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EnglishConnect 1: Creating Stories and Associated Language-Learning Activities as Supplemental Online Learning Resources

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Purpose

Understanding the potential of increased English language proficiency to bless the lives of members, senior leaders of the Church of Jesus Christ of Latter-day Saints (the Church) authorized the Church Educational System (CES), the Self-Reliance Services Department (SRS)—which has responsibilities over the Church’s Perpetual Education Fund (PEF) as well as self-reliance initiatives—and the Missionary Department to pool resources and expertise in 2015 to develop a suite of courses and attendant training materials for local leaders, teachers, and, in some locations, missionaries. This suite of courses would be available for members across the world to access English language-learning opportunities that are seen as the foundation of greater opportunities for education. In much of the world, as people’s English abilities improve, their employability increases. English proficiency can be an important step toward self-reliance.

Elder Kim Clark, commissioner of the Church CES, made this statement:

The Church Educational System will seek to provide opportunities for education to the members of the Church wherever the Church is organized. . . . Now, the opportunities we envision include high school education, English language instruction, Pathway, technical and skills-based training and certificates, undergraduate degrees in selected fields, and even master’s degrees. (2016)

Through the development and implementation of a series of courses, this ambitious initiative aims to offer motivated learners language instruction, starting with basic English (novice-mid proficiency level on the American Council on the Teaching of Foreign Languages [ACTFL] scale) to college preparation language classes (including
intermediate-mid and academic language). Teams at Brigham Young University–Idaho (BYU–I) and Brigham Young University–Hawaii (BYU–H) are designing curriculum for online courses for learners at the intermediate-low to intermediate-high levels. Curriculum developers at the Missionary Training Center (MTC) are working on materials for face-to-face instruction, which is called EnglishConnect 1 and 2 (EC1 and EC2), to be offered on a weekly or twice-weekly basis for learners at novice-mid and novice-high proficiency levels.  

The first 24 lessons for EC1 (including training for teachers and local leaders) were piloted in three countries in the fall of 2016. Learners saw some progress in language use and gains in confidence using English. Program developers recognize the need to develop additional engaging, pedagogically sound supplementary online experiences to support student learning for EC1. The MTC materials development team is developing online language units that will provide an additional hour of practice. Unfortunately, two to three hours a week of language study means only slow gains in proficiency. Students need more practice. They are encouraged to augment study using Duolingo (a valuable on-line tool for learning basic phrases and vocabulary) and Reading Horizons (which offers explicit, systematic instruction on-line in how to read and also offers ample reading practice through stories designed for K–12 learners)—though as yet there has been no attempt to explicitly integrate these resources into EC1.  

The purpose of this master’s project is to develop a prototype of an online, story-based unit of language-learning activities designed to provide additional English language practice for learners in EC1 classes. Building on topics, vocabulary, and
language structures of a particular lesson within the EC1 curriculum, EnglishConnect 1—
Stories is a logical next step in language practice for these language learners.

**Background and Justification**

EC1—Stories provides online story-based supplementary language-learning activities for students enrolled in EC1, a blended learning course for adult learners at novice-high to intermediate-low English language proficiency levels. During weekly face-to-face lessons, teachers introduce a topic, related vocabulary, and relevant grammar and lead students in communicative practice. The supplemental online, story-based activities are intended to provide additional practice to help users learn new vocabulary; increase reading proficiency, comprehension, and fluency; improve pronunciation; and build toward understanding and production of paragraph-length discourse.

Stephen Krashen’s (2009) influential acquisition-learning hypothesis holds that language is acquired almost subconsciously, given extensive exposure to comprehensible input. Stories at an appropriate level of difficulty for a given learner—within the learner’s zone of proximal development (Vygotsky, 1978)—read and told, have long been seen as an important source of comprehensible input (see for example Adair-Hauck and Donato, 2002).

Most language teachers now agree that comprehensible input is necessary to but not sufficient for creating an optimal language course. A balanced approach emphasizing “four strands” of language learning—meaning-focused input, meaning-focused output, language-focused learning (grammar, syntax, etc.), and fluency development (Nation, 2007) is now understood to be more effective. Still, the rich and accessible text of story provides structure on which all four strands of language learning can be woven.
In *Tell Me a Story: A New Look at Real and Artificial Memory*, R. C. Schank, a pioneer in artificial intelligence, postulated the centrality of story to human knowledge, intelligence, learning, and creativity (2000). He argued that memory (knowledge) is essentially story based and that an important form of intelligence is the ability to translate experience into stories and then to index them in ways that make it possible to retrieve, compare, analyze, and learn from. Interesting stories are memorable and therefore useful as teaching tools (teaching cases by telling stories, for example). Stories and language are intimately connected. Stories connect experience to language and allow us to analyze, share, and make meaning of lived experience. Listening to and telling stories may be one of the most universal things humans do.

For second-language (L2) learners, well adapted stories provide critical clues of context and repetition of vocabulary and phrases (a form of spaced repetition) that are crucial to language acquisition. They provide ways for even novice learners of all ages to engage with characters and events of interest. Gonzalez (2010) found that stories increase student motivation, participation, comprehension, and acquisition of new vocabulary. Illustrated stories provide additional context and interest allowing learners to more easily garner the gist of a story (Cameron, 2001). This understanding allows a learner to focus attention on language elements. As Skehan noted, stories allow learners to draw on vast “stores of schematic and contextual knowledge” to comprehend meaning in a second language (1998, p. 26). The many kinds of scaffolding for language learning that are built into stories may make them an important bridge from sentence-level to paragraph-level mastery of a new language.
Product Description

The goal for this project has been to provide a prototype for one story unit for EC1: Stories. The prototype for the unit was developed and presented in Storyline 3, a program for creating interactive e-learning experiences. Sixteen language-learning activities presented in this online unit revolve around a single illustrated story. The unit correlates to a teacher-directed classroom lesson in EC1. The story at the heart of the unit builds on the topic and vocabulary presented in the face-to-face lesson. (In this case, the topic of the lesson is EC1 Lesson 14: Jobs and Careers.)

The unit begins with a listening activity wherein learners hear the story “Goats” (Appendix G: Design Representations) about an African man who is forced by circumstances to leave his family on the farm and move to the city to find work. An illustrated slideshow accompanies the narration, thus offering context and clues for meaning as well as fostering learner engagement. The story has been constructed to include very few words that have not already been covered in earlier lessons in the EC1 curriculum. The story has also been rated on various readability scales that are based on sentence-length, word-length, repetition, and word-frequency measures (see Appendix G: Text Readability Consensus Calculator).
After watching and listening to the slideshow, learners are invited to scan the text of the story and click on any words in the text that are new to them. Clicking on a new word brings up a vocabulary card that includes the word, an audio link to hear the word pronounced, images that illustrate the meaning of the word, sentences that use the word, and audio links that allow learners to hear the sentences containing the word (see figure 2). After studying the card, learners return to the text to find other new words. All learner-selected words appear highlighted in a list under a “My word list” button that appears on subsequent slides. The customized vocabulary list is always available for student review.
The following practice activities are then available to the learner:

- Watch slideshow (this time with text supplied) and read aloud the text with the narrator. This activity is meant to increase fluency, prosody, and comprehension.

- Match written words to pictures; receive correct/incorrect feedback. This activity is meant to associate written words with meaning (see figure 3).
• Match spoken words to pictures; receive correct/incorrect feedback. This activity is designed to help learners associate the sound of words to their appropriate meanings.

• See and say: Look at the picture, then say and record the word the picture represents. The written word is available as scaffolding for this activity so the focus is on pronunciation. Listen to the recording, and compare it to the native pronunciation recording. Learners are allowed to record multiple times until they are satisfied with their pronunciation.

• Word definition match: Match each word to its definition; receive correct/incorrect feedback. This activity requires students to be able to read written definitions and associate correct words.

• Word dictation: Listen to the word. Type the word; receive correct/incorrect feedback. This exercise enables learners to make connections between spoken and written language at the word level and focuses their attention on spelling.

• Label image: Look at picture. Write the correct word; receive correct/incorrect feedback. This requires learners to write the words without direct association with spoken language and thus is slightly more challenging for most learners.

• Listen and say: Listen to the word. Say and record the word. Learners listen to their response and compare it to native speaker recording.

• Fill in the blank: Click and drag the correct word to complete each sentence; receive correct/incorrect feedback. This activity focuses learner attention on sentence meaning and structure.
- Sentence dictation: Listen to a sentence spoken by a native English speaker. Write the sentence. The course offers feedback in the form of a correct sentence that learners can compare to their own answer to determine where they made mistakes.

- Shadow reading: Listen to a sentence spoken by a native English speaker. Record the sentence, listen to that recording, and compare the recording to that of the native speaker. This activity allows learners to focus on pronunciation, fluency, and prosody.

- Sentence scramble: Click and drag words to create meaningful sentences; receive correct/incorrect feedback. This activity again focuses learners on sentence structure.

- Timed reading: Click “Start.” Then read the story text aloud as fast as possible. When the timer sounds, the program records the last sentence the learners completed. Learners then repeat the exercise to see if they can read more of the text in the allotted time.

- Reading comprehension: Answer multiple-choice questions about details of the story and implications that can be drawn from the story. Learners receive feedback on whether their answers were correct.

(For examples of each activity see Appendix A: Product).

Learning activities are designed for independent learner practice. Each activity provides simple written instruction (in simple language novice learners can comprehend) and also a “How to” button—a step-by-step screencast demonstration of how to complete the activity. The default navigation is to proceed through the activities as outlined above,
with a “Next” button at the conclusion of each activity, leading to the subsequent activity. Each activity is also tagged as to the language-skill practice it provides (listening, reading, speaking, and writing). A menu button allows learners access to lists of activities for practicing each skill. In an attempt to give these adult learners more autonomy, learners may also select activities from the menu in any order.

*Figure 4: Activities are listed by language skill area on the dropdown menu.*
Figure 5: Users may choose activities in any order.

Learners receive corrective feedback on all activities except those that involve recording their voices (the “See and say,” “Listen and say,” shadow reading, and timed reading activities). For these activities, learners can compare their recorded answers to those of native speakers.
Design Process

Phase I: Linguistics 677

Background research.

During the fall semester of 2016, I was given the opportunity to assist in teaching Linguistics 677: Curriculum Development. This experience provided me with critical background research for my EC1—Stories project. As a class, we studied principles of effective instructional design. We also learned to conduct needs analysis, to understand constraints and opportunities provided by specific contexts, and to identify effective language teaching materials. In addition, class members worked together to create a prototype of a unit of supplemental online language practice to support EC1—the curriculum for English learners at novice-high to intermediate-low levels of proficiency. Each EC1 lesson begins with 90 minutes of face-to-face instruction. Critical stakeholders for this project were the materials development team at the MTC, as well as Church of Jesus Christ of Latter-day Saints Self Reliance Services (SRS). As a class, we met with these critical stakeholders to understand their values, design needs, resources, and constraints.

Guiding principles.

Paul Nation’s article “The Four Strands” (2007), advocating balancing elements of meaningful input, meaningful output, explicit instruction, and fluency practice in language instruction, was the principle inspiration for our selection of content.

We discussed the multiple ways in which context necessarily shapes curriculum and the importance of understanding the contexts in which these materials would be used.
Knowles, Holton III, and Swanson’s assumptions about adult learners informed our understanding of what strategies and activities would be most appropriate for young adults who make up the majority of students in EC1 classrooms (2015). These assumptions included the following: mature self-concept makes adult learners more self-directed; life experience is a resource for learning; learning is oriented to tasks of social roles; and priority is given to applicable, problem-centered learning.

**Design models.**

To better understand how to create online materials that would “foster a communicative environment rich in comprehensible input,” we read Blake’s *Brave New Digital Classroom: Technology and Foreign Language Learning* (2013, p. 18). His discussion emphasized language-learning possibilities growing out of engaging audiovisual content as well as chat, e-mail, and asynchronous communication that online learning makes possible.

We also studied Allen’s book *Leaving ADDIE for SAM: An Agile Model for Developing the Best Learning Experiences*, wherein he outlined the value of “successive approximations,” rather than attempting to complete a comprehensive design in one fell swoop (2012, p. 133). This approach allows for “frequent course corrections and . . . avoid[s] spending too much resource on one component” (p. 73).

The students in the linguistics class researched available online materials for ideas (see Appendix D: Consulting Products and Precedent). We met representatives from companies offering language-learning platforms, such as Technology Assisted Language Learning (TALL) and Reading Horizons.
Five instructional design elements.

Using a divergence-convergence model of brainstorming, we settled on five instructional elements for the product:

- Rich, meaningful input provided by scripted video dialogues and short written pieces
- Rich, meaningful output through online learning activities
- Explicit language instruction delivered on video by a grammar specialist
- Extensive vocabulary practice through online learning activities
- Self-directed language-learning strategies presented in the form of short video clips that would illustrate a particular strategy.

