**INITIAL PAPER PROTOTYPE**
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# ESL Beginner's Console

# Table of Contents

# Subject, Context, Learners, Technology and Learning Objectives

## A. Subject and Learning Context

The purpose of this set of mini-lessons is to familiarize beginner-level English learners with the meaning, pronunciation, and spelling of a set of a dozen or so each of basic nouns, verbs and adjectives in common contexts. The need for English language education is clear, as English remains the world's language in the sense that it is still the language that is spoken most often when two people from different cultures must communicate. There continues to be steady demand for learning it. The benefit of this project is that it will provide learners a way to learn new words, practice spelling and pronouncing them, and practice describing pictures with user feedback. The tasks will be presented in order of difficulty. For example, learners will first practice dragging words onto their corresponding pictures with the dropzones highlighted, and only upon success will they be tasked with dragging and dropping without this hint. Similarly, learners will not be asked to type words from memory before they have practiced typing them with the written words on screen. The module will be accessible via most web browsers, provided learners have the link to the module which will be hosted on Amazon web server. It will thus be accessible anywhere, anytime, on many devices, with feedback, and for free. I determined this need over the past decade as I have taught ESL classes and created curriculum for primary, secondary and university students. I have data from student homework, quizzes, tests, audio/video recording projects, and first-hand editing and scoring of written work and role-plays. I also have used several popular ESL textbooks used by Korean elementary students to learn English. I am a big believer in independent and online study, not only because it can be done anywhere, anytime, at the learner's pace, but also because it provides shy students a way to learn without the fear of failure and embarrassment that is inherent in classroom settings or with a teacher.

### Project Scope

This module is comprised of three submodules: 1) Nine transportation nouns, 2) Eight basic verbs and corresponding sentences, and 3) Verbs and basic nouns in context. The words were chosen based on the 1000 or so most commonly used words in English. I added some words to the modes of transportation category, for example 'helicopter', 'chopper', 'rocket' and 'spaceship' to make it more complete and for engagement purposes. A preview of several lesson and task prototypes can be seen here for reference: https://www.avimegiddo.com/sandbox. Transportation nouns will be introduced in a short video. Silhouettes have been chosen to introduce the words as they may reduce cognitive load. Verbs will be presented with narrated flashcards. Verbs and nouns in context will be taught with narrated scenes. Learners will engage in several types of scaffolded exercises and assessments, including dragging and dropping words onto their pictures, typing words (first with and then without visual hints), and describing scenes by filling in blanks in sentences with the correct words.

### User Interface

The User Interface(UI) scope includes an HTML console/menu consisting of lessons and quizzes created by publishing a PowerPoint presentation as HTML5 with iSpring Converter Pro. The look and feel of individual interactive components is defined by H5P web objects embedded in the presentation, in a single CSS stylesheet. These web objects provide many interaction types for quizzing, including drag and drop, drag text, fill in the blank (typing), and hotspots.

## B. Target Learners and their Attributes

Target learners will be either beginner to intermediate ESL/EFL elementary school students accompanied by an English-speaking adult. While instruction will be simplified as much as possible to facilitate task comprehension, an adult with at least an intermediate level of English fluency can ensure the target learners understand what they are supposed to do. While their prior knowledge may be varied, they should be considered beginners according to standard level testing. I am very familiar with this learner demographic as I have taught them for about a decade in Seoul, South Korea. Specifically, in ESL beginner and intermediate level listening and speaking classes. I have first-hand experience teaching elementary and middle schoolers who, while younger, started at a higher average level of English fluency, but may lack computer skills such as typing, manipulating a mouse to navigate a software application, and understanding what icons such as 'home', 'menu', and 'check' represent.

## C. Method of Delivery

This is a self-paced web-based module. Instructions are narrated as well as written on screen. A Bitmoji character acts a virtual mentor who provides narrated instructions, feedback, and reinforcement.

### Technologies

This is a web-based e-Learning module hosted on my site. It will (hopefully) be mobile-friendly (tablets and larger smart phones). I am very enthusiastic about the possibilities of H5P interactive video/presentation. I had a positive experience with my first such video, first creating the wrapper video with Camtasia, saving as .MP4 and importing it to the H5P WordPress plugin. I considered using the 'Presentation' content type in H5P as the console. However, this approach is not quite robust enough to allow modular development. I have settled on creating the main console with PowerPoint, and embedding the interactive web objects and publishing it as HTML5 with iSpring Converter Pro.

### Access

I will host the module on my site (website server) so it will be usable anywhere, anytime, and on many devices. Assessment and feedback will happen automatically for each quiz by the H5P

plugin.  To access the module, users will simply need a URL.  The module may be shared by word of mouth, through social media, accessed by a teacher/tutor, emailed by an instructor to a parent, or simply found via internet search such as "ESL beginner quizzes".  Login, saving progress across sessions, and reporting overall scores across quizzes are unfortunately out of scope.

## D.  Learning objectives

I have selected Mager's (1997) style for describing the learning objectives for this module.  Given significant time spent with my module, I want my learners to master a set of X English nouns and associated verbs and adjectives well enough that they can recognize, recall, spell, and perhaps recite/speak/pronounce them both within the lesson and in real world situations such as a classroom or in conversation.

