# E-Learning Project Final Report:

# Evidence-Based Writing for the Academic Literacy Skills Test

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## Digital Prototype

The digital prototype for the e-learning module, *Passing the Academic Literacy Skills Test: The Extended-Response Item*, is publicly accessible at the following address: http://kaceywochna.com/569prototype/

## Design and Development Process

### Overview

My instructional design process throughout this project was heavily influenced by intermediate course deadlines and weekly assignments. First, I completed a goal and subskill analysis for my topic in order to better grasp how the task could be broken down into topics and taught via e-learning. Then I created all of the instructional content. The visual design of the course was based largely on the nature of that created content. I began testing my development tool at this time, and some revisions to the content were made based on what did and did not seem feasible given the development tool I had chosen. Development began only after virtually all content and storyboarding had been completed.

The digital prototype is in most respects true to the design documented in the paper prototype, the major exception being a handful of slides that needed to be broken into multiple slides once I realized the constraints on how much material could reasonably be presented on a single slide.

### Successes

One success was discovering an effective way to discuss the composition of an argument. At the beginning of the project, I did not have a clear idea of how to explain or teach this concept, but through research and brainstorming, I was able to devise a coherent, accessible approach to this problem. Another success was implementing some recently learned steps of the instructional design process to better design the project. I completed a goal/subskill analysis in order to determine how to break the task of writing an argument into manageable and logical steps, and I found this process immensely helpful. Additionally, building my first e-learning module and having it function properly and look decent feels like a considerable success.

### Challenges

The predominant challenge was the timeline for this project. I took on a larger topic than was necessary for the assignment because I wanted to create a product that could be readily used. Although I believe that I did have more time to devote to the project than some of my peers, completing a project of this size in less than eight weeks was incredibly demanding and I was at times thinly stretched. Fortunately, the early emphasis on project management did help me to manage my time better than I typically do, otherwise this project could not have been completed

on time. Both the design and development phases of the project were challenging in this regard, although this emphasized the amount of work required for each of these phases.

Another large challenge was finding ways to make the module interactive and to include relevant assessments without a human grader. Given that the topic is essay writing, a task that would typically be both taught and assessed by a human, it was not immediately clear whether I would be able to create meaningful practice. However, by breaking the module into steps, I was able to use more concrete practice exercises for the earlier, less sophisticated steps and then gradually increase the complexity of the exercises and the burden on the learner to self-evaluate.

**Course Aids**

Creating a Gantt chart early in the semester was a very beneficial exercise for me. I had never made one before so that exercise also meant learning a new skill. This was stressful at the time, but the act of making the chart forced me to face the demanding project schedule I would need to adopt in order to complete the project successfully. Although I did not stick to my original schedule, without that initial planning I undoubtedly would have managed my time more poorly.

**Peers**

It was helpful to receive feedback from peers throughout the course, especially because it encouraged us to not be so protective of our work. Posting work for peer feedback was a good demonstration of how sharing your ideas with others while they are still being formed allows you to make changes that otherwise might get set in stone by simply by virtue of going unevaluated until later in the design process. I also appreciated the opportunity to practice evaluating design and giving critical feedback to my peers.

**Lessons Learned**

This project was the first time in this program that I have had the opportunity to design and develop a complete instructional module independently. I learned a great deal about project management and about the all of the steps of the instructional design process from being solely responsible for all the components of the project. After completing this project, I feel much more secure in my ability to work on major instructional design projects. I also learned general design principles, including visual design, which I expect will be continually useful to me going forward.

Although building this project with a popular commercial tool, Captivate, presented many challenges, including a steep learning curve, I am glad that I took this opportunity to learn this software and I feel that the experience will be beneficial in my future job search. I plan to continue learning how to make the most of Captivate's functionality and have found a tool I will return to again.

## Formative Evaluation

### Results

The prototype was evaluated by three users over the course of development. Many issues identified during these usability tests have been corrected in the final digital prototype, including numerous small flaws not mentioned here.

The color scheme and fonts were altered based on feedback from an early test. In later evaluations, testers commented that they liked the general aesthetic. Testers particularly liked the handwriting font used to illustrate examples of handwritten notes.

The general navigation of the module is straightforward, and testers had no issue beginning the course or using the basic forward and backward navigation buttons. Only a few navigation problems emerged.

All slides, including quiz question slides, feature the forward and backward buttons, to allow questions to be skipped as desired. On one occasion, a tester hit the forward navigation button when he intended to submit his quiz answer. These buttons are next to each other, and the confusion is understandable given that the forward button is normally how one advances from the slide. This issue could be corrected by making the submit button more prominent, which would deviate from the current aesthetic, or by eliminating the forward navigation button, which would decrease navigational flexibility. It is unclear which solution would be preferable, and thus no revision is planned at this time.

Two testers failed to explore the unopened tabs on the first tab slide. One of these failures was after the tabs were altered to look and function more like tabbed folders. With some alterations to the slide, it would be possible to include explicit instructions to use the tabs, but this change has not been made in this version of the prototype.

Early testers unfailingly attempted to close the expanding example windows, which originally could only be opened. Although there is no functional reason to close them again, the instinct to close the windows was so strong that these testers persisted in trying to close them even after they had determined that it was not possible to do so. To satisfy this instinct, the buttons were altered to allow the windows to close when clicked a second time.