Rapid prototyping.

In small teams, we developed prototypes on paper—scripts, sketches, storyboards. We then produced PowerPoint prototypes, scripts, storyboards, and more for online activities to support content of lessons taught in face-to-face, teacher-directed classrooms.

The teams shared these initial prototypes with the rest of the class and then evaluated and revised the prototypes. The class then created additional video elements. We researched possible platforms on which to deliver content. While the MTC was then exploring using Learnosity (which provides a wide array of tools for online learning and assessment) and the learning management system (LMS) Brightspace, these options were not available to us. We concluded that, given time and financial constraints, our best option was Canvas, even though this choice meant we would not be able to use certain question types and activities we had hoped to employ. We discussed how the elements
should be connected (navigation) in the online version, what kinds of feedback learners should receive, and what activities we could created given the affordances of Canvas.

A consultant to the project then programmed the activities the class had designed into Canvas. His leadership at this phase of the project was critical. He was masterful in clarifying goals, managing deadlines, promoting unity on the team, building consensus on design decisions, and working with the constraints of time and budget and the technical expertise of the team.

**Product.**

In the end, the prototype included video clips—basic dialogues, simple grammar instruction, and self-directed learning strategies—as well as short listening, reading, and writing exercises (multiple choice, matching).

**Evaluation.**

We were able to conduct two user tests with students from various language backgrounds at the novice-mid level of English proficiency at the Brigham Young University (BYU) English Language Center (ELC). The test included one-on-one observation of students and conversations with them about things that seemed to be causing confusion as they used the program. Although our ability to communicate with these students was limited, we learned at least three lessons important for the design of the product from this user test:

- Learners at this level of proficiency need very clear, very simple instructions.
- Navigation needs to be simple and intuitive.
- A clean, simplified user interface allows students to focus on learning activities.

Where possible, one question or task per screen is optimal.
Class members revised the prototype to reflect what we had learned and user-tested it a second time. This second test went more smoothly.

Report.

Finally, class members delivered the latest prototype to MTC staff and reported on their evaluation. The report was well received. The MTC is now developing online language practice for EC1.

Reflection.

I learned some important lessons in the process of helping to build this prototype:

A team needs a respected leader. Achieving consensus in a team is important but more easily advocated than accomplished. Members of the team had strong opinions and were really invested in the outcomes. Defining roles and responsibilities based on team members’ interests and abilities helped.

An online project needs people with specific skill sets. Knowing what those skills are from the outset and finding people to fill those rolls is critical to success.

Many of the elements that make online language learning potentially engaging and effective—for example, audiovisual content and chat—are expensive. These elements need to be planned, budgeted for, and produced with careful efficiency in order to be cost-effective.

Knowing the affordances of available hardware and software is critical in order to add contextual elements to the design of online environments. Ideally, people with technical expertise and experience authoring in different programs are part of the design process from the beginning. Every context, every design project, is going to be constrained by available technology.
Phase II: MTC Supplemental Story-Based Study Units

Recognizing that developing language proficiency requires more practice than once-a-week, face-to-face instruction and an additional 90 minutes of online practice (such as materials prototyped in the Linguistics 677 course), the MTC materials development team proposed developing additional supplemental practice activities based on stories that relate to topics covered in weekly lessons.

Design.

The MTC materials development team including, Teaching English as a Second Language (TESOL) specialists and a programmer, discussed questions such as scope and sequence, content, activities, and appropriate programs in which to build a prototype, user interface, and more for story-based online supplementary activities.

I wrote eleven stories for this project making every effort to craft the stories using vocabulary covered in earlier lessons, familiar sentence structures, and appropriate amount of repetition for these novice-level learners.

As a first measure of a story’s level of difficulty for our targeted audience, we used the Automatic Readability Checker [http://www.readabilityformulas.com/free-readability-formula-tests.php](http://www.readabilityformulas.com/free-readability-formula-tests.php), a readability consensus calculator, to analyze the readability level of each story (Appendix G: Design Representations and Prototypes). The target level for the first stories in the series was first grade to second grade, with stories gradually becoming more difficult. The last stories were to be no more than third-grade level. Where possible, we modified content, sentence length, and word choice to make stories easier to read. We analyzed the grammar used in each story, checked against principles already taught, and made changes as necessary.
Development.

I created a PowerPoint prototype of one story—“The Amazing Dog”—and a list of potential activities. Others on the team created a prototype of a second story. After the team reviewed the PowerPoint prototypes, we further simplified the stories.

Figure 6: Beginning slides for Amazing Dog story PowerPoint prototype

These new prototypes were then used by an artist (a student pursuing an illustration major at BYU–I) provided by EC administrators to draw images for two
Our programmer then created videos with pictures, text, and audio, to be incorporated into the prototype we were building in Qualtrics—a program offering many question types—that was the platform available to us and familiar to our programmer. Having made the decision to use Qualtrics as our platform, we had to scale back our catalogue of activities. For example, Qualtrics did not allow learners to record and play back responses or programmers to employ adaptive testing, branching activities, or evaluation of written output.

A TESOL specialist on the team developed language-practice activities for the two stories. The programmer programmed these activities into Qualtrics to create prototypes for the two story-based units. The team reviewed the activities, which were then revised.

In the end, the activities included:

- Learning new vocabulary.
- Watching and listening to a slideshow of the story.
• Answering multiple-choice questions about content.
• Ordering words and phrases using drag-and-drop function to create sentences.
• Matching exercises for various types of vocabulary practice.
• Sequencing pictures of events in the story using drag-and-drop function.
• Selecting correct word for fill-in-the-blank exercises.

All activities, except reading and listening to the story, were at the word or sentence level.

Evaluation.

On March 22, 2018, we conducted a user test of the two units. Three adult learners attending a self-reliance English class of the Church of Jesus Christ of Latter-day Saints participated. Three observers each monitored a learner as he or she completed the story-based activities. We then asked a series of questions about their experience.

We learned several important lessons:

• All content for a given activity should appear on the screen at the same time.
  Learners were confused if, for example, only three of four options for a match activity were visible at a time or if they had to scroll down to complete an activity. This visibility was particularly important if the activity required dragging and dropping items.

• The stories, as written, were a bit too easy for these learners—that may be a function of not testing the materials on the right group.

• Learners liked the stories. Both of the stories tested were jokes, which the learners understood and actually laughed at out loud. They were pleased to have understood an American English-language joke.
Learners completed the activities in about an hour. All said they would be willing to have more, similar practice. Activities took about the time we anticipated they would.

Learners found illustrations, audio, and text support helpful as they read the story.

**Phase III: Master’s Project**

For my master’s project, I determined to develop a third story-based unit.

**Design.**

I created a story, “Goats,” related to EC1 Lesson 14. I analyzed and simplified the text of the story, trying to balance stretching learners toward engaging with larger blocks of text without overwhelming them. I based decisions on expected learner proficiency levels and material already covered in the course. I wanted to reuse and recycle previously studied vocabulary and language elements (sentence structure, grammar). I decided to err a little on the side of complexity, of challenging learners with slightly longer sentences than they had encountered before.

I developed a storyboard using photos found on the Internet as a prototype to serve as a guide to an illustrator, who created images for the slideshow that would be the centerpiece of the unit.

<table>
<thead>
<tr>
<th>Text</th>
<th>Image</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Samuel lives with his father and mother and sisters and brothers in a village in the green mountains far from the big city. They are happy.</td>
<td><img src="image.jpg" alt="Ugandan scenery" /></td>
<td>Ugandan scenery</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Ugandan home</td>
</tr>
</tbody>
</table>
2.

<table>
<thead>
<tr>
<th>His family has many goats. They work hard to take care of their animals. Samuel’s mother sells goat’s milk and goat’s hair to get money for the family. Samuel loves the goats.</th>
<th>Goats in Africa</th>
</tr>
</thead>
</table>

3.

<table>
<thead>
<tr>
<th>Samuel’s father is intelligent. He knows how to care for his animals. The goats are strong. Every year there are more goats. Every year there is more milk and goat hair for Samuel’s mother to sell. Samuel’s family has everything they need.</th>
<th>Samuel’s father caring for goats</th>
</tr>
</thead>
</table>

4.

<table>
<thead>
<tr>
<th>One day one of the goats gets sick. Samuel’s father tries to help but the goat does not get better.</th>
<th>Sick goat</th>
</tr>
</thead>
</table>

*Figure 8: Storyboard images for “Goats”*

I hired an artist to create illustrations. We discussed the function of the illustrations, which included providing accurate reflection of the details (specific words) of the text,
providing context for understanding the story, and engaging the learner in the story.

Figure 9: Sample illustrations for “Goats”

I created a content and objectives matrix (see Appendix E: Content and Task Analysis Matrix) to make sure the practice covered word and sentence levels for reading, writing, speaking, and listening.

I then wrote descriptions for possible story-based language-learning activities that covered each point in the content and task analysis matrix and specified the content for each activity.

Figure 10: Description of activity from which programmers built the activity in Storyline 3

Next, I developed a PowerPoint prototype showing basic content of activities and how I envisioned the activities would relate to one another. I envisioned two ways
through the practice activities. The first is to move from activity to activity in a
prescribed order from simple to more complex, from word level to sentence level and
then to larger blocks of text, and from receptive to productive language skills (mostly
bottom-up instruction). The exception to this principle was the use of the slideshow as the
first activity. This clearly top-down activity is meant to give learners listening and
reading practice in language in context. Theoretically, this practice encourages them to
engage prior knowledge, listen and read for gist, and develop listening comprehension
strategies.

![Figure 11: Slide from initial PowerPoint prototype](image)

The designs designated the kind of feedback that could be given after each
activity, and learners would be allowed to repeat an activity up to two times to improve
their score. They would then move to the next activity in the master sequence.

**Development.**

With the help of the Instructional Psychology and Technology (IP&T) program,
two programmers joined the project in October to create an interactive prototype in
Storyline 3, a versatile eLearning authoring tool. Together, we worked to adapt the
activities to the program. This required some simplification and some compromises from
the original designs. BYU adjunct faculty member and Storyline 3 specialist answered
questions and provided direction about what was possible and what was not, given constraints of the program and limited time. We used a PowerPoint prototype to communicate basic attributes of the product and the activities. I also created a design specification sheet for each activity and a dictionary database, with images, audio clips, and definitions for each potential vocabulary card.

We were able to simplify the master slide in a way that we hope makes navigation to and through activities intuitive. Activity instructions are given in simple, short sentences. A “How to” button provides a screen cast example of how to complete an activity. This feature is relatively easy to build into Storyline 3. The default path through the activities is simply to push the “Next” button. Learners may also choose their own path through the activities. Drop-down menus for vocabulary, reading, writing, listening, and speaking that list activities for each skill in ascending order of difficulty. If a learner’s focus is on improving reading or listening he or she may focus practice on those activities. More advanced learners may skip word-level practice to concentrate on more challenging activities.

Progress bars at the bottom of the master slide let learners see that they are moving through the program. (This design feature was ultimately not incorporated in the final product due to programming challenges in Storyline.) A menu button is also always available should learners want to direct the sequence of their learning activities. On reflection, I understood that many of the original elements I had included on the master screen were important to me as a designer, but of, at best, secondary value to the learner. These elements were eliminated.
Our team met weekly to work through design and function issues and to come to workable compromises. For example, as mentioned above, I had hoped we could customize vocabulary practice to allow learners to focus on new vocabulary. The MTC programmer figured out how to allow learners to scan text and select new words. From their selections, we made customized vocabulary lists that make study cards always available for those words (under a “My word list” button). We were not, however, able to use those lists to create customized practice exercises. I have to be content knowing that reviewing familiar words can be an important kind of practice.

We create a timed reading practice, which learners can complete twice and then compare their two scores. A clock in the background lets learners keep track of time.

We were able to add a record function to Storyline 3, thus making it possible for learners to record their own voices and compare their pronunciation, modulating, and fluency to that of an audio clip of a native English speaker. Some researchers, such as Salimi, Kargar, and Zareian (2014), concluded that learners’ self-evaluation of pronunciation was quite accurate and perceived as a valuable exercise.

**Constraints.**

Three activities I had envisioned could not easily be rendered in Storyline 3. I had hoped to create customized vocabulary practice for each learner using words they identified as new to them. While we were able to create a customized dictionary, we were not able to build vocabulary practice activities off of students’ individual word lists. Consequently, all learners practice all potentially new words. I had also hoped to use a crossword puzzle as a way of focusing learners on word form (spelling). This activity proved incompatible with Storyline 3 affordances. Finally, I had hoped for a way for
learners to record responses for which the computer would then give some feedback—possibly by using a speech-to-text extension, then inviting learners to compare their speech turned to text (at word and sentence level) with the correct text. This complex feedback was a too much to ask of Storyline 3.