The terminal objective of this project is for my learners to master the set of words (identify, be able to type and possibly recite, and associate them with corresponding verbs and adjectives them in a real-world context such as a language class or in dialogue/conversation.  Improvement will be assessed by the supervising adult.  Learners can repeat sections until they complete them with the accuracy deemed satisfactory by said adult.  There is no login, and I have not tied user data to an LRS (Learning Record Store) or any kind of persistent database.  Learners will expand their English lexicon/vocabulary such that they can:

1. Upon viewing an instructional presentation, associate 9 modes of transport noun images with their written form (14 total words including synonyms) at 100% accuracy.

2. Upon completion of a scaffolded exercise, spell/type 9 modes of transport nouns with 80% accuracy.

3. Given time spent with instructional materials (narrated digital flashcards), associate 16 basic verbs with their written form with 100% accuracy.

4. Upon completion of a scaffolded exercise, spell/type 16 basic verbs given their image with 80% accuracy.

5. Upon viewing an instructional presentation, and given a set of sentences describing a scene, deduce the correct placement of lesson verbs and basic nouns in sentences with 100% accuracy.

6. Upon completion of a scaffolded exercise, and given a set of sentences describing a scene, type the correct lesson verbs and basic nouns in sentences with 100% accuracy.

### Entry Skills / Prerequisite Knowledge

Learners should know the English alphabet and what sounds each letter or letter combination makes when spoken. They may need to know very basic vocabulary in English (i.e. first 50-100 words) but may not be great at reading, spelling, typing, hearing, and/or speaking them. Given their age, they will likely be accompanied by an English-speaking adult.

### Conditions for learning

The conditions for learning have been described based on Horton's (2012) questions. Learners will learn from any internet-enabled device that is the size of a tablet or larger. They have unlimited time for learning, as this is a self-paced module. The environment is hopefully not too busy or distracting. While the target learner need not be a "digital native" they should not be "digitally naïve" (Horton, 2012). Learners will need to know how to use a mouse or their finger to select activities, and to drag and drop words onto pictures. They will also need rudimentary typing ability (be able to find letters on the keyboard and realize that pressing them results in them appearing on screen where the cursor is located).

### Assessing learner mastery

Since this is an online module with no instructor, it will be hard to formally assess mastery with any kind of supervision or human assessment. This is another reason for the accompanying adult, who may be a teacher, tutor or parent. The H5P interactive content checks accuracy of user input, and it is up to content developers to choose the frequency of this feedback. I have chosen to enable "Retry", as the purpose of the lesson is to provide practice and feedback, not a formal assessment like a test with a score for a grade. I have chosen to disable the "Show solutions" button as it is too tempting for younger learners to just press it and see the answers instead of making an attempt. For the same reason, I have enabled the behavior setting which requires all fields to be answered before the solution can be viewed. For assessing spelling, it seems logical to provide instant feedback, i.e. automatically check answers after input.

Aside from the H5P assessments, mastery will be self-assessed by learners, dependent on their level of completion of the module. I plan to add a link to a certificate of completion which learners can print out only if they have completed the module. I also plan to embed a link to a Google Forms survey which will ask self-assessment and module evaluation questions. This will act as a sort of meta-cognition exercise, in which learners will assess their own mastery.

*Assessment methods*: The H5P Software assesses accuracy automatically, and learning designers can decide whether feedback is given automatically after each question in a set of exercises, or after the set is completed. Designers can also set the pass/fail rate. I have chosen a 100% accuracy bar for drag and drop activities, and 80% accuracy for typing, as it may frustrate young users to try to achieve 100% on the more challenging typing exercises.

### Scaffolding

Learners are likely to struggle in several ways while interacting with the module. First, they may be confused initially in terms of what to click on. While each sub-module is linear/sequential, the overall lesson is not. It is intentionally flexible to accommodate several levels of fluency. However, this flexibility may cause some learners to feel lost. Scaffolding will be provided in the form of a help button, represented by a Bitmoji character with a question mark (see Figure 1).
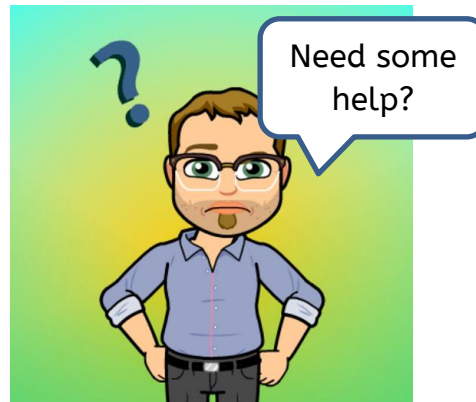


Figure 1: Bitmoji mentor character

Learners may also struggle when trying to complete tasks without hints. In anticipation of such struggles, the back button has been enabled on all slides to allow learners to reference preceding tasks which are similar in structure and which have hints, such as highlighted drop zones, or written cues. Since learners have only a rudimentary knowledge of English, instructions need to be kept to a minimum. Simple instructions such as "Which words describe this image?", "What is happening in the picture?", "Drag the right words onto the image", "Type the words that are right/true for this image" "Speak/say the words for this image". They will learn the meaning of the words. Some H5P content types allow audio instruction, and where possible, I will include audio instruction as part of the console. Learners will need to understand at least one form of simple English instructions (written or spoken), as many ESL applications employ. For example, "click on the ___ " will be written and spoken. If they do not understand, the accompanying adult will need to explain the task at hand in the target learner's native language.