Testers, including one professor of writing and one college student had very positive comments about the instructional content of the module. They reported that the explanations and examples were clear and appropriate, and that the exercises were engaging and adequately scaffolded. All testers took time to consider the questions included throughout the module even when they did not have to input an answer.

### Planned Revisions

One tester identified that the initial example used to introduce the concept of warrants features an inferred warrant. While more common than stated warrants, inferred warrants are more complex. The user suggested starting with a stated warrant in order to more gradually introduce students to the concept. Although I was unable to revise these slides in this prototype, I agree that this would improve the instructional quality of the topic and plan to implement this change at a later time.

One revision that was not realized in this version of the prototype was reformatting the collapsible menu. At present, the icon to open the menu is very small, and not all testers noticed

the presence of the icon without being prompted to find the menu. The development tool did not permit easy editing of how this menu was opened and closed, and there was not time to reconfigure this manually. Instead, a note was added to the end of the module to be sure that users looking to review the material could access the menu.

The paper prototype including a slide about the ALST that was not developed due to timing, but which will be added to a later version.

## Self-Evaluation Using Merrill's 5 Star Instructional Design Rating

**Type of Instruction**: Tutorial

| Stage | Criteria | Explanation |
|---|---|---|
| PROBLEM<br>Is the courseware presented in the context of real world problems? | Does the courseware show learners the task they will be able to do or the problem they will be able to solve as a result of completing a module or course? | Course is on passing an independent exam, so authenticity of the instruction is limited by the authenticity of the exam, but exam question are presented realistically and students work with increasingly complex versions of the problem. |
| | Are students engaged at the problem or task level not just the operation or action levels? | |
| | Does the courseware involve a progression of problems rather than a single problem? | |
| RATING FOR PROBLEM STAGE: Silver | | |
| ACTIVATION<br>Does the courseware attempt to activate relevant prior knowledge or experience? | Does the courseware direct learners to recall, relate, describe, or apply knowledge from relevant past experience that can be used as a foundation for new knowledge? | Course assumes a low level of experience but does make attempts to activate prior knowledge (e.g., connecting concepts to thesis statements, a concept students are likely to be familiar with). Course does provide examples to use as foundation for new knowledge. |
| | Does the courseware provide relevant experience that can be used as a foundation for the new knowledge? | |

| Stage | Criteria | Explanation |
|---|---|---|
| | If learners already know some of the content are they given an opportunity to demonstrate their previously acquired knowledge or skill. | |
| RATING FOR ACTIVATION STAGE: Bronze | | |
| DEMONSTRATION<br>Are the demonstrations (examples) consistent with the content being taught? | Are the demonstrations (examples) consistent with the content being taught?<br>• Examples and non-examples for concepts?<br>• Demonstrations for procedures?<br>• Visualizations for processes?<br>• Modeling for behavior? | Demonstrations are highly consistent with content. Course depends entirely on textual representations, but subject itself is also heavily textual and thus media is relevant and provides appropriate practice. Examples and non-examples, as well as static demonstrations, are used. |
| | Are at least some of the following learner guidance techniques employed?<br>• Learners are directed to relevant information?<br>• Multiple representations are used for the demonstrations?<br>• Multiple demonstrations are explicitly compared? | |
| | Is media relevant to the content and used to enhance learning? | |
| RATING FOR DEMONSTRATION STAGE: Silver | | |

| Stage | Criteria | Explanation |
|---|---|---|
| APPLICATION<br>Are the application (practice) and the posttest consistent with the stated or implied objectives? | Are the application (practice) and the posttest consistent with the stated or implied objectives?<br>• Information-about practice requires learners to recall or recognize information.<br>• Parts-of practice requires the learners to locate, name, and/or describe each part.<br>• Kinds-of practice requires learners to identify new examples of each kind.<br>• How-to practice requires learners to do the procedure.<br>• What-happens practice requires learners to predict a consequence of a process given conditions, or to find faulted conditions given an unexpected consequence. | Practice and posttest are consistent with objectives. First four types of practice are represented. Feedback is not ideal, as best feedback would require a human evaluator. Course is entirely standalone and will not be monitored once deployed, so using a human grader was not possible. Learners must instead self-evaluate using rubrics and examples. Earlier practice is more structured and detailed feedback can be given, and in that regard, coaching is gradually diminished. |
| | Does the courseware require learners to use new knowledge or skill to solve a varied sequence of problems and do learners receive corrective feedback on their performance? | |
| | In most application or practice activities, are learners able to access context sensitive help or guidance when having difficulty with the instructional materials? Is this coaching gradually diminished as the instruction progresses? | |
| **RATING FOR APPLICATION STAGE: Silver** | | |
| **INTEGRATION**<br>Does the courseware provide techniques that encourage learners to integrate (transfer) the new knowledge or skill into their everyday life? | Does the courseware provide an opportunity for learners to publicly demonstrate their new knowledge or skill? | Course is designed for a specific one-time task. Skills taught are generally applicable to everyday life, but the course does not explicitly encourage this |

| Stage | Criteria | Explanation |
|---|---|---|
| | Does the courseware provide an opportunity for learners to reflect-on, discuss, and defend their new knowledge or skill? | transfer. This is a longterm goal for the project, but given limited resources, ensuring performance on the intended task was prioritized over encouraging broader transfer and integration. |
| | Does the courseware provide an opportunity for learners to create, invent, or explore new and personal ways to use their new knowledge or skill? | |
| **RATING FOR INTEGRATION STAGE: No Star** | | |

## References

Merrill, M. D. (2001). Five star instructional design rating.