**Preliminary evaluation.**

A week prior to the learner usability test, my team ran through the program multiple times to ferret out any technical glitches:

- Were all buttons functional?
- Was audio clear?
- Did images convey what they were intended to convey?
- Was all feedback correct?
- Did feedback include all possible correct responses?
- Was feedback comprehensible to intermediate-low learners?
- Were there any dead ends—places learners might go and not be able to get out of easily?
- Were progress bars functioning correctly?
- Were directions clear and simple?
- Was the language used in screencasts clear and simple?
- How much time did it take to finish activities?
- Were divisions of content across screens logical?

In doing this, we found several places in need of improvement. We also found the interface with some activities to be a bit cumbersome. The sequence of “Select,”
“Submit,” “Receive feedback,” and “Next” was reduced to “Select,” “Receive feedback,” and “Next.”

After going through each activity with each of these questions in mind, the programmers made as many edits and revisions as possible in limited time.
Evaluation

Criteria

The primary stakeholder for this project is the MTC curriculum development team. Their three main criteria for evaluation are the following:

1. Usability: Is the user interface sufficiently intuitive and are instructions sufficiently clear so that users can complete each activity without confusion?

2. Learner satisfaction: Do the learners like using the program? Do they feel it is valuable?

3. Effectiveness: Do learning experiences actually lead to increased vocabulary, improved comprehension, greater fluency? Do learners experience proficiency gains over time using these materials?

The evaluation, for the purposes of this master’s project, focused on product usability and learner satisfaction. Effectiveness of the program—how much language learners learn by using the product—is difficult to ascertain at this stage of development and with this short of a unit. To do so would require assessments of learner language proficiency before and after experiencing the whole EC1 course. While the unit prepared for this project does report learner performance for each activity, this report only gives us a snapshot, not a map, of learner progress.

Questions related to this formative evaluation of usability are these:

- Is the interface sufficiently intuitive that learners are able to navigate through activities without outside help?
- Do learners access “How to” buttons?
• Do the how-to videos give enough information with enough clarity that learners are able to move forward?
• What questions, if any, do learners ask as they go through activities?
• Does the interface work without technical glitches?
• How long does it take for learners to complete each activity?

Questions related to learner satisfaction are these:
• Do stories and activities hold learners’ attention?
• Is the story too long for learners at this level of proficiency?
• Are there too many unfamiliar words?
• How many new words do learners click on?
• How do learners use cards from the “My word list” feature? Do they click the audio button for the word? Do they listen to example sentences? Do they feel the pictures help make the meaning of the words clear and memorable?
• Do learners go back to the “My word list” feature after initially viewing the cards?
• Are learners sufficiently engaged that they complete tasks?
• Do learners find program feedback encouraging or motivating? To what extent do learners pay attention to feedback after each activity?
• What activities were most interesting to learners? Which were most beneficial?

Procedures

With the help of BYU’s ELC, we were able to conduct a worthwhile evaluation of the unit. Prior to the user test, we uploaded the published Storyline 3 story unit “Goats” onto computers at the ELC, activated the record and playback widget, adjusted volume
controls on each computer, and tested to make sure we could successfully complete all activities on the ELC computers.

We conducted tests for two groups of 14 students enrolled in the ELC’s Foundation B classes. These students are at the intermediate-low to intermediate-mid level of English proficiency on the ACTFL scale. While these levels are just above the proficiency level of the program’s intended users, the students’ superior proficiency allowed us to hold more detailed conversations with them and thus receive more in-depth feedback.

For the first one-hour test, students were given a brief introduction to the program. For this test, five observers monitored two students each to see how students navigated the program, learn if the students used help features (“How to” buttons and the “My word list” resource) offered in the program, assess the level of user engagement, record instances of confusion, and note any glitches in programming. An additional four students went through the program essentially independently with only the aid of a proctor, who was available to answer questions. At the conclusion of the test, all students filled out a brief survey.

For the second test, after a brief introduction, 10 students were given one hour to go through the program independently, with the aid of a proctor who was available to answer questions. Again, at the end of the test, users filled out a short survey.

During the second test, four observers each monitored a single student. These students were chosen on the basis of availability, our ability to communicate with them, and a cross section of age, sex, and nationality. Users were encouraged to finish all activities of the unit. The observers again watched how the users navigated the program,
if they used available resources, and if they seemed confused. This level of scrutiny allowed observers to engage users in think-aloud protocols to better understand the learner experience. Users in this group were allowed to work through the whole program (the program took about 90 minutes to complete) and, afterward, they participated in a debriefing session to help us better understand their experience and elicit suggestions for improving the program.

Evidence

We collected the following evidence from the user test:

1. Completed user-test questionnaires from 24 participants, which were summarized in a single document
2. Observer checklists for first user test, which were aggregated in a single document
3. Detailed notes from one-on-one observation
4. Transcript of debrief discussion

(See Appendix H: Evaluation Instruments for copies of each of these instruments.)

Outcomes

The findings from the user test are summarized below in six sections.

1. Pre-test orientation.

Users in the test received a minimal introduction to the program. They need a little more information before they start. Specifically, we should point out the purpose and functionality of the “How to” button, the “My word list” feature, and the menu. Students rarely used these functions until the features were pointed out,
but when they became aware of these affordances, users referred to them often. The improved pretest orientation can be implemented by adding three or four sentences to the explanation.

2. Activity instructions.

While in the after-test survey, 79% of participants said instructions were always or often clear, observers noted several instances of confusion—especially with relation to recording. We realized, going into the test, that there were still some design and execution flaws in the program that, given time constraints, we had not been able to resolve before the evaluation. One of the chief things we wanted to test was if written instructions were sufficiently clear so that users could do activities without additional help. The “How to” button was meant as a backup. In the test, however, the “How to” video played on the screen open for each activity, thus not giving users a chance to read and process instructions before watching the video. This feature proved confusing. We need to correct the sequence, making the “How to” video accessible on demand and not as a default. This change to the program has already been made.

3. Feedback.

Users wanted clearer, more precise feedback. We were surprised at how much the feedback meant to them. They wanted to know precisely what was wrong, not simply that a response was not perfect. They liked to be able to compare their speech to native speakers and their written work to correct work. The computer doesn’t need to specify what is wrong, but it does need to give learners enough information that they can determine what is wrong. Given this information,
learners seem capable of constructive comparison and reflection and find it valuable. In the current program, sometimes the feedback pop-up covers the student response, making it impossible to compare.

There are several places in the program where feedback can be improved, specifically for written exercises, definition match, and sentence scramble. Users also suggested using different colors for correct and incorrect feedback: red for incorrect, green for correct. They also wanted the ability to correct their answers.

4. Content.

Users found the story relatable and interesting. “In my country,” one user said, “everyone has different goats” (i.e., seemingly insurmountable problems), an allusion from the story. Users related to the father in difficult circumstances struggling to help his family.

Users commented that they liked the visuals, both in the story and for the activities. They noted, however, that the pictures representing some abstract words (need and enough) were a little confusing. They also liked the variety of voices and the pace of native speech on audio recordings.

5. Scope.

There are 16 activities in this unit. That’s a lot! Fifty-four percent of participants responded that that was about the right number of activities. Thirty-eight percent said the number of activities was too many. On further discussion of this issue with our smaller focus group, two relevant points were made. First, it is not so much that there are too many activities; there are just too many activities for one sitting. Users would like to be able to do the practice activities across two or three
days. Second, they would prefer the activities to be more customized. For this group, the average number of new vocabulary in this unit was just three words. This number means that they were mostly practicing familiar words. Presumably, the vocabulary practice would be more interesting and productive if learners were drilling more new words. One user suggested customizing vocabulary practice to words that are new to users. While we have wanted to do this from the start, we have not been able to do this in Storyline 3.

Several students commented that they liked the variety of practice and the use of all four skills—listening, speaking, reading, and writing. Many noted that they especially liked being able to record their own voices, listen, correct their pronunciation, and then record again. Users found the speaking and writing challenging but especially valuable.

During debriefing, users said it would be helpful to be able to take a break and come back. The practice is good, but it’s a lot of practice in one sitting. We need to build in a way to allow learners to save and continue (something could not accommodate in the user test and which we don’t know how to do in Storyline 3).

While most participants (53%) found the story to be “about the right length” and others were nearly equally divided between “too long” (22%) and “too short” (25%), observers noted that some users seemed a little impatient reading through the story. If this is true for intermediate-level students, the story should be shortened for beginning-level students.
6. Ease of use.

Users want more streamlined interactions—especially for recording and playing back their voices. This problem may be resolvable by loading the program onto a server rather than playing it off a website.

Adaptations to accommodate lessons learned about learner characteristics.

Given what the user test taught us about the nature of learners in this cohort, there are several design elements, which had been created specifically based on a classic understanding of adult learners, that need to be modified for a better final product. The chart below shows four examples of how the activities of the prototype as now designed might be modified to better meet the needs and preferences of today’s young adult learners.

<table>
<thead>
<tr>
<th>Classic Description of Adult Learners</th>
<th>Millennial Learner Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motivated and self-directed learning</td>
<td></td>
</tr>
<tr>
<td>Relevant material</td>
<td></td>
</tr>
<tr>
<td>Learn through experience</td>
<td></td>
</tr>
<tr>
<td>Learn through problem solving</td>
<td></td>
</tr>
<tr>
<td>Build on extensive previous experience</td>
<td>Desirous to understand relevance of activities and information</td>
</tr>
<tr>
<td></td>
<td>Anxious to expand skills</td>
</tr>
<tr>
<td></td>
<td>Desirous of feedback</td>
</tr>
<tr>
<td></td>
<td>Willing to take risks</td>
</tr>
<tr>
<td></td>
<td>Adaptable</td>
</tr>
<tr>
<td></td>
<td>Short attention span</td>
</tr>
<tr>
<td></td>
<td>Impatient with irrelevant information</td>
</tr>
<tr>
<td></td>
<td>Desire to connect with others</td>
</tr>
<tr>
<td></td>
<td>Technically savvy</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Current Design</th>
<th>Suggested Changes</th>
</tr>
</thead>
<tbody>
<tr>
<td>To accommodate the desire for self-directed learning we designed two ways through the activities—a default sequence through the 16 activities and a learner directed progression through the activities by means of a dropdown menu offering choices among activities identified as Reading, Writing, Listening, or Speaking. In the user test, all participants basically selected the default path through the activities.</td>
<td>This unit would be strengthened by making the goal of the unit explicit for learners. For example, learners could be told that “At the end of this unit you will tell and write the story (or part of the story) in your own words.” Making this goal explicit will help learners better understand the purpose (relevance) of each activity and help them select among the activities to strengthen skills they need to accomplish the ultimate objective for the unit. Navigation options will be more meaningful as learners are able to choose activities that best meet their needs. Adding this objective to the unit would meaning adding still more practice activities easing learners into more extended and independent language production.</td>
</tr>
</tbody>
</table>
Prototype design provided quick and succinct feedback, a simple “correct/incorrect” response. The user test clearly showed that this group of learners wants more detailed feedback including a chance to correct and improve a response. They want to know not just what they got wrong, but how to make it right. They also want some kind of reward for correct answers. There should be an element of gamification built in that offers an immediate reward in terms of points, badges, etc.

My Word List allows a customized word list for study and reference. This level of customization doesn’t go far enough. Tailoring vocabulary practice and making it adaptable would play to learners’ shorter attention spans, and desire to focus on most relevant learning. Customized, adaptive vocabulary study would be a clear improvement for this group.

The prototype does not offer any opportunities for learners to connect with other learners. Adding a place such as a monitored “learners’ café” where learners could post their own spoken or written stories at the end of the unit for other learners in the program to listen to or read and comment on might enhance feelings of connectedness and ownership. Such an option of course increases the complexity and expense of the program.

Reflection and Critique

I learned through this process that there’s no substitute for experience. Having worked on and supervised the development of a number of language-learning materials in the past, I approached creating this online unit with confidence born of ignorance of the differences in the process of producing paper-based and multimedia curricula for a classroom and developing online materials for a blended learning program. I’m more comfortable in the roles of content specialist and curriculum developer than project manager. Here are some of the things I’ve learned through this process.

An instructional designer needs to address all design layers.