### Technical Assistance

Audio narration will be provided as an aid to written on-screen instruction. Should learners realize they are unable to complete even the most basic activities in the module, they can click on a menu of prerequisite resources that are easier. Learners who complete the entire lesson will also be directed to this resource menu, but to more challenging curriculum should they want to continue practicing. Finally, as mentioned, learners can click on the Bitmoji help character if they are unsure how to proceed with an activity or scree

**Site Map:** Figure 2 is a sitemap of the module. It shows how each submodule is accessed from the main menu.
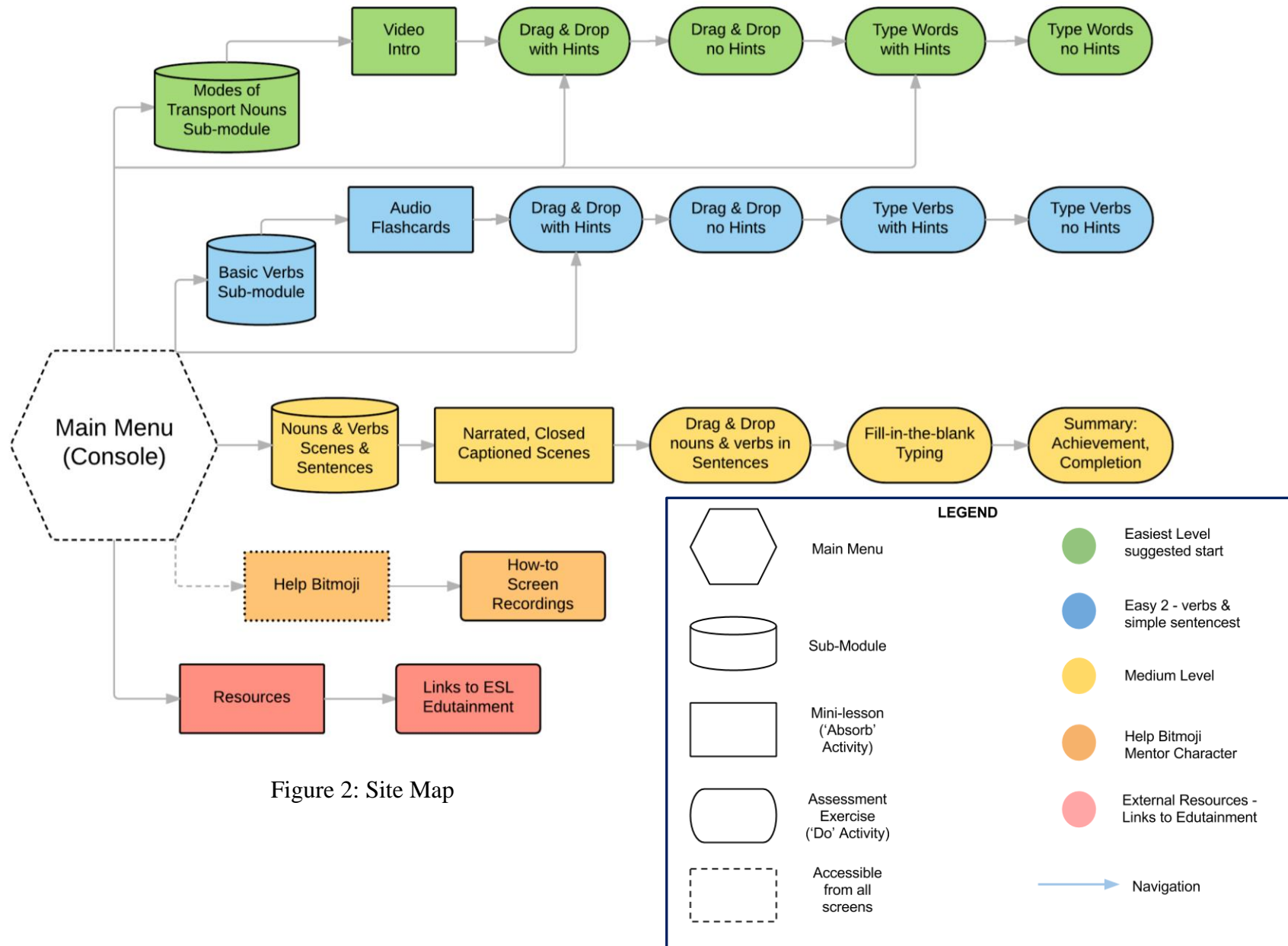


