



Item Development

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Proficiency Definitions: Advanced

- Ability to move fluidly within and between technologies in order to optimize various technologies' potential
- Selection of most appropriate form of AT for a given task
- Self-advocacy regarding technology choices



Proficiency Definitions: Proficient

- Can use the technology independently
- Can use the technology to perform at grade level:
 - visual and tactile readers decode and read words fluently enough to understand what was written
 - audio readers comprehend and retain heard text
- Understands the basic functions of a technology (e.g., how to work a CCTV)



Proficiency Definitions: Below Proficient

- Student needs help from teacher, gets stuck with the technology



Test Development - ECD

- Evidence Models
- Task Models*
- Task Shells
- Assembly Models*
- Scoring Models or Rubrics

*Not discussed in this presentation



Evidence Model

- Describe Observable Features
- What observable features would characterize work products from someone who is at, above, or below some category of proficiency in this skill or ability?



Preliminary Sample Task Shells and Scoring Rubrics

- To be refined with results of student and Adult AT-user observations
- **One challenge:** to provide real-world-relevant tasks that allow for demonstration of varying levels of proficiency and permit field-scoring.



Preliminary Sample Task Shells and Scoring Rubrics

- Scoring must take into account fact that student may need assistance with some portions of task in order to show proficiency with others (e.g. has difficulty opening a document, but once it is opened for them, they can navigate it).
- For field-scoring, cannot assume trained raters
- Analytic scoring rubrics can make this possible



Sample Task Type: Locate Information in Document

- **Observable Feature**
 - Ability to locate material in a document based on its description
- **Advanced Proficient**
 - Examinee independently and efficiently performs all steps needed to locate correct material, including mindful selection of appropriate AT



Sample Task Type: Locate Information in Document

- **Observable Feature**
 - Ability to locate material in a document based on its description
- **Proficient**
 - Examinee independently, but not always efficiently, successfully, performs most steps needed to locate correct or near-correct material
- **Below Proficient**
 - Examinee has difficulty with several of the steps needed to locate correct material



Task Shell

- **Content Focus**
 - Locating Described Information using AT
- **Fixed Elements**
 - A document (or a link to it) is provided.
 - Examinee is asked to use the document with AT to locate specific information in that document and show the examiner that they have located the information
- **Variable Elements**
 - The type of document content
 - The format of the document
 - How document is provided



Task Shell: Variable Elements

- **Content Variants**

- Material from textbook, e.g. writing style manual, grammar instruction
- Material from grade-level literature, e.g. fiction, poetry, essay



Task Shell: Variable Elements

- **Format Variants**
 - PDF document (text-based)
 - PDF document (scanned, no text inside)
 - Printed document (regular print) - could be a bound book
 - Word document
 - HTML document or URL
 - DAISY book



Task Shell: Variable Elements

- **Document Presentation Variants (electronic only)**
 - Pre-loaded onto hard drive
 - Handed to examinee on CD, Floppy, USB stick
 - As e-mail attachment
 - As URL



Sample Locate Text Task

- A document is provided: “Murphy” (see Handout 1)
- Prompt: In the essay “Murphy,” locate and describe or point out the place in the text that most clearly reveals the author’s inability to train Murphy.



Variable Elements

- **Format Variant:**
 - Word document
- **Presentation Variant:**
 - Document supplied on CD
- **Content Variant:**
 - Grade-level essay



Task Script

See Handout 2



Scoring Model - General

- Select assistive technology to use for task
- Use the assistive technology to access the document
- Use standard features of the AT
- Use AT to perform the task
- Answer the question posed by the task



Scoring Rubric: Locate Text Item Type

- For each task component, describe features of high, medium, and low score levels.
- Score levels do not necessarily map to Advanced Proficient, Proficient, Below Proficient, but contribute to determining those ratings.



Select AT and Explain Selection

- **High Level:** Student makes an independent selection of an appropriate form of AT and can provide a brief, cogent explanation for the selection. For example, a student with no usable vision should select a text-to-speech device or one that can provide refreshable braille. Examples of acceptable explanations: “so I can listen to the text” or “so I can read it in braille.”
 - Prompting is acceptable so long as it is not directive. Acceptable prompt: “You chose X. What does it allow you to do?”
Unacceptable prompt: “Would you like to use JAWS for this?”
- A High-level rating on this feature contributes to an Advanced Proficient rating



Select AT and Explain Selection

- **Medium Level:** Student independently selects a usable but not optimal form of AT for the task, or selects an appropriate form with assistance or selects a usable or even optimal form but can't give a strong explanation for the selection - "because I do everything with this" or "because that's what my teacher told me to use." Non-directive prompting after receiving such a response is acceptable and an appropriate reply might result in the higher rating.
- Should a medium level on this component contribute to an Advanced Proficient rating?



Select AT and Explain Selection

- **Low Level:** Student cannot select an appropriate form of AT, and asks teacher what to use (or, not making a selection, has one made for them by the teacher).
- A low level on this component precludes an Advanced Proficient rating for this task.



Use AT to Access Document

- **High Level:** Student independently accesses the document using the AT (upon being told the filename and location, if electronic, or being handed the material and told which side is “up”, if hardcopy).



Access Document with AT

- **Medium Level:** Student successfully accesses the document using the AT with some prompting or guidance.
- **Low Level:** Student needs detailed step-by-step help to access the document with the AT.



Use Standard Features of the AT

- **High Level:** Independently adjusts speed and volume of voice, magnification level of software magnifier or CCTV, or relevant features of refreshable braille; uses basic navigation techniques to move through the material.
- **Medium Level:** Does the above, but requires minimal prompting or assistance.
- **Low Level:** Needs frequent assistance to adjust the AT and use it to move through the material.



Use AT to locate information in the Document

- **High Level:** Independently uses efficient methods for locating text relevant to the task.
- **Medium Level:** Independently uses less efficient methods to locate text relevant to the task.
- **Low Level:** Unable to locate text relevant to the task.



Identify Correct Text

- **High Level:** Clearly indicates any of the correct portions of text specified for the individual item.
- **Medium Level:** Clearly indicates any of the portions of text indicated for the item as “second best” or provides a vague but basically correct indication (e.g. “the parts where the dog misbehaved.”)
- **Low Level:** Fails to indicate any specific text or recognizable material that would constitute an appropriate response: “I can’t find it” or “The whole thing” or “somewhere near the end” (Note: it is acceptable to prompt in a non-directive way for more info on a “somewhere near the end” response (“could you show me the exact place?”), and award higher score based on the reply.)



Item-Level Notes

- The “best” portion of the passage is the second paragraph (“Murphy was the first dog I ever trained personally...”)
- The “second best” portion is the third paragraph (“He had another habit ...”)



Next Steps

- Refine models and scoring rubrics based on feedback and results of observational interviews.
- Determine how best to translate scores into proficiency levels.
- Determine proficiencies for which to report subscores.
- Create additional task shells for other types of tasks.



Questions for TAC (1)

- Should we include tasks best performed with multiple forms of AT and assess selection and switching?
- Is it possible (for us, for teacher administering test) to determine what is the most optimal form of AT to use for a given task (for a given student)?
 - Does asking student to explain selection help?



Questions for TAC (2)

- For a given task, can what counts as an “efficient method” be predetermined by us or determined at test-time by the teacher?



Questions for TAC (3)

- Or is a model where the student has to give an explanation for how they did it and why they did it that way preferable?
- Alternatively, does it help to measure how long it takes to do the task?
 - If we tried that, how could it be normed?