My intuitive approach to curriculum design is ‘bottom up’ — my focus is on the end user experience, user interface, content implementation, and content design— essential components all. But a designer needs to be simultaneously engaged in ‘top down’ design decisions—familiarity with the affordances and limits of hardware, operating systems, software, and LMS that are critical to the success of any program. For
this project, hardware and operating systems were fixed variables. Given constraints of
time and budget, we essentially ignored LMS questions and consequently were unable to
provide the tracking, storing, and scoring functions that would make this unit more
complete. We encountered questions of compatibility of operating systems early on (my
Mac operating system is dated, and my laptop has insufficient memory to update to an
operating system and web browser that are wholly compatible with published versions of
Storyline). Having Storyline available only on computers in the lab was sometimes
difficult for programmers. Not having Storyline on my computer meant that simple edits
required written instructions from me to the team, who then implemented the changes.
Fortunately, when it came time for the user test, the operating systems and Internet
browsers for the computers at the ELC were compatible. The lesson learned is that it pays
to take time up front to know the available technology. If the lead designer does not have
adequate technical background, it is important to have a trusted team member who does.

**Understand the affordances of the software on which a program is built.**

The earlier the design team understands what’s easy, what’s possible, and what’s
not possible in a given program, the more efficient the design process will be. I can’t take
credit for the decision to build the prototype using Storyline 3, but it proved to be a good
choice. At the same time, it proved valuable to push to find creative ways to get the
program to do more than it had been designed to do (incorporating a record and playback
widget). It was a time-consuming (and therefore expensive) undertaking but worth it in
the end. Tensions between the efficiency of working within given constraints of a
program and investing time and effort to work around them for a better user experience
have to be carefully weighed.
Frequent communication and rapid response to questions sustain team momentum and make sure no one ever gets too far off track or stalled in production.

A distributed, collaborative design process presents real challenges. We had to learn to communicate precisely and frequently. At the suggestion of one of my programmers, we began communicating with pictures like the one represented in Figure 12 below.

![Figure 12](image)

A second aspect of communication is to determine a consistent system for labeling elements of the design. We would have saved a lot of time and confusion if we had determined names for each activity, question type, question number, image name, etc. at the beginning.

**Constraints of time and money are real.**

It is tempting to imagine that online learning environments are the solution to the age-old resource constraints of time, money, and imagination that limit classroom instruction, but those constraints are still important factors. One stakeholder estimated
their budget for a supplemental unit such as we created would be only 60% of what this unit cost to produce. While I’m sure a team becomes more efficient over time, what would likely happen is that the scope of the unit would be reduced to meet the requirements of budget. Digital design still requires being selective about which activities will be created. Now that we have one complete unit it will be important, as noted in the conclusion below, to compare the effectiveness and engagement power of each activity and to determine exactly how many and which activities are most valuable.

Sometimes you have to be satisfied with “good enough.” Several things on my wish list did not make it into the prototype:

- Bars to indicate to the student his or her progress through the unit
- More affirming and fun feedback for each activity
- Ways for learners to correct and repeat activities

Test early and often.

If I were doing this again I would try at the outset to identify a potential pool of user test subjects, English language learners at the novice-high to intermediate-low level, on whom to test little elements in the design at various stages of the product development. Things that could be tested in small doses, say a user test of 10 minutes, might include the length of the story, the level of language in the story, the number of words in the text that are new to users, gauging user facility with the navigation system, understanding user preferences feedback on specific activities, getting their input on what might be motivating (i.e. seeing progress, earning points etc.)

For this project I made a lot of design decisions in various iterations on theoretical understanding (referring to past design and teaching experience, using a readability index
consensus calculator, relying on classic descriptions of adult learners) and not on learners’ actual experience with the prototype. It would have been valuable to schedule time at the end of a class period for several mini user tests at various stages of the design process.

In the end it we conducted one whopping user test and it was tempting to test as many things as possible. There are an almost infinite number of variables to be tested. But you can’t test everything at once. We opted instead to focus on a few things and ask some open-ended questions.

**Self-directed learning.**

Developing this prototype has expanded my understanding of how online learning environments can promote self-directed learning. At the beginning of this project, I conceived of online learning environments primarily doing this in two ways: First, learners would be given explicit instruction in strategies for online learning (something incorporated in the Linguistics 677 program—in the form of short instructional videos—but not a part of this iteration of the EC1—Story unit, though such videos are likely to be part of the basic online practice keyed directly to classroom instruction). Second, learners would be given navigational options that allow them to select activities of greatest interest. This choose-your-own adventure strategy is built into the “Goats” unit through an always-available drop-down menu that lists activities by skill area (reading, writing, listening, and speaking).

**Encourage self-directed learning.**
In the process of designing and testing this unit, we discovered several other methods for giving learners more responsibility and autonomy in language learning as noted in the

**Provide personalized dictionary for vocabulary study.**

One activity in the unit invites learners to scan a text and click on any unfamiliar words. These words—and digital flash cards that supply the definition, images, sample sentences, and audio files—then become active in the learner’s customized dictionary. The dictionary is always available on the drop-down menu. When learners in the user test became aware of this feature, they accessed it often for study and for checking their responses.

**Customize vocabulary practice.**

An expansion of the personalized dictionary would be to build vocabulary practice activities primarily using these learner-selected words. This option would focus practice on words new to the learner and make vocabulary practice activities more efficient. While we were not able to offer this customization in the Storyline prototype, the customization could be incorporated using a more robust program.

**Provide strategic feedback.**

Some of the most appreciated activities in the unit were those that required language production—reading and speaking. With slightly more sophisticated technology, a program might be able to offer precise feedback on spelling, grammar, and sentence structure for writing or to offer pronunciation or word choice feedback for speaking. Lacking these types of feedback, we were only able
to tell learners if their written responses were correct or incorrect and provide the word or sentence written correctly. Learners readily compared their response with the correct response, noted differences, and made corrections—thus taking responsibility for their own learning. We saw this pattern too for spoken responses. The computer was not able to evaluate their recorded answers, but learners eagerly compared their spoken responses to an audio clip of a native speaker. Several learners spontaneously rerecorded their responses multiple times until they were satisfied they had approximated native-like pronunciation. This kind of feedback invites learners to listen, compare, notice differences, and self-correct—all valuable language-learning exercises.

**Give learners opportunities to improve.**

In its current design, not every activity in the “Goats” unit allows learners to correct responses or redo activities for a higher score. All participants in our user-test focus group suggested that activities include this option.
The user interface needs to be as simple and elegant as possible.

This need is especially important for people for whom English is a second language. Minimize text on the screen. Try to use a consistent vocabulary. Minimize the number of clicks it takes to accomplish any task. Eliminate, where possible, needing to cross the screen to click a button, especially for flashcard-type activities. Visually simplify design. Don’t give students too many things to do on a single screen. The interface should speak to the user, not the designer. For example, early screen designs showed which language skill was being practiced in a given activity—something important for the designer to track but likely of little interest to the users, who know whether they are speaking or reading.
Conclusion

This feels more like a beginning than a conclusion. Many aspects of this approach need further testing and refinement. For example, the design for this prototype seeks to provide comprehensive practice for new vocabulary, receptive language skills (listening and reading) and productive language skills (speaking and writing) resulting (hopefully) in learners being able to create meaningful sentence-level responses with some degree of automaticity, accuracy and confidence. We need further testing to see if this comprehensive approach (sixteen activities) allows learners to achieve the language proficiency gains we’re looking for. To what degree is it effective? How effective is it relative to other language learning strategies and content?

It would also be worth testing exactly what kinds of practice and how much practice are required for learners to achieve these objectives. Which of all the activities are most engaging and effective for learners with novice-high to intermediate-low levels of English language proficiency? Which may be superfluous? Likely part of the answer to providing the optimal number and type of activities is to give learners some choice in the activities that most fit their needs and learning priorities. After further research it should be possible to prioritize a basic core of activities and then provide supplemental activities available to learners who feel they need or want more practice.

A constant concern for language teachers is how to provide meaningful, engaging practice for novice to intermediate learners. All too often teachers and language texts use an “introduce and move on” approach wherein learners are introduced to lots of new vocabulary and grammar, given short practice activities and them move on to the next
lesson which may or may not recycle materials just introduced. Stories offer a way to extend practice in an engaging context. We can provide a valuable resource to novice- and intermediate-level English language learners by creating or curating online stories related to EC 1 lesson content and augmenting them with a variety practice exercises covering all four language skills.
Annotated Bibliography


Applying insights from psycholinguistics, these authors advocate for a story-based and guided participatory approach to grammar instruction. This “top down” approach, seeing words and phrases in a conjunction of a whole text (such as story), gives context to the functions and purpose to words, phrases, and patterns. The focus on meaning-making and sense-making “before a focus on form can be productive instructional activity” follows from the idea that words, phrases or sentences take on meaning only in connected discourse.


SAM stands for Successive Approximation Model. In his breezy narrative style, Allen detailed a design process meant to progress “in small steps [successive approximations] to allow for frequent course corrections and to avoid spending too much resource on one component” (p. 73). He walked the reader through the various stages of design—preparation phase, prototyping, constructing the prototyping, assessment tools, project planning, and iterative evaluation.


Benson and Voller highlighted the value of autonomy and independence for language learners, including a helpful focus on learner-centered language-learning materials.


Blake reviewed the current state of second language learning and advocated a radical rethinking of how languages are taught, based in part on affordances made possible by new technologies, and how to use those technologies effectively. Blake reviewed the pedagogical value of various new technological tools now available. His book was meant to introduce language-teaching professionals to new possibilities: from traditional computer-assisted language learning (CALL) to use of L2 content, virtual language courses, use of social networking, and autonomous tandem learning environments. Chapter 3 included basic instruction of how a web page works.


Elder Clark outlined a vision and means for moving forward for a new Church education initiative “to provide opportunities for education to the members of the Church wherever the Church is organized” (14:32). He explained: “Now, the opportunities we envision include high school education, English language instruction, Pathway, technical and skills-based training and certificates, undergraduate degrees in selected fields, and even master’s degrees” (14:37).


In this blog Crumpler considers advantages and disadvantages of incorporating speech-to-text technology in language learning curricula.


Everhard postulated that “the greater the degree of involvement of the ‘self’ in the assessment process, the greater the degree of autonomy that can be enjoyed and exercised by learners” (p. 114). Additionally, Everhard contended that reflection is a key to both learner autonomy and accurate self-assessment.


The study measured self-directed language-learning (SDLL) attitudes and strategies of Chinese students learning English to determine the strategies’ and attitudes’ effect on proficiency gains. The study determined that SDLL strategies have direct impact on learner language proficiency. SDLL attitudes, while not directly affecting language proficiency, are related to strategies and thereby exert an indirect influence.

This article is a meta-analysis which reviewed the finding of 350 empirical studies comparing use of newer technologies with more traditional methods and materials. The meta-analysis found limited support for claims that use of technology created measurable impact on foreign language gains. The most promising findings came from studies on computer-assisted pronunciation, especially automatic speech recognition (ASR). Online chat activities also appeared to increase learners’ language production and complexity. “The literature revealed moderate support for claims that technology enhanced learners’ output and interaction, affect and motivation, feedback, and metalinguistic knowledge” (Abstract section).


In this study, teachers created language lesson plans built around stories and games associated with the lessons as a means of teaching English to first, second, and third graders in a Colombian public elementary school. Gonzalez concluded that the use of stories and playable methodologies did increase student motivation, participation, comprehension, and acquisition of new vocabulary.


A founder of IDEO, Kelley shared strategies for and case studies of successful design and development projects. He highlighted how hiring the right people, brainstorming, collaborating, observing, rapid prototyping, designing for experience, storytelling, creating interactive space for working teams, and seeking inspiration from a variety of sources fuel the innovation process.


These authors looked at basic principles of adult learning (andragogy). They asked and tried to answer questions such as the following: How are needs and preferences of adults the same and different from those of younger learners? What are the most effective characteristics of adult training programs? The authors emphasized the value of self-directed learning, motivation, need to know, learning to learn, group learning, and adjusting for individual learner differences in the design of education programs for adult learners.


In this seminal work, Krashen put forward five principles of language learning:

1. The acquisition-learning hypothesis holds that language is acquired almost subconsciously, given copious exposure to comprehensible input.

2. The natural order hypothesis postulates that there is a natural order to the elements of language acquired.
3. The monitor hypothesis postulates that some rules of language may be learned through explicit teaching. This learned language serves as an editor or monitor of language productions.

4. The affective filter hypothesis holds that motivation, anxiety, fear, and confidence influence the rate and quality of student language acquisition.

Having laid out this theoretical framework, Krashen turned to the application of these theories in the second-language classroom.


This book, created for teachers of English as a second language, sought to integrate TESOL curriculum design theory and application—specific activities that meet the needs of language learners. The authors reviewed strengths and weaknesses of several language acquisition theories (behaviorism, audiolingual method, input theories, communicative language teaching, sociocultural theory, and task-based learning). In two chapters, the authors discussed how needs
analysis becomes the basis for goal setting and how goal setting then leads to syllabi and lesson plans. The authors wrote most of the book to introduce activities for basic language skills (listening, speaking, reading, writing, grammar, and culture), as well as appropriate assessment techniques.