Figure 2: Site Map

## Wireframe

This is the intended landing page of the module (see Figure 3). It is the main menu, and the page to which learners are directed upon completing submodules. Here is a link to the wireframe, which is explained in more detail below.
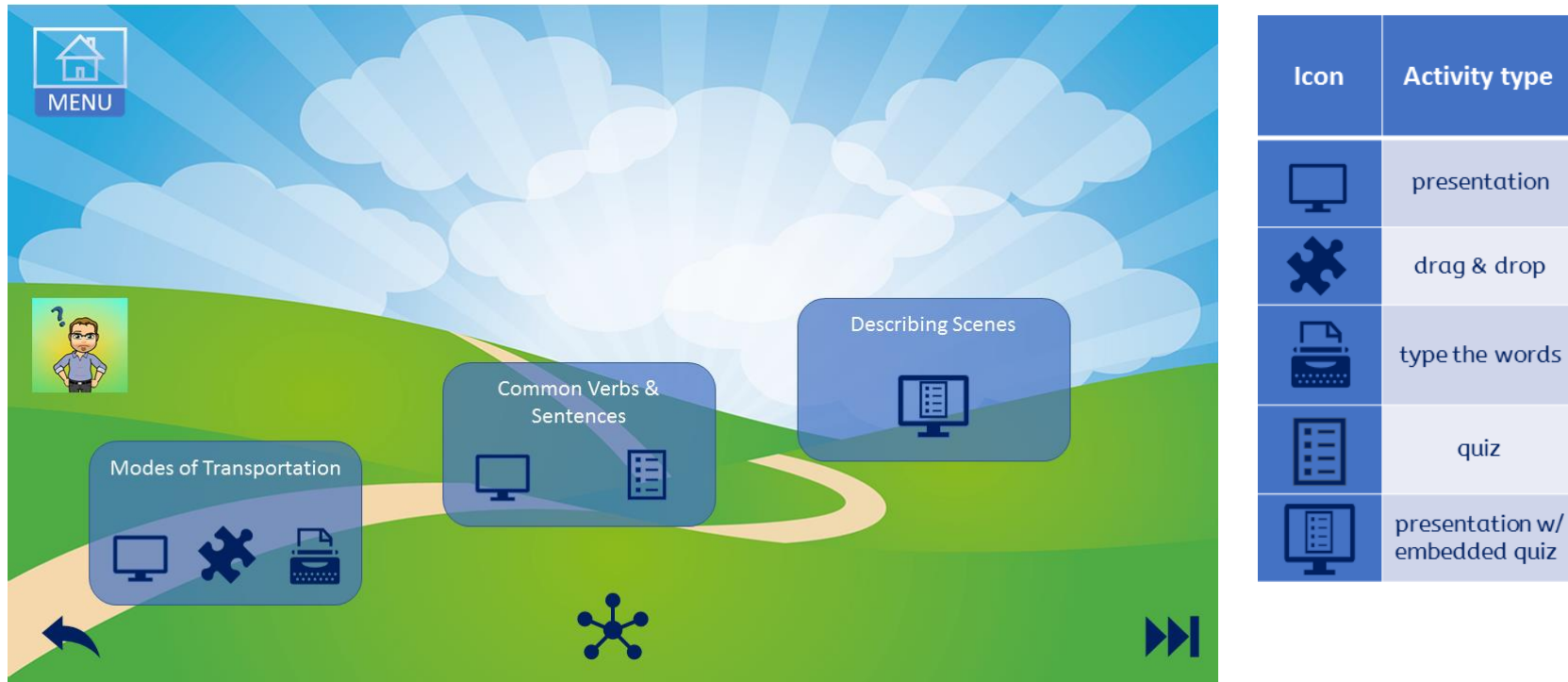


Figure 3: Landing Page / Main Menu

As mentioned in the project scope, there are three submodules: 1) Modes of Transportation, 2) Common Verbs & Sentences, and 3) Describing Scenes, laid out on a path in order of difficulty. Each submodule has an 'absorb' activity (Horton, 2012) used synonymously with 'instructional component' in this paper. Each instructional component is followed by/grouped with scaffolded exercises and assessments. The exercises and assessments employ several types of are several types of interaction employed (see legend of Figure 3). Drag and drop includes two types: dragging written words onto their images, or dragging text into blanks in sentences. The 'Quiz' activity includes a combination of drag and drop and typing activities. H5P web interactive content types each have their benefits and drawbacks. Some allow embedded images, while others allow a video or image to be show upon successful completion, where success can be defined by measure of accuracy.

As you can see in Figure 3, currently learners have the option to click on anything. They can watch a presentation or go directly to an exercise (each icon will have mouse-over text displayed when users hover their mouse over it). If learners just click the next screen arrow at the bottom right, the lesson will progress in order of difficulty, starting with the presentation on Modes of Transportation nouns, then a drag and drop activity based on that presentation, followed by a typing activity with the modes of transportation. However, learners can currently click on the hardest activity (Describing Scenes) if they want. This is to cater to more advanced learners or learners who have mastered the more elementary tasks.

