | 1       | M03OAT1.1 | (L) Here is a feather on a hat. This hat has one feather. (Point to the student materials.) If you have one hat, how many feathers do you have: 1, 2, or 3? | If you have one hat, how many feathers do you have? |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 3 | M03OAT1.2_L04 | 3       | 2       | M03OAT1.2 | (L) There are 4 hats with a dashed line between them. (Point to student materials.) How many hats are on one side on the dashed line: 1, 2, or 3? | How many hats are on one side on the dashed line? |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 4 | M03OAT4.9_L02 | 3       | 3       | M03OAT4.9 | (L) There are some grapes. (Point to student materials.) How many grapes are there: 5, 6, or 7? | How many grapes are there? |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 5 | M03NBT1.2_L03 | 3       | 4       | M03NBT1.2 | (L) Here is an addition problem. (Point to student materials.) $6 + 8 = \ldots$ which number: 8, 10, or 14? | $6 + 8 = \ldots$? |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 6 | M03OAT1.2_M08 | 3       | 5       | M03OAT1.2 | (M) Here are two trees with some apples. (Point to student materials.) There are 8 apples all together. How many apples are on one tree: 4, 5, or 6? | How many apples are on one tree? |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 7 | M03OAT4.8_SAMPLE | 3       | 6       | M03OAT4.8 | (M) Here are 5 erasers. Sam has 5 erasers, but gives one to Hannah. (Point to student materials.) How many erasers does Sam have left: 1, 4, or 5? | How many erasers does Sam have left? |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 8 | M03NBT1.3_M07 | 3       | 7       | M03NBT1.3 | (M) Here is a multiplication problem. (Point to student materials.) $3 \times 2 = \ldots$ which number: 2, 3, or 6? | $3 \times 2 = \ldots$? |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| 9 | M03NOF1.1_M05 | 3       | 8       | M03NOF1.1 | (M) Here is a puddle with 10 ducks. (Point to student materials.) Five of the ducks have spots. What portion of the ducks has spots: 0, 1/2, or 1? | What portion of the ducks has spots? |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |

.csv column headers for bulk upload e.g., Math item bulk upload
Essential Features: **Items** cont.

**Key Considerations:**

1. **Item IDs** *must* be both unique and informative – Ideally linked to both standards and image files
   For example, from the Oregon Extended Assessment,
   Item ID **S05ESS1.1H14** indicates:
   Science content area (S), Grade 5 (05), Earth/Space Science Essentialized Standard 1.1 (ESS1.1), Hard complexity (H), and Item #14 written to standard ESS 1.1 (14)

2. **Items can be created by populating some/all of .csv**
   For example, items can be built through the .csv (see slides 12-13), or by populating Item ID/Standard columns and bulk uploading image files (e.g., screenshots) of items with file names matched to Item IDs
Essential Features: **Standards**

*Diverse standard types* can be:

- Bulk uploaded into the DIR using .csv files
- Instantly associated (paired) with test items (using the item .csv – see slides 11-14)

Select .csv file containing relevant column headers

`.csv` column headers for bulk upload

- **Standard ID** and **Subject Req’d**
### Essential Features: Standards cont.

<table>
<thead>
<tr>
<th>Standard ID</th>
<th>Subject</th>
<th>Domain</th>
</tr>
</thead>
<tbody>
<tr>
<td>M03GEO1.1</td>
<td>math</td>
<td>Use attributes of triangles, squares, and circles to classify shapes.</td>
</tr>
<tr>
<td>M03GEO1.2</td>
<td>math</td>
<td>Use unit squares to determine 1/2 or the whole.</td>
</tr>
</tbody>
</table>

.L - identify triangles (all shapes in answer choices same-size); M - identify squares (shapes in answer choices of various sizes); H - identify circles (shapes in answer choices of various sizes).

.L - use unit squares to identify whole areas shaded up to 2x2; M - use unit squares to identify whole or 1/2 areas shaded up to 3x3 (with shading done only one side); H - use unit squares to identify whole areas shaded up to 4x4 or 1/2 of any square figure up to 4x4 (with shading done on diagonals).
Essential Features: Questions

- Customizable *review questions* allow test items to be reviewed for important dimensions of *bias, sensitivity, and alignment with standards*

- Current response option formats include:
  - Yes/No
  - Numeric (Likert rating scale)
  - Text Box
  - Comment
Essential Features: Questions cont.

**Example Review Question:**
Alignment to standards rating, with 3-point Likert Scale Response Format

<table>
<thead>
<tr>
<th>Type</th>
<th>Text</th>
<th>Format</th>
<th>Edit</th>
<th>Delete</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>Rate the strength of alignment between the test item and standard/s.</td>
<td>Numeric</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item</td>
<td>Item is Free of Bias</td>
<td>Boolean</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Item</td>
<td>Item is Accessible to SPED Students</td>
<td>Boolean</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>#</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Not Aligned</td>
</tr>
<tr>
<td>1</td>
<td>Somewhat Aligned</td>
</tr>
<tr>
<td>2</td>
<td>Aligned</td>
</tr>
</tbody>
</table>
Essential Features: Resources

*Diverse Resources* pertinent to research study can be uploaded, described for reviewers, and associated with reviews (see slides 5-8)

- **PDFs** (e.g., training slides, academic content standards, state accessibility manual)
- **Word documents** (e.g., item-building template)
- **Videos** (e.g., reviewer training webinars, representative testing population)
- **Image files** (e.g., standard essentialization flow chart)
Essential Features: Resources cont.

Example Video Resource: Representative Student Population for Oregon Extended Assessment
Essential Features: Reports

Download .csv file for statistical analysis (e.g., Excel, SPSS, R)

View web report for a “quick view” of reviewer progress and review completeness
Sample (Practice) Test

For the Oregon Extended Assessment, *InDesign* templates create Scoring Protocol for test booklets for administrators (top left), and Student Materials test booklets for students (bottom right).
DIR User Guide

• DIR Technical Manual and User Guide is in preparation, to be completed Spring 2016, and posted to the BRT website:
  http://www.brtprojects.org/publications/technical-reports
  • Detailed information on DIR system
  • Step-by-step administrator’s guide to creating and conducting item/test reviews

• This presentation posted:
  http://www.brtprojects.org/publications/presentations
DIR System

http://brtitemreview.com

Also found at:

http://www.brtprojects.org/labs
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