Nation argues for balancing “four strands” of language learning: meaning-focused input, meaning-focused output, language-focused learning (grammar, syntax, etc.), and fluency development.


Nation and Yamamoto outlined how to apply a balanced approach of the “four strands” of language learning—meaning-focused input, meaning-focused output, language-focused learning (grammar, syntax, etc.) and fluency development—in the L2 classroom.


Rossiter examined the ways in which narrative (listening to stories, telling stories, and, particularly, writing life stories) is used in many areas of adult education (not
just language education) and concluded that stories are useful in adult learning because stories “invite . . . active meaning making” and learner involvement (p. 3). “Narrative—in its many manifestations—functions as a powerful medium of learning, development, and transformation” (p. 5).


In this study, Salimi, Kargar, and Zareian looked at the value of self-assessment of pronunciation (students comparing their own pronunciation with the pronunciation of native English speakers) on Iranian EFL students’ language development and language learning. The study found self-assessment of pronunciation to be relatively accurate (commensurate with teacher evaluations of student pronunciation). In addition, self-assessment of pronunciation fostered students’ awareness of their own performances, increased the students’ motivation, and helped them to feel ownership of their performance. Both students and teachers felt self-assessment was helpful.


A pioneer in artificial intelligence, Schank postulated the centrality of story to human knowledge, intelligence, learning, and creativity. He argued that memory (knowledge) is essentially story based and that an important form of intelligence is the ability to translate experience into stories and then to index them in ways that make it possible to retrieve, compare, analyze, and learn from them.
Interesting stories are memorable and therefore useful as teaching tools (for example, teaching cases by telling stories). A learner becomes more intelligent as he or she learns to tell stories to explain various phenomena in ways that he or she “continues to be fascinated by the failure of one’s explanations [which] creates a continuing cycle of thinking that is the crux of intelligence” (p. 231).


This influential work of Russian educational psychologist L. S. Vygotsky was first translated into English in 1978. Vygotsky asserted that learning takes place within a learner’s “zone of proximal development” (p. 84). The role of education then becomes to give learners tasks within their zone of proximal development and aid them in accomplishing these tasks with the assistance of a “more knowledgeable other” as necessary (p. 84).

Appendix

Guide to the Appendix

Appendix A: Product

The complete product can be found at the following URL.

A complete copy of the prototype has been archived with this project report. Selected slides from the product are included in Appendix A

Appendix B: Product Walkthrough

A short video introduction to the product has been archived with this project report.

Appendix C: Learner Analysis

This updated learner analysis reflects a rethinking of exactly who the end use is likely to be and how millennial adult users may differ from the adult learner described in Knowles’ seminal work on adult education.

Appendix D: Consulting Products/Precedent

This section provides a brief look at the recent explosion of richer online language-learning tools, which build on new technologies. Cloud storage, faster connections, broader accessibility to the Internet are rapidly improving language-learner experience online.

Appendix E: Content Analysis

Here you will find a table that lays out the activities of this unit against a comprehensive list of skills-based language practice objectives to ensure that relevant tasks are provided to cover each content area leading learners to greater comprehension, fluency, and confidence as well as more spontaneous, comprehensible, and complex language production.

Appendix F: Budget and Timeline

This section charts expenses for the production on of this unit (including estimates of my time and its value) and reflects briefly on how to realize efficiencies in the production of additional units.

A Gantt chart plots a rough estimate of project development across time.

Appendix G: Design Representations/Prototypes

More complete representations of several early design iterations are provided in this section including:

- Text for the story “Goats”
- Text Readability Consensus Calculator
Storyboard for artist
Storyboard for programmer
Descriptions of activities
Slides from PowerPoint prototypes for each activity

Appendix H: Evaluation Instruments

The various instruments used for evaluation and summaries of information gathered through use of those instruments are included in this section.

ELC User Test Questionnaire
ELC User Test Questionnaire Summary
ELC User Test Observation Checklist
ELC User Test One-on-One Observation Summary
ELC User Test General Observations
ELC User Test Debrief Transcript
Team Member Evaluations
Appendix A: Product

Activity 1

Learner listens to and watches the story listening for gist.

Activity 2

Learner scans the story and clicks on any word with which he or she is unfamiliar. In the final product all words in the text would be active buttons that lead to pop up cards with definitions and other study aids. Now only the red words are active. The program uses learners’ selections to build a custom vocabulary study list.
Activity 3. My word list

Words highlighted in green are active, meaning pop up study cards are available.
Activity 4. Listen and read aloud

Learners read the story aloud as they listen to it.

Activity 5: Match word to picture

Learners match the word at the left to the correct image on the right.
Example of feedback given for correct answer to questions.

Activity 6: Listen and match

Learners listen to a word and match it to an image at the right.
Activity 7: See and say

Learners look at the pictures and record the word the images represent. An audio recording of a native English speaker is supplied for comparison.

Activity 8: Definition match

Learners match the word to its definition.
Activity 9: Label image

Learners look at the images and write the word they represent.

Activity 10: Word dictation

Learners listen to the word and write what they hear.
Activity 11: Listen and repeat

Learners record the word written on the screen, listen to their recording, and try again if they like.

Activity 12: Fill in the blank

Learners click and drag words to complete sentences.
Activity 13: Sentence dictation

Listen and write

Example

Samuel lives with his family

Question

1. write what you hear

Activity 14: Listen and record
Activity 15: Timed Reading

Learners read the text as quickly as they can as a clock counts down three minutes. The program remembers how far they progressed in the text. Learners have the option of trying a second time to see if they can read more text within the time limit.

Activity 16. Sentence scramble

Learners click and drag words/phrases to create a sentence.
Activity 17: Reading Comprehension

The next day, more goats are sick. Soon all the animals are sick. Nothing Samuel's father does helps them. The next day, more goats are sick. Soon all the animals are sick. Nothing Samuel's father does helps. One by one the animals die. Soon Samuel's family has no goats.

Samuel is so sad. His mother is sad. His father worries. Without the goats, how will the family have meat to eat and milk to sell? What will we do? Samuel and his family ask.

Samuel's father says, "I will walk the long road to the big city. I will find work. I will send money so you can buy food to eat."

Appendix B: Product Walkthrough

A nine-minute screencast introduction to basic features of the program is provided at the following site:

https://drive.google.com/file/d/1IjfJDihKXuS4bebCIkbx7JrQyDtZtxE/view
Appendix C: Learner Analysis

Initially I assumed three distinct features of the audience for this product: they would be adult learners, they would be at novice mid to intermediate low proficiency levels and that they would have access to and familiarity with technology capable of delivering these online learning experiences.

I used Malcolm Knowles’s (1982) theories about the particular learning needs and styles of adult learners will be relevant (andragogy vs. pedagogy) as a conceptual guide in designing materials. These are his major tenets:
• Adults learn best when they want to learn (inner motivation and self-directed learning)
• Adults learn best what they feel they need to learn (relevance)
• Adults learn by doing (active learning)
• Adult learn through problem solving
• Adults are able to build on their extensive previous experience

I should have focused more on emerging literature on millennial learners. While a consensus does not yet exist as to how best to characterize this group, everyone has an opinion and the discussion itself is informative.

For example, an eLearning Industry article suggests millennial digital learners are: passionate with a purpose, able to multi-task, prone to challenge authority, technically savvy, adaptable, anxious to expand their skills, desirous of feedback (preferably positive), and willing to take risks (https://elearningindustry.com/8-important-characteristics-of-millennials-elearning-professionals-know).

Mary Bart (2011) https://www.facultyfocus.com/articles/teaching-and-learning/the-fivers-of-engaging-millennial-students/ references millennials’ short attention spans, preference for a variety of active learning methods, impatience with irrelevant information or activity, need to understand the rationale for policies and assignments, preference for less formal learning environments, and desire to connect with others.

The ELC students who took the user test are more like millennial learners described above than the adult learners described by Knowles—though it is not clear how well either of these descriptions fit learners of this age group living in various countries around the world where English Connect will be offered.

The second critical consideration about EC1—Story learners is that they are at novice-mid to novice high proficiency levels. The American Council on the Teaching of Foreign Languages (ACTFL) describes the reading capacity of a learner at this level as

They can identify a number of highly contextualized words and phrases including cognates and borrowed words but rarely understand material that exceeds a single phrase. Rereading is often required.

ACTFL standards characterize the listening ability of a novice-mid learner as follows:
At the Novice Mid sublevel, listeners can recognize and begin to understand a number of high-frequency, highly contextualized words and phrases including aural cognates and borrowed words. Typically, they understand little more than one phrase at a time, and repetition may be required.

These beginning proficiency levels mean that simple, consistent, comprehensible input is of paramount concern at each step of the design even as activities push these learners to higher levels of proficiency through carefully considered, and strategically scaffolded activities. In the first instance, this means clear, concise instructions for each activity and the backup of a screencast showing how to complete an activity. Secondly, it means, wherever possible, providing context (visual and narrative) to help with student comprehension. Third, it means recycling new vocabulary until it becomes familiar through a variety of activities moving learners from word-level production to sentence-level production.

Multi-paragraph stories are by definition beyond the level of beginning learners. Yet, learners must find a way to get from one-word utterances to sentence-level discourse and beyond. This project might be considered as an experiment in whether well-constructed stories can succeed in bridging to student understanding of longer, more complex blocks of language across all four language skills.

The third important consideration related to learner analysis for this potentially global program is learner access to and familiarity with technology that would be used to deliver online learning experiences. In large urban settings around the world young adults increasingly have access to smart phones—a platform to which these materials are easily adapted. The Ericson Mobility Report (2018) projects that “the number of smartphone subscriptions is forecast to reach 7.2 billion in 2024, when practically all will be for mobile broadband.” Young adults across the world are increasingly adept in using digital devices. While smartphone subscriptions may provide a rough approximation for accessibility to online learning opportunities it does not necessarily factor in the usage costs to the learner. It may be necessary to provide spaces with Wi-Fi access hubs—for example in local meeting houses—to make content delivery affordable to learners.
Appendix D: Consulting Products/Precedent

The last five years have been an exciting time in the development of online language learning programs. Several important technological advances are making possible richer, more comprehensive web-based language instruction.

- Growing internet access—4.021 billion people have now have access to the internet (McDonald 2019);
- The global explosion in access to smartphones (two-thirds of the world’s 7.6 billion people have mobile phones, half of which are smartphones);
- Powerful networks to deliver more content at faster speeds;
- Seemingly limitless cloud data storage;
- Growth of social media platforms to enable synchronous and asynchronous communication with other learners or teachers; and
- Vast improvements in natural language processing.

It will be wise to design with these ascending, accelerating trends in mind.

Developers are creating ever-more rich and engaging programs for language learners. Products like Imagine Learning (available by subscription to K-6 classrooms) and British Broadcasting Corporation (BBC) Learning Website (free online language learning program) deliver meaningful, relevant, entertaining input via smart live action or charming animated videos. “Gamification” is an important of the instruction model.

Programs like Babble and Duolingo offer fast-paced audio/visual flashcard instruction for vocabulary, basic phrases, and sentences. Many programs offer gaming elements to foster engagement and motivation. Duolingo awards ‘Lingots’, experience points (XP) and various badges for progress.

Voxy, a web-based eLearning company providing language instruction to corporate clients, allows customized instruction based on corporate priorities and materials. Instruction is individualized (beginning with learners’ language proficiency assessments), and adaptive (offering content based on past learner performance).
In many programs, personable teachers present succinct, explicit language instruction for grammar, pronunciation, and language structure via video clips. *Berlitz* offers classes with live instructors and provides practice activities online. *Italki* offers one-on-one instruction with software support. *USA Learns* offers learners the chance to record their response and compare it to the recording of a native speaker.

*Massive Open Online English Course* ([https://mooec.com/](https://mooec.com/)) offers beginning communicative instruction and practice organized around language functions such as ‘asking directions’ or ‘asking for clarification.’ *Grammar Guru* offers short instruction on language structure via sassy video clips.

Chat ‘cafes’ are part of many programs (BYU’s online language classes, for example) where learners meet virtually to enjoy communicating in the language of instruction—a practice Golanka (2014) finds to be the most beneficial affordance offered by online language-learning programs.

A quick look at what the BBC has developed in just the last four years—replacing a much lauded but by comparison static program of instruction with media-rich intermediate English language program—shows the state of art in free web-based instruction.