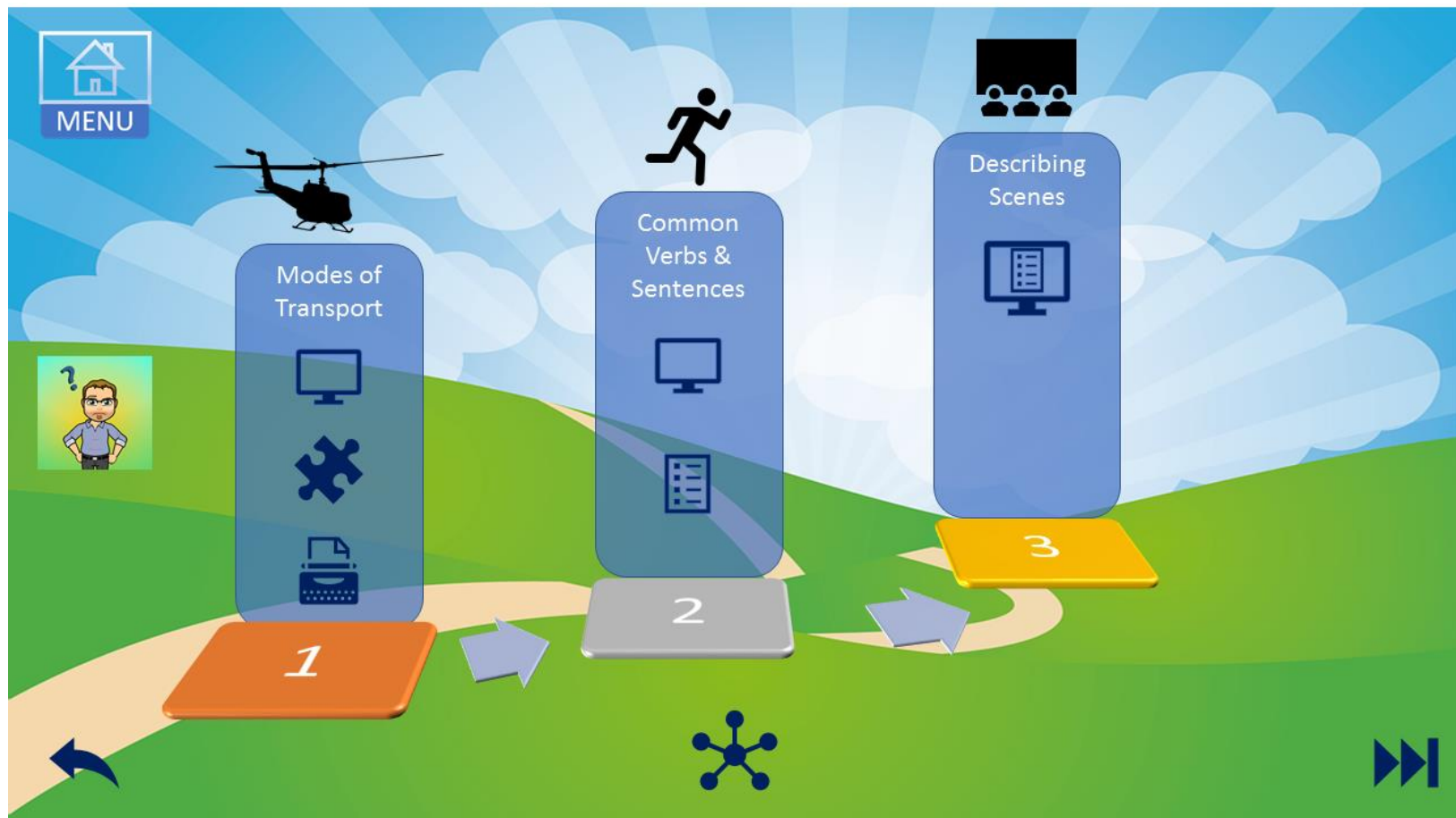An updated landing page has been made based on feedback from colleagues (see Figure 4)



Figure 4: Updated landing screen based on feedback

There are several reasons for the changes.  First, the numbers and arrows help to add clarity of the progression of tasks based on order of difficulty.  Second the silhouette icons atop each submodule column provide a preview of the task, as learners may not know the meanings of the words 'transportation', 'verbs' and 'scenes'

Once again, here is a link to the wireframe: https://app.moqups.com/megiddo@gmail.com/YsfdTYcCaY/view.  Note that for readability purposes, the previous version of the landing page layout was retained.  Please use the zooming tool to see details of each submodule and where all content will be located.  As this is a trial version of Moqups, I could not export easily the document as high-resolution graphics.  The next section includes every visual of every slide of digital content.

## All Content

The complete documentation for all content related to your e-learning module must be included in your paper.  Ultimately, you should be able to cut the content from your paper prototype and paste the content directly into the digital prototype and have usability testers begin taking the course.

### Main Menu Narration

Every time learners encounter the main menu/landing page, they will see and hear the following: "Hello there!  Welcome to the English Learning Path.  You can start at the beginning [blink-animate Modes of Transportation icon], or try anything you want."

### Resources

Clicking on the resources icon from the main menu will lead to a page of links sorted by difficulty.  This is still under development.

### Bitmoji Mentor Character - Main Menu Narration

When learners click on the Bitmoji help character from the main menu, they will see and hear the following: "Do you need some help? Click here on the house or menu [blink-animate house/menu icon] to go back to this screen.  Click this arrow [blink-animate back arrow] to go back one screen, or here [blink-animate fast forward arrow] to continue."

### Bitmoji Mentor Character Narration

When learners click on the Bitmoji help character from any activity screen, they will see and hear the following: "Do you need some help? Click on the video to learn how to do this!"  On click, an embedded YouTube video will start playing, showing a screen recording of the task being completed along with audio narration.  The audio narration will be the instructions which accompany each task.

**Instructional Components**

*Modes of Transport*: When learners click on the Modes of Transportation presentation icon, they will see the following instructional video presenting the basic modes of transportation, with animated visuals and audio narration: https://youtu.be/9c0lUtoYpR4.  Target learners are elementary school children, so animation has been added for engagement.  Silhouettes of the modes of transport have been chosen instead of full color images to minimize distraction and extraneous cognitive load.

*Common Verbs and Sentences*: When learners click on the Common Verbs and Sentences presentation icon, they will be directed to this set of flashcards:    Each flashcard has an image of a verb, with a speaker icon below it.  When learners click on the speaker, they will hear an audio recording of the verb.

*Describing Scenes*: When leaners click on the Describing Scenes presentation, it will begin with absorb activities in which learners watch and listen to narration about scenes.  The narration text of each scene will comprise the subsequent fill-in-the-blank exercises of dragging and dropping words into blanks, followed by typing words into blanks.  Words in between asterisks (*) are the words learners will be required to drag or type in the exercises that follow:
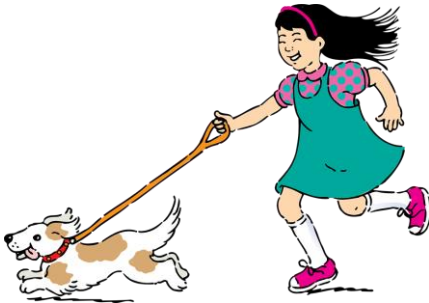


"*She* is *running* with her *dog*.   She is laughing.  She has *black* hair.  She is wearing *pink* shoes.  Her dog is *pulling* her."
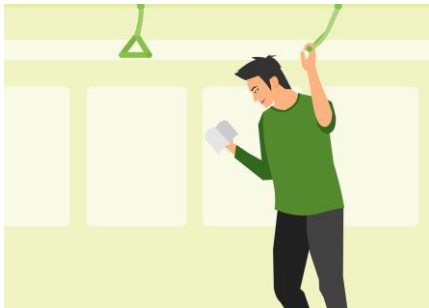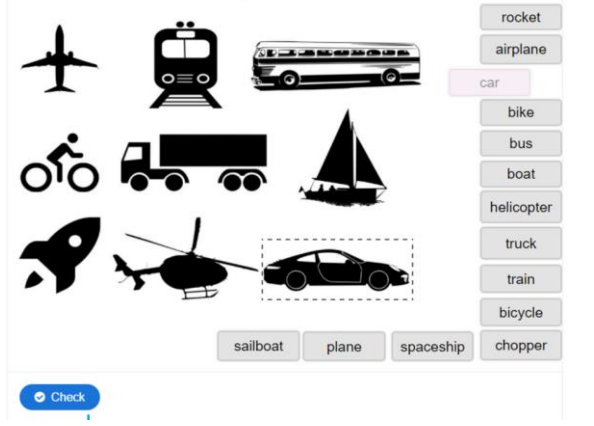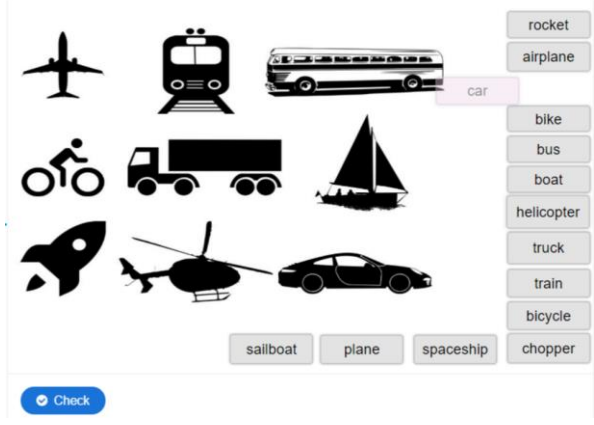


"He is *riding* the subway.  He is *reading* a book.  He is *holding* onto the handle.  He is *wearing* a green shirt."



"The *teacher* is teaching the class.  The *students* are *listening*.  One girl has a yellow *bow* in her hair.  One boy is wearing a baseball *cap*.  There is a *chalkboard* in the back."

**Scaffolded Activities and Assessments**

The following table (Table 1) shows how the lesson objectives align with the assessments. All assessments can be seen by clicking on the link in the right-most column.

| Submodule & Objective | Assessment Description | Sample Screenshot (please click on link to see the full activities) | Link |
|---|---|---|---|
| **Submodule 1:** After viewing instructional component, associate 12 modes of transport images with their written form at 100% accuracy | Drag & drop transportation nouns onto corresponding images **with hint:** dropzones highlighted when dragging |  | https://www.avimegiddo.com/sandbox/#dropzone_highlight |
| | Drag & drop words onto corresponding images with **no hint** |  | https://www.avimegiddo.com/sandbox/#no_hint |

| | | | |
|---|---|---|---|
| **Submodule 1:** Type 12 modes of transport words given their image at 100% accuracy. | Given an image of a mode of transport, type it, **with hint:** lesson silhouette and written word visible, then without, with automatic checking.  Accepts 'bike' or 'bicycle' |   What is this? Type the word. Click 'check' to check your answer.  bicycle, bike  Check | https://www.avimegiddo.com/sandbox/#typing |
| | Given a **new** image of a mode of transport, type it, **no hint.** |   What is this? Type the word. Click 'check' to check your answer.  Check | |

| | | | |
|---|---|---|---|
| **Submodule 2:**<br>Given time spent with instructional flashcards, associate 8 verb images with their written form at 100% accuracy | Drag & drop verbs onto corresponding images **with hint:** dropzones highlighted when dragging | Drag and Drop<br><br>write<br>swim drink eat push read clean pull<br>✔ Check | https://www.avimegiddo.com/sandbox/#verbspractice |
| | Drag & drop verbs onto corresponding images **with no hint.** | Drag and Drop<br><br>write<br>swim read pull drink eat push clean<br>✔ Check | |