- *English at Work*: 66 animated episodes for intermediate learners focusing on language function such as ‘language to say you’ve changed your mind.’ Exercises
invite learners to listen for specific content, and learn a few phrases. Text of each episode is provided (about 450 words).

- English at University: 18 audio/visual episodes featuring the saga of Mary’s first year at university. It teaches useful words and phrases for a college context as well valuable as strategies for learning. (Text length about 650 words.)
- The English We Speak: 230 intermediate exercises teaching meanings of idioms through short slideshows which contextualize the phrase and give complete with several examples. A glossary highlights key words. Text supplied. (Text length 400 words.)
- Lingohack: nearly 200 video news stories from BBC news services with subtitles, glossary, and comprehension questions.
- Six-Minute English: Intermediate-level English-language audio conversations on topics of interest including explicit instruction of vocabulary, and new phrases.
- Pronunciation Workshop: Across 75 three to four-minute video podcasts, personable Tim, adapting his speaking pace to intermediate learners, explains how spoken English differs from written English. He explains elision (sounds disappear), catenation and intrusion (sounds link), assimilation and weak forms (sounds change) illustrating each concept with lots of examples. Opportunity to listen and repeat.
- Grammar Game Show: 30+ five-minute episodes explaining basic grammar principles and allowing student practice in a game show format—an attempt to make grammar instruction fun or at least entertaining.

**Activity 1**
**Episode 6: Be going to**

Mya is on her third win in a row! Is she going to continue the streak? She's going to have to use all her knowledge of be going to for victory! And be going to is the topic of the show this time. We're talking future predictions, plans and pronunciation. Do you know it all? Test yourself and find out!

- Watch the video and then test yourself below with our quiz

Show transcript
There are also a number of tools available which self-directed language learners might use independently or which might be adapted into language-learning programs. *Storyline Online* provides scores of videos with celebrities reading and talking about award-winning children’s books. *News in Levels* offers up daily news stories with content adapted to different language proficiency levels. *Google Translate* provides an ever-present glossary. Chrome’s *Speech Recognition Anywhere* extension allows a learner to turn any web content from text to voice.

On the horizon is the ability to provide learners with meaningful feedback on both written and spoken communication. With major advances in natural language processing, accurate speech to text technology will make it possible for students to record speech, a sentence or a story, which the computer can then transcribe into written text and compare to that of a native speaker. Python3 speech recognition library can be incorporated into a number of programs enabling this kind of feedback. Speech recognition software comes standard in Microsoft Word October 2018 made possible by cloud-based Cortana assistant. Mozilla is working on broadening the range of speech recognition for a variety of accents. Crumpler (2018) shares suggestions for how to incorporate these maturing technologies into language instruction.

Now is a time for invoking Tom Kelly’s (2001) adage for designing language-learning experiences: “You can’t quantify the value of letting people’s minds run wild (p. 63).”

“Alexa, teach me English!”?
Appendix E: Content Analysis

Content Treatment Matrix

<table>
<thead>
<tr>
<th>Goats</th>
<th>Language function: Professions/jobs</th>
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<tbody>
<tr>
<td>Language structure:</td>
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<tr>
<td>New vocabulary: alone, assistant, book, care, die, doctor, electrician, enough, everything, factory, far, gather, goat, grow, intelligent, machine, manager, mechanic, month, need, nothing, nurse, repair, sad, science, university, worry, wool</td>
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<tr>
<td>secretary, sell, wool, worry</td>
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<tr>
<td>Objective: Learners will be able to read Novice-high level narrative texts (high-frequency vocabulary, short sentences, logical sequence) encountered in the module and be able to answer simple questions about its content. Learners will be able to tell a short familiar story using full sentences in a way that is comprehensible to a sympathetic listener (speaking partner).</td>
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<tr>
<th>Activity</th>
<th>Vocabulary</th>
<th>Listening: word level</th>
<th>Listening: Sentence</th>
<th>Listening: fluency</th>
<th>Speaking: word level</th>
<th>Speaking: Sentence</th>
<th>Speaking: fluency</th>
<th>Reading: word level</th>
<th>Reading: Sentence</th>
<th>Reading: fluency</th>
<th>Writing: word level</th>
<th>Writing: Sentence</th>
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<td>1. Preview: listen to/view story</td>
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<td>3. Study “My Word List”</td>
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<td>5. Picture Match (picture to word)</td>
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<td>9. Label Image</td>
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<td>11. Listen and record</td>
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<td>12. Fill in the blank</td>
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<td>13. Sentence Dictation</td>
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<td>14. Listen and record (sentence level)</td>
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<td>15. Timed reading</td>
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<td>16. Sentence scramble</td>
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<td>17. Reading comprehension</td>
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<td>18. What’s happening here?</td>
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Appendix F: Budget and Timeline

As initially conceived, expenses for this project were to be part of the EnglishConnect1 program. Initially, BYUI was expected to supply student illustrations (creating images as part of class work), the MTC would supply sound studios for audio recordings, BYUI would supply programmers to incorporate activities, the ELC would provide volunteers for user tests, and I would design and test materials. Consequently, I did not carefully calculate actual costs of production. I anticipated I would spend about one week full-time developing content for a single unit. I significantly underestimated the time required to iterate design options and oversee creation of the product.

In the end, time and financial costs were as follows:

<table>
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<th>Expenses</th>
<th>Rate</th>
<th>Number of Units/Hours</th>
<th>Total to date</th>
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<td>Instructional designer (me)</td>
<td>$32 p/hour</td>
<td>112 hours</td>
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<tr>
<td>Illustrator</td>
<td>$100 p/image</td>
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<tr>
<td>Programmer #1</td>
<td>$18.50 p/hour</td>
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<td>Programmer #2</td>
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<tr>
<td>Storyline 360</td>
<td>$1299 per year</td>
<td>3 months</td>
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<tr>
<td>Observers (4)</td>
<td>$16 per/hour</td>
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<tr>
<td>Focus group participants</td>
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<td>Food for participants</td>
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<tr>
<td><strong>Total</strong></td>
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<td><strong>$7,898</strong></td>
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It took a lot of time to work through affordances of Storyline 3, redesign to fit what was possible, determine how to communicate design changes, etc. It was a learning process in many dimensions, for everyone.

Given what we’ve learned, presumably the development of additional units would be significantly more efficient. Also, if a project like this were to be scaled to meet the needs of a nonprofit English language learning program, it might be possible to employ volunteer crowd sourcing for all visual content, activity design, editing, and possibly for programming.
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<td>My word list interface (customized dictionary)</td>
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<td>3. My word list study cards</td>
<td>CC</td>
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<td>4. Listen and read aloud Movie with subtitles</td>
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<td>5. Match word to picture</td>
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<td>6. Listen and match</td>
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<td>7. See and Say</td>
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<td>8. Definition match</td>
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<td>9. Label Image</td>
<td>CC</td>
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<td>10. Sentence dictation</td>
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<td>11. Listen/read and record</td>
<td>CC</td>
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<td>12. Sentence Scramble</td>
<td>CC</td>
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<td>13. Timed reading</td>
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<td>14. Listen and replay</td>
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<td>15. Reading comprehension</td>
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<td>User Test</td>
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</tbody>
</table>

**Gantt Chart**

- **Create content:** Interactive Program
- **Review/Revised:**
Samuel lives with his father, mother, sisters and brothers in a village in green mountains far from the big city. They are happy.

His family has many goats. They work hard to care for the goats. Samuel’s mother sells goat milk and wool. Samuel loves the goats.

Samuel’s father is intelligent. He knows how to care for animals. His goats are strong. Every year there are more goats. Every year there is more milk and wool to sell. Samuel’s family has everything they need.

One day one goat is sick. Samuel’s father tries to help but the goat does not get better.

The next day, more goats are sick. Soon all the animals are sick. Nothing Samuel’s father does helps them.

One by one the animals die. Soon Samuel’s family has no goats.

Samuel is sad. His mother is sad. His father worries. How will the family have meat to eat and milk to sell?

“What will we do?” they ask.

Samuel’s father says, “I will go to the big city. I will find work. I will send money every month so you can buy food to eat.”

“We will grow more food in our garden,” Samuel’s mother says. Samuel says. “We will all help.”

Samuel and his family are sad to say goodbye to their father. When will they see him?

Alone, Samuel’s father walks the long road to the big city.

He looks for work. He finds a job in a factory. He works hard every day. He makes a little money to send home to his family.

“But,” he says sadly, “It is not enough.”

One day Samuel’s father talks to the man who fixes machines in the factory. “You are intelligent. You have a good job. How can I be a mechanic like you? I want to help my family.”

The mechanic says, “To be a mechanic you must study hard.”
Samuel’s father works hard every day and studies every night. After many months he talks to the mechanic at the factory again. “I have studied many books. May I help you repair the machines?”

“You are a good worker,” says the mechanic. “You can be my helper.” Samuel’s father gets a job as an assistant mechanic. Now, every month, he can send more money to his family in the village. But he is alone in the city.

One day he asks his friend the mechanic, “How can I get a job that pays more money? I want my family to live with me here in the city.”

“To get the best jobs you must speak English and you must be good at math,” said his friend.

“Thank you,” Samuel’s father says. He works all day as a mechanic. At night he studies. He studies English and math.

One day the manager of the factory talks to Samuel’s father. “You are a good mechanic. Are you good at math?”

“I study math every day,” says Samuel’s father.

“Do you speak English?” the manager asks.

“I study English every day,” says Samuel’s father.

“You will be my assistant,” says the manager.

Samuel’s father has enough money for his family to come to the big city. They are sad to leave the green mountains. But they are very happy to be together.

In the city all the children go to school.

“Study hard every day,” the father says.

Samuel studies hard. He studies math and English and science. He goes to university. His brothers and sisters go to university too.

Now the children are grown. One sister is a secretary. One is a nurse. One brother is an electrician. One is a teacher. Samuel is a doctor. When someone gets sick he can help.

The family gathers often—grandparents, children and many grandchildren. They remember happy times in the green mountains. They remember sad times too.

Samuel’s father is an intelligent old man. When the family talks about the sad times he says, “Yes it was a sad time. But think. What if the goats had not died?”
This online tool [http://www.readabilityformulas.com/freetests/six-readability-formulas.php](http://www.readabilityformulas.com/freetests/six-readability-formulas.php) analyzes text using six different methods and then calculates a consensus readability score. We use it to estimate the difficulty of the text in the story and make adjustments to the text to bring within what Vygotsky (1978) calls the learner’s “zone of proximal development.” The website scores the text on each of six different scales and renders a composite score. While a grade level 3 score is possibly ambitious for the learners for whom this unit is designed, the fact that all but a few words in the text should be familiar to learners gave us some confidence learners with novice-high to intermediate-low could manage this text. Learners at intermediate-mid levels who were our population for the user test found the text very readable.

**Flesch Reading Ease score:** 86.6 (text scale)
Flesch Reading Ease scored your text: easy to read.

**Flesch-Kincaid Grade Level:** 3
Grade level: Third Grade.

**The Coleman-Liau Index:** 5
Grade level: Fifth Grade

**The SMOG Index:** 4.4
Grade level: Fourth Grade

**Automated Readability Index:** 0.8
Grade level: 6-8 yrs. old (First and Second graders)

**Linsear Write Formula:** 3.2
Grade level: Third Grade.

**Readability Consensus**
Based on 8 readability formulas, we have scored your text:
Grade Level: 3
Reading Level: easy to read.
Reader's Age: 8-9 yrs. old (Third and Fourth graders)
Goats
Storyboard for artist

The story takes place in Uganda. Images below are meant to give a look and feel for the place and people—not to prescribe composition or specifics for the images. The chief purposes of the images are to illustrate the text as concretely as possible and to engage the learner.

This story is for a language-learning program for adults so we don’t want the images to be cartoony or “precious.” I’d love it if it looked and felt authentically African—specifically Ugandan, even more specifically the Baganda tribe (as this is the tribe of the man who originally told me this story). If you Google “Uganda Art” images, you’ll find a plethora of illustrations in a warm, vibrant pallet that may be appropriate for the story.

<table>
<thead>
<tr>
<th>Text</th>
<th>Image</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Samuel lives with his father and mother and sisters and brothers in a village in the green mountains far from the big city. They are happy.</td>
<td><img src="image1.jpg" alt="Image" /></td>
<td></td>
</tr>
<tr>
<td>2. His family has many goats. They work hard to take care of their animals. Samuel’s mother sells goat’s milk and goat’s hair to get money for the family. Samuel loves the goats.</td>
<td><img src="image2.jpg" alt="Image" /></td>
<td></td>
</tr>
</tbody>
</table>
1. Samuel lives with his father, mother, sisters and brothers in a village in green mountains far from the big city. They are happy.

2. His family has many goats. They work hard to care for the goats. Samuel’s mother sells goat milk and wool. Samuel loves the goats.

3. Samuel’s father is intelligent. He knows how to care for animals. His goats are strong. Every year there are more goats. Every year they have more milk and wool to sell. Samuel’s family has everything they need.

4. One day one goat is sick. Samuel’s father tries to help but the goat does not get better.

5. The next day, more goats are sick. Soon all the animals are sick. Nothing Samuel’s father does helps them.

   One by one the animals die. Soon Samuel’s family has no goats.
6. Samuel is sad. His mother is sad. His father worries. How will the family have meat to eat and milk to sell?
   “What will we do?” they ask.

7. “We will grow more food in our garden,” Samuel’s mother says. Samuel says, “We will all help.”
   Samuel’s father says, “I will go to the big city. I will find work. I will send money every month so you can buy food to eat.”

8. Samuel and his family are sad to say goodbye to their father. When will they see him?
   Alone, Samuel’s father walks the long road to the big city.

9. He looks for work. He finds a job in a factory.

10. He works hard every day. He makes a little money to send home to his family. “
11. But,” he says sadly, “It is not enough.”

12. One day Samuel’s father talks to the man who fixes machines in the factory. “You are intelligent. You have a good job. How can I be a mechanic like you? I want to help my family.”

13. The mechanic says, “To be a mechanic you must study hard.”

14. Samuel’s father works hard every day and studies every night.

15. After many months he talks to the mechanic at the factory again. “I have studied many books. May I help you repair the machines?”

16. “You are a good worker,” says the mechanic. “You can be my helper.” Samuel’s father gets a job as an assistant mechanic.
17. Now, every month, he can send more money to his family in the village. But he is alone in the city.

18. One day he asks his friend the mechanic, “How can I get a job that pays more money? I want my family to live with me here in the city.”

19. “To get the best jobs you must speak English and you must be good at math,” said his friend.

   “Thank you,” Samuel’s father says.

20. He works all day as a mechanic. At night he studies. He studies English and math.

21. One day the manager of the factory talks to Samuel’s father. “You are a good mechanic. Are you good at math?”

22. “I study math every day,” says Samuel’s father.

   “Do you speak English?” the manager asks.

   “I study English every day,” says Samuel’s father.
23. “You will be my assistant,” says the manager.

24. Samuel’s father has enough money for his family to come to the big city. They are sad to leave the green mountains. But they are very happy to be together.

25. In the city all the children go to school.
   “Study hard every day,” the father says.
   Samuel studies hard. He studies math and English and science. He goes to university. His brothers and sisters go to university too.

26. Now the children are grown. One sister is a secretary. One is a nurse. One brother is an electrician. One is a teacher. Samuel is a doctor. When someone gets sick he can help.

27. The family gathers often—grandparents, children and many grandchildren. They remember happy times in the green mountains. They remember sad times too.
   Samuel’s father is an intelligent old man. When the family talks about the sad times he says, “Yes it was a sad time. But think, what if the goats had not died?”
We used this table to detail elements of each activity.

<table>
<thead>
<tr>
<th>Activity name</th>
<th>Learner will</th>
<th>Instructions</th>
<th>Screen content</th>
<th>Check</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preview</td>
<td>Watch movie, listen for (gist)</td>
<td>Watch movie, listen to the story</td>
<td>(L1)</td>
<td>Did you like the story? Yes/No</td>
<td></td>
</tr>
<tr>
<td>Scan</td>
<td>Scan text, Click on new words</td>
<td>Look over the story, Click on new words</td>
<td>(R1) (V1)</td>
<td>Text of story divided onto five screens</td>
<td>Computer builds word study list</td>
</tr>
<tr>
<td>Vocabulary</td>
<td>Study each word in their list</td>
<td>Study words in the list that are new to you.</td>
<td>(V2) (L2) (R2)</td>
<td>Grey out words studied</td>
<td>A way to show how many of their words they have studied?</td>
</tr>
<tr>
<td>Movie with text</td>
<td>Watch movie, Read text aloud</td>
<td>Watch movie, Read text</td>
<td>(L3) (R3)</td>
<td>As divided in storyboard</td>
<td></td>
</tr>
<tr>
<td>Picture match</td>
<td>Read word, Click on correct picture</td>
<td>Read word, Click on correct picture</td>
<td>(V3) (R4)</td>
<td>One word/four pictures per page</td>
<td>Correct/Incorrect</td>
</tr>
<tr>
<td>Audio match</td>
<td>Listen to word, Click on correct picture</td>
<td>Listen to word, Click on correct picture</td>
<td>(V4) (L4)</td>
<td>One word/four pictures per page</td>
<td>Correct/Incorrect</td>
</tr>
<tr>
<td>See and Say</td>
<td>See picture, Record word</td>
<td>See picture, Record word</td>
<td>(V5) (S1)</td>
<td>One word/four pictures per page</td>
<td>Correct/Incorrect</td>
</tr>
<tr>
<td>Definition match</td>
<td>Read word, Match to definition</td>
<td>Read word, Match to definition</td>
<td>(V6) (R5)</td>
<td>Two pages of four words &amp; four definitions to a page</td>
<td>Use content from Crossword puzzle activity</td>
</tr>
<tr>
<td>Label image</td>
<td>Write correct word</td>
<td>Write correct word</td>
<td>(V7) (W1)</td>
<td>One image/word per page</td>
<td>Correct/Incorrect; if incorrect, show word spelled correctly (place above learner response so learner can compare)</td>
</tr>
<tr>
<td>Word dictation</td>
<td>Listen to word, Write what you hear</td>
<td>Listen to word, Write what you hear</td>
<td>(V8) (W2)</td>
<td>One word per page</td>
<td>Correct/Incorrect; if incorrect, show word spelled correctly (place above learner response so learner can compare)</td>
</tr>
<tr>
<td>Listen and repeat</td>
<td>Listen to word, Record what you hear</td>
<td>Listen to word, Record what you hear</td>
<td>(V9) (L6) (S2)</td>
<td>One page for scrab word on the learner’s list</td>
<td>Check what is written against original word. “Perfect!” or “Something is not right. Want to try again?” Give learners option of redoing each sentence for full points.</td>
</tr>
</tbody>
</table>
Appendix H: Evaluation Instruments

ELC User Test Questionnaire

1. Write new words you learned today:

__________________________________________________________________________

__________________________________________________________________________

2. The story has (choose one answer)
   a. too many new words
   b. about the right number of new words
   c. only a few new words

3. The story is (choose one answer)
   a. too long
   b. about the right length
   c. too short

4. Instructions for activities are clear (choose one answer)
   a. always
   b. often
   c. sometimes
   d. not often
   e. never

5. How often did you use the “How to” button? (choose one answer)
   a. always
   b. often
   c. sometimes
   d. not often
   e. never

6. When you used the “How to” button instructions for doing the activity were clear
   a. always
   b. often
   c. sometimes
   d. not often
   e. never

7. How helpful are these features of the vocabulary study cards?

<table>
<thead>
<tr>
<th>Feature</th>
<th>Very helpful</th>
<th>Not helpful</th>
</tr>
</thead>
<tbody>
<tr>
<td>definition of new word</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>recording of word</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>pictures recordings of</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>sentences using new word</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Recording of sentences using new word</td>
<td>1</td>
<td>5</td>
</tr>
</tbody>
</table>

8. Word study activities, there are (choose one answer)
   a. too many
   b. about the right number
   c. too few

9. Write two things you like about this program.

__________________________________________________________________________

__________________________________________________________________________

10. Write two things that would make this program better.

__________________________________________________________________________

__________________________________________________________________________

11. How many years have you studied English?
    a. less than 1 year  b. 1 to 2 years  c. 3 or 4 years  d. more than 4 years
<table>
<thead>
<tr>
<th>New words learned</th>
<th>2</th>
<th>9</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alone</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Die</td>
<td>1</td>
<td>9</td>
<td>1</td>
</tr>
<tr>
<td>Doctor</td>
<td>1</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Electrician</td>
<td>4</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Enough</td>
<td>7</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Everything</td>
<td>1</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>Factory</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Far</td>
<td>3</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>

2. The story has
   a. too many new words 3
   b. about the right number of new words 5
   c. only a few new words 16

3. The story is
   a. too long 5
   b. about the right length 13
   c. too short 6

4. Instructions for activities are clear
   a. always 11
   b. often 8
   c. sometimes 4
   d. not often 1
   e. never

5. How often did you use the “How to” button?
   a. always 3
   b. often 3
   c. sometimes 4
   d. not often 5
   e. never 8

6. When you used the “How to” button instructions for doing the activity were clear
   a. always 5
   b. often 4
   c. sometimes 3
   d. not often 2
   e. never 1
7. How helpful are these features of the vocabulary study cards

|                      | 1 | 2 | 3 | 1 | 2+ | 2 | 4 | 5 | 1 | 4 | 4 | 1 | 5 | 4 | 3 | 2 | 1 | 1 | 1 | 2 | 1 | 2 | 1 | 1 | 1 |
| **Definition**       |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
| **Audio word**       | 1 | 1 | 2 | 2 | 2+| 2 | 3 | 5 | 1 | 2 | 3 | 1 | 4 | 1 | 4 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 1 | 2 | 4 | 1 |
| **Pictures**         | 1 | 2 | 3 | 2 | 2+| 2 | 3 | 5 | 1 | 5 | 4 | 3 | 5 | 5 | 4 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 3 | 3 | 2 | 1 |
| **Sentences**        | 1 | 1 | 2 | 2+| 2 | 2 | 5 | 1 | 4 | 4 | 2 | 5 | 4 | 3 | 2 | 1 | 1 | 1 | 1 | 2 | 1 | 2 | 2 | 2 | 2 | 1 |
| **Audio sentence**   | 2 | 2 | 2 | 2+| 2 | 1 | 5 | 1 | 4 | 3 | 1 | 5 | 3 | 4 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 4 | 2 | 5 | 1 |

8. Word study activities

- too many: 9
- about the right number: 13
- too few: 2

9. Things you like about the program

I like to practice listening
Uses all senses: see, hear, and write.
A lot of exercise can let me remember the new words very clearly
Help me learn new words
I like because I have more comprehension
We can search new vocabulary
We could record new vocabulary
Reading and listening
Activities
Dynamic
Easy to use
Can record the word and I can listen to my voice
I can fix my wrong word
I like because I can practice my pronunciation
I can search the meaning for different words
Read and listening
Practice activities
Is very fun.
I like the dinomic [sic]
I like but recording is to long.
Definition for new words
Description of the story
I like everythings [sic] about this program
I like because, help me focus.
I learn quickly, because repited [sic] the story.
It helpful see and speaking
I like to see few time same word and I like to different way to learn new word
Many activities
Sometimes is clear
Repeat a lot the new word and you can remember better
Ear and pronounce new word
I like pictures and when I read I can see definician
I can repeat what it says. The story have pictures so it was easy to understand the story. New word I don’t now. I like dictionary.

10. Things to Change
Reduce the question. Just choose some words to practice. The program can have two-three short story. To clear voice. Too many activities. Is long. Break in program. Some errors need to be corrected. Too much record activity is not helpful to people. Use more difficult words. More words I don’t know. Every time express correct answer. It’s okay. Take a free time, because there are many activities and you can boring too fast. Be a little short. Instructions not often is clear. To many activities for one topic. The program were boring [sic] for me. Improve the form for recording. The images need is little clear. Need use the mouse much time on recording. Know the definition for any word. Only check wrong [answers]. More activities. I want to explain [sic] how to do the answer again. If can you fix about free online voice recorder page. I think activities use too long time. Maybe in typing activities can tell us how to read because sometimes. Help me for learning new word. Choose best pictures because sometimes it’s confusing. Better instruccion [sic] and more easy use.