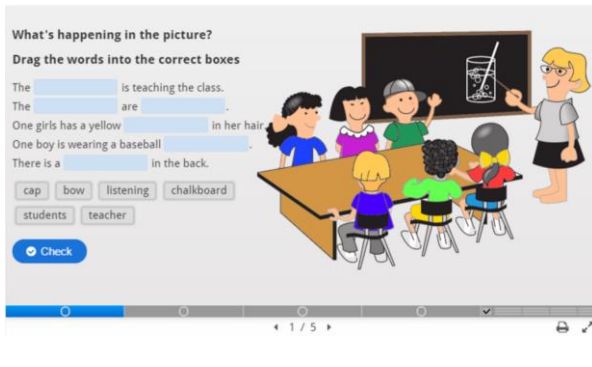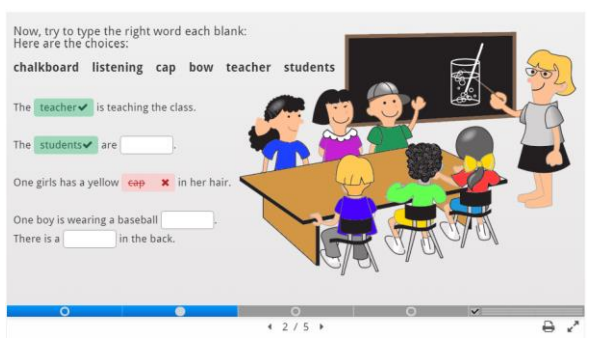| | | | |
|---|---|---|---|
| **Submodule 2:**<br>Type the 8 submodule verbs given their image at 100% accuracy. | Given an image of a lesson verb and example sentence, type the verb in the blank, **with hint:** word visible | <br>**What is he doing? Type the missing word.**<br><br>He is cleaning<br><br>He is [_____]ing | |
| | Given a **new** image of a lesson verb and example sentence, type the verb in the blank, **no hint** | <br>**What is she doing?   Type the missing word.**<br><br>She is [_____]ing | |

| Submodule 3: After completing instructional component, identify and then type 12 nouns and verbs to complete sentences that describe a corresponding image | Given an image and sentences describing it, complete the sentences by filling in the blanks (dragging the words to their correct places). |  | https://www.avimegiddo. com/sandbox/#scenes |
| | Given the same image and sentences describing it, complete the sentences by **typing** the correct nouns or verbs in the blanks |  | |
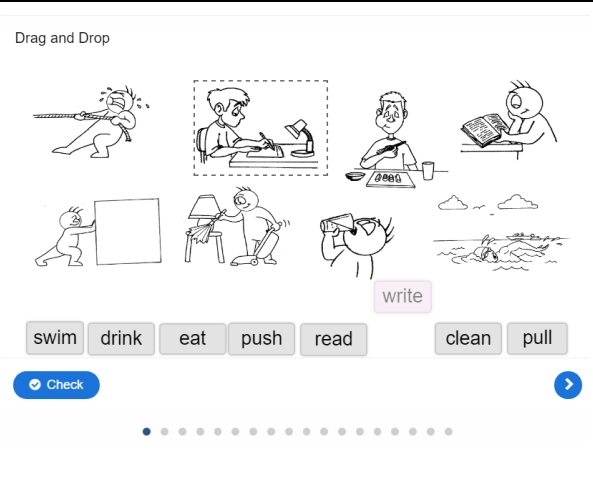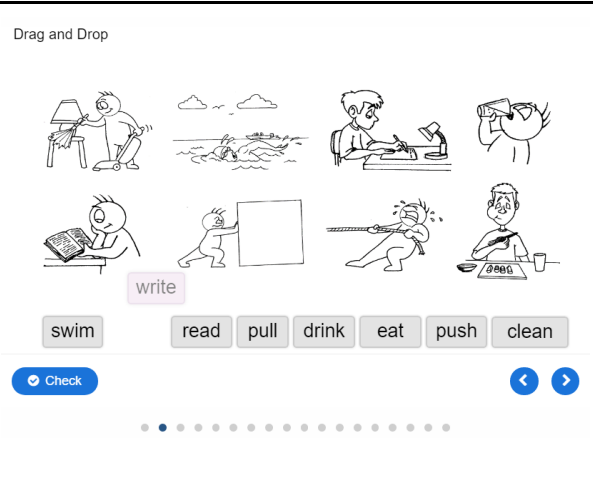
Table 1: Objectives and Assessments

## Positive Reinforcement and Progress/Completion Content

When learners complete the basic verbs submodule with >80% accuracy, they will see this video.

When learners complete the Describing Scenes submodule, there will see a progress/completion page such as the one in Figure 5 below, which they can print out and show to their supervising adult or teacher.

You achieved: 80% 🐦 Share on Twitter

Slide 1: What's happening in the picture? Drag the words into the...
Slide 2: Now, try to type the right word each blank: Here are the ...
Slide 3: What is the man doing?   Drag the words into the cor...
Slide 4: What is the man doing? Type each verb only once   ...
TOTAL

👁 Show solutions    🔄 Retry

◄ 5 / 5 ►

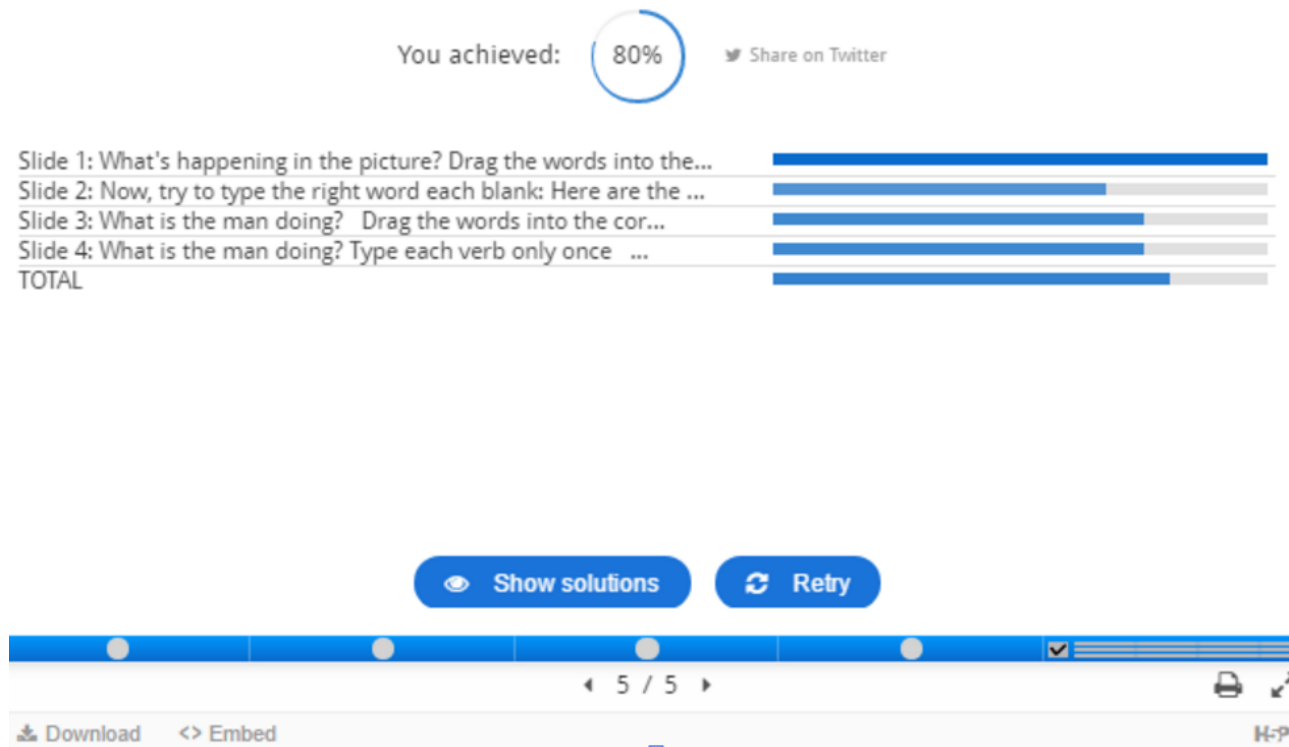⬇ Download    <> Embed    H-P

Figure 5: Progress/Achievement Report

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

Merrill's Five Star Instructional Design Rating

The following table is a self-evaluation of the module using Merrill's Five-Star Instructional Design Rating (2001).  For each sub-section, 'gold' represents the highest rating, 'silver' the middle, and 'bronze' the lowest rating.

Type of Instruction:  Written & Verbal instruction, Self-paced, learner-directed

| 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? | Yes, in the sense that many of the activities involve "labeling" (dragging and dropping words onto pictures) or filling in blanks to make sentences complete.  Learners will see these labeled pictures and complete sentences before they are required to complete them on their own in the module. |
| | Are students engaged at the problem or task level not just the operation or action levels? | Yes, the activities have a context and are not just isolated drills. |
| | Does the courseware involve a progression of problems rather than a single problem? | Yes, problems/tasks are leveled by difficulty, and learners are directed to more complicated tasks upon completion of simpler ones. |
| RATING FOR PROBLEM STAGE:  Gold | | |
| 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? | The course could do a better job of activating prior knowledge.  It does a good job of activating concepts presented earlier in the module itself, but not knowledge prior to interacting with the module. |

| Stage | Criteria | Explanation |
|---|---|---|
| | Does the courseware provide relevant experience that can be used as a foundation for the new knowledge? | Definitely.  Knowledge of the meaning of basic English words and their spelling is a foundation for new knowledge |
| | If learners already know some of the content are they given an opportunity to demonstrate their previously acquired knowledge or skill? | Yes, they can skip instruction on the more basic tasks and go directly to the assessments. |
| RATING FOR ACTIVATION STAGE: Silver | | |
| 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? | Yes, the mini-lessons preceding each activity are consistent with the activities/assessments. However, there are not many non-examples. There could also be demos (screen recordings) of the activities being completed. |
| | 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? | Yes, learners are provided and directed to pertinent content<br>Examples are contrasted. |
| | Is media relevant to the content and used to enhance learning? | Definitely.  This is a strong point.  Rich images and cutting-edge interactive content facilitate learning. |
| RATING FOR DEMONSTRATION STAGE: Gold | | |

| 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. | The last two types of application are not utilized in the module. Learners are not required to demonstrate knowledge of procedures or causal chains (causes and effects). |
| | 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? | Yes, learners engage in a varied sequence of problems (dragging, typing, etc.). Yes, learners receive automatic feedback when they give incorrect answers. |
| | 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? | Yes, there are several context sensitive guides, including a mentor character that provides guidance on how to complete tasks and an option to view the solution upon completion of a task, and |
| RATING FOR APPLICATION STAGE: Gold | | |

| Stage | Criteria | Explanation |
|---|---|---|
| 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? | No, it could do a better job of explicitly motivating learners to use acquired knowledge in their daily lives. |
| | Does the courseware provide an opportunity for learners to reflect-on, discuss, and defend their new knowledge or skill? | No….I would have liked to include a meta-cognition reflection type activity, however it is both out-of-scope and too challenging to require of target learners, given their age and level of fluency. |
| | Does the courseware provide an opportunity for learners to create, invent, or explore new and personal ways to use their new knowledge or skill? | No, it does not. |
| RATING FOR INTEGRATION STAGE: Bronze | | |

# References

Horton, W. (2012). *E-learning by design* [Kindle edition]. Retrieved from amazon.com.

Merrill, M. D. (2001). Five-star design rating. Utah State University, Department of Instructional Technology. Retrieved from http://medsci.indiana.edu/c602web/tbl/reading/merrill.pdf