11. How many years have you studied English

<table>
<thead>
<tr>
<th>Years</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>less than 1 year</td>
<td>14</td>
</tr>
<tr>
<td>1-2 years</td>
<td>5</td>
</tr>
<tr>
<td>3-4 years</td>
<td>2</td>
</tr>
<tr>
<td>4+ years</td>
<td>3</td>
</tr>
</tbody>
</table>
### Evaluation
ELC User Test Observation Checklist

<table>
<thead>
<tr>
<th>Learner 1</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Listen to Story</strong></td>
<td><strong>Learner questions?</strong></td>
<td><strong>Time</strong>: ____</td>
</tr>
<tr>
<td><strong>Learner response to story:</strong></td>
<td><strong>Too hard?</strong></td>
<td><strong>Too long?</strong></td>
</tr>
<tr>
<td><strong>Were there any glitches in the program?</strong></td>
<td>Y/N</td>
<td></td>
</tr>
<tr>
<td><strong>2. Scan for new words</strong></td>
<td><strong>Learner questions?</strong></td>
<td><strong>Time</strong>: ____</td>
</tr>
<tr>
<td><strong>About how many words did learners select?</strong>: ______</td>
<td>Y/N</td>
<td></td>
</tr>
<tr>
<td><strong>3. My Word List</strong></td>
<td><strong>Learner questions?</strong></td>
<td><strong>Time</strong>: ____</td>
</tr>
<tr>
<td><strong>Which features of the pop up slide did learners access?</strong></td>
<td><strong>Audio for word</strong>: _____</td>
<td><strong>Audio for sentences</strong>: _____</td>
</tr>
<tr>
<td><strong>Definition</strong>: _____</td>
<td><strong>Images</strong>: _____</td>
<td></td>
</tr>
<tr>
<td><strong>4. Listen and Read</strong></td>
<td><strong>Learner questions?</strong></td>
<td><strong>Time</strong>: ____</td>
</tr>
<tr>
<td><strong>Were there any glitches in the program?</strong></td>
<td>Y/N</td>
<td></td>
</tr>
<tr>
<td><strong>5. Picture match</strong></td>
<td><strong>Learner questions?</strong></td>
<td><strong>Time</strong>: ____</td>
</tr>
<tr>
<td><strong>Were there any glitches in the program?</strong></td>
<td>Y/N</td>
<td></td>
</tr>
<tr>
<td><strong>6. Audio match</strong></td>
<td><strong>Learner questions?</strong></td>
<td><strong>Time</strong>: ____</td>
</tr>
<tr>
<td><strong>Were there any glitches in the program?</strong></td>
<td>Y/N</td>
<td></td>
</tr>
<tr>
<td><strong>7. See and say</strong></td>
<td><strong>Learner questions?</strong></td>
<td><strong>Time</strong>: ____</td>
</tr>
<tr>
<td><strong>Were there any glitches in the program?</strong></td>
<td>Y/N</td>
<td></td>
</tr>
<tr>
<td><strong>8. Definition match</strong></td>
<td><strong>Learner questions?</strong></td>
<td><strong>Time</strong>: ____</td>
</tr>
<tr>
<td><strong>Were there any glitches in the program?</strong></td>
<td>Y/N</td>
<td></td>
</tr>
<tr>
<td>Activity</td>
<td>Time</td>
<td>Did learners use “How to” video?</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td>9. Label image (see and write)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learner questions?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Were there any glitches in the program?</td>
<td></td>
<td>Y/N</td>
</tr>
<tr>
<td>10. Word dictation (listen and write)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learner questions?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Were there any glitches in the program?</td>
<td></td>
<td>Y/N</td>
</tr>
<tr>
<td>11. Listen and repeat</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learner questions?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Were there any glitches in the program?</td>
<td></td>
<td>Y/N</td>
</tr>
<tr>
<td>12. Fill in the blank</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learner questions?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Were there any glitches in the program?</td>
<td></td>
<td>Y/N</td>
</tr>
<tr>
<td>13. Sentence dictation (listen and write)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learner questions?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Were there any glitches in the program?</td>
<td></td>
<td>Y/N</td>
</tr>
<tr>
<td>14. Shadow reading (listen and say)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learner questions?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Were there any glitches in the program?</td>
<td></td>
<td>Y/N</td>
</tr>
<tr>
<td>15. Sentence scramble</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learner questions?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Were there any glitches in the program?</td>
<td></td>
<td>Y/N</td>
</tr>
<tr>
<td>16. Timed reading</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learner questions?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Were there any glitches in the program?</td>
<td></td>
<td>Y/N</td>
</tr>
<tr>
<td>First try paragraph #</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Second try paragraph #</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17. Reading comprehension</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learner questions?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Were there any glitches in the program?</td>
<td></td>
<td>Y/N</td>
</tr>
</tbody>
</table>
## Evaluation
ELC User Test One on One User Observation Summary

<table>
<thead>
<tr>
<th>Activity</th>
<th>Glitches</th>
<th>Comments</th>
</tr>
</thead>
</table>
| 1. Listen to Story| No "How to" button for video  
Had to explain how to start video | User took photo of screen—indication of interest engagement.  
Story too long                                                                 |
| 2. Scan for new words selected | "Intelligence" should be "Intelligent"  
One user accessed audio for sentences  
Confused by images for "enough" and "need"  
User found images helpful | Users averaged clicking on 3 new words                                                                                                     |
| 3. My Word List   | "Intelligence" should be "Intelligent"  
One user accessed audio for sentences  
Confused by images for "enough" and "need"  
User found images helpful | Users averaged clicking on 3 new words                                                                                                     |
| 4. Listen and read| No "How to" button for this  
Users needed to be prompted to read aloud  
One user’s attention wandered | Users averaged clicking on 3 new words                                                                                                     |
| 5. Picture match  | "Book" doesn’t go to the next slide | Users averaged clicking on 3 new words                                                                                                     |
| 6. Audio match    | "worry" could not submit (no response) | Users averaged clicking on 3 new words                                                                                                     |
| 7. See and say    | "Sell" picture confusing  
Users need help understanding how to record  
Confused by "save to server" option | One user re-recorded until he was happy with his pronunciation                                                                                   |
| 8. Definition match| Unclear why some words are green and some are grey.  
Words “snap” to middle of definition.  
Secretary misspelled (p.4) | Feedback appears over the user answers.  
Feedback not specific enough. Users don’t know what they got right and what they got wrong.  
Users would like a change to correct mistakes.  
User clicked on one definition and it turned green. Not sure if he could still enter an answer. |
| 9. Label image    | "Alone" doesn’t have "submit" button  
"die" registers as incorrect when it is correct response  
mechanic/electrician confusing | Suggest differentiating correct and incorrect feedback screens by color: green for correct and red for incorrect  
User was shown how to access the resource “My Word List.” He used it often thereafter to check spellings, pronunciation, etc.  
User wants to know what is wrong when he gets the "incorrect" feedback.  
Users want to know what to do if they don’t know how to spell.  
Spelling is hard.  
Users want faster, more specific feedback. |
| 10. Word dictation| "Mechanic" in left column  
"Month" was counted as incorrect  
"Intelligent" was counted as incorrect | User need help operating controls for recording and then navigating back to the activity.  
User listened to audio recording and corrected pronunciation.                                                                                   |
| 11. Listen and repeat| "Machine" says "job"  
"Job" comes up twice.  
Was supposed to be "Machine" | User especially liked this activity                                                                                                          |
<p>| 12. Fill in the   |                                                                            | Users averaged clicking on 3 new words                                                                                                     |</p>
<table>
<thead>
<tr>
<th>Task</th>
<th>Issue</th>
<th>Feedback/Concern</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blank</td>
<td>User losing focus, getting tired</td>
<td></td>
</tr>
<tr>
<td>13. Sentence dictation</td>
<td>many correct answers are graded incorrect</td>
<td>learners want to see the correct answer</td>
</tr>
<tr>
<td></td>
<td>all answers coming up incorrect</td>
<td></td>
</tr>
<tr>
<td>14. Shadow reading</td>
<td>Recorders are picking up other voices</td>
<td>hard time remembering phrase he wants to say</td>
</tr>
<tr>
<td>15. Sentence scramble</td>
<td></td>
<td>User found this required thinking in a different way.</td>
</tr>
<tr>
<td>16. Timed reading</td>
<td></td>
<td>User didn’t understand why he read the same story twice.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>One user finished the story in under 3 minutes the first time.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Would like feedback letting him know he had accomplished the goal of the exercise.</td>
</tr>
<tr>
<td>17. Reading comprehension</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Time to complete

- Student 1: 71 minutes
- Student 2: 90 + minutes (spent lots of time answering observer questions)
- Student 3: 82 minutes
- Student 4: 90 + minutes
ELC User Test General Observations

With one exception all 28 users were remarkably focused and engaged.

Users confused by automatic playing of “How to” videos

Story a bit too long

Users need to have “My Word List” resource explained

Confusion over how to record—but users really liked being able to record and listen to their own voices

Users want more information in feedback. They really pay attention to the feedback slides. They want to know what is wrong with their answers when they get “incorrect” message. They want a chance to fix their mistakes.

Production skills—speaking and writing—take a lot more time but are very valuable.

Ways to give users more opportunities for self-regulated learning

Add play/pause controls to video that also allow for 10 second replay

Familiarize users with dropdown menus allowing them to skip around in the program

Familiarize users with My Word List resource—when they discovered it, they used it often and in unanticipated ways (i.e. spell check)
Facilitator: Thank for all of your help evaluating this project.

There was so much vocabulary practice. Too much? Yes? No? We had you practice listening and speaking, listening and writing, reading and writing . . . too much?

Students (1 and 3): Not too much. Not too much. It is good practice.

Facilitator: Most of these words were not new to you. Right?

Students (3): Yes

Facilitator: So you were practicing many words you already knew.

Student 1: I think it is good for all the practice.

Facilitator: You focus for a long time. Do you have a different opinion?

Student 2: Yes, the story is well. The practice makes you focus on the same questions in different forms.

Facilitator: Is that good or bad?

Student 2: A little boring.

Facilitator: A little boring?

Student 2: Yes.

Facilitator: that’s good to know. So this program was meant for students not quite as advanced as you. For beginning students. So for you there were not many new words.

Student 2: Gather, wool.

Facilitator: Gather, wool. What would you think if we were able to make all the practice activities using just the words that are new to you or words that are mostly new to you. For all the vocabulary practice just use words that are new to you. So you would not practice all the vocabulary, just the words that are new to you.

Student 2: probably I know the words and the meaning but I don’t know how to spell.

Student 1: This is good [to practice]

And always I don’t know some pronunciation. Wool? Wool?

Other students: (practicing pronunciation).

Student 2: Sell, sol. It is a new word for me. A new sound.
Facilitator: When you have to type, is that a good thing for your spelling?

Student 3: Yes. Very good

Facilitator: When you type a sentence, do you think about grammar?

Students: Yes.

Student 4: Yes, but there is a problem with this because I think I need more feedback. If I do the incorrect word I need to know the right word.

Facilitator: Yes. We have some issues with feedback. If you write a sentence and the feedback says “incorrect” you have no information about what was wrong with your sentence.

Students: Yes.

Facilitator: So if the feedback said “incorrect” and then show the correct sentence just above your sentence . . .

Students: Yes, yes.

Facilitator: then you could see . . . compare

Student 4: Yes, check.

Facilitator: You do the checking. Is that okay?

Students: Is okay.

Student 1: And then maybe you can try more. Try again.

Facilitator: you want the chance to try again? To get the correct answer?

Student 1: yes

Facilitator: That’s really helpful to know. Thank you. Does that mean you want more work?

Student 2: one word. I am not sure is in the dictionary. I don’t think was in the whole story. “Without”

Observer: So “without” was tested but, like, it was not in the dictionary so he didn’t know what it meant and it was tested as one of the words you drag and drop. But it wasn’t in the dictionary so he couldn’t figure out what it meant.

Facilitator: Did it help to have the dictionary as a resource?

Student 1: It was helpful when I had incorrect I went to see how it correct. Here I use it.

Facilitator: and then you remember the correct way?
Student 1: yes.

Facilitator: You said the story was too long. Was the story interesting?

Students 2,3,4: Yes.

Student 2: I like this story because it is a story for has all is possible. He [indistinct] his goats. He has good future for his family. Is well because now all people in my company have different goats.

All students laugh.

Facilitator: It is a true story.

Student 2: Yeah I see the picture with the childs.

Student 4: I think you should say it is a true story because it is interesting

Student 3: I like the story.  
Facilitator: so the first time you see the story you are just hearing it and looking at pictures. There is no text.

Students: yes

The reason for that is that it is supposed to help you focus on listening. Does it do that or is it frustrating?

Student 3: It’s very good.

Facilitator: It's okay?

Student 2: Yes it is really good.

Student 3: the voice is very calm. Easy to listen to. It makes me more understandable.

Facilitator: Do you think the pace, the speed of the voice was a good speed?

Student 2: Yes

Facilitator: would faster be better? Slower?

Student 3: good speed.

Facilitator: If you could change anything else about the program, what would you change?

Student 3: when you record you have to open a new window and go back and forth. It is not easy. Confusing.

Facilitator: yes it is clumsy. The problem is the software we used to make this program does not have a way to record so we have to go to a different website to borrow the recorder. It is something that needs to be fixed.
Observer: I want to know how many of you every used the record function to listen to your own voice and correct your pronunciation. Did you listen to the recording and then if it didn’t sound right record again? Manuel did that a couple of times. I want to know if the rest of you did that.

Student 4: I did that.

Student 1: When it was hard for when you record and it was strange for me because I don’t know if I do my record correct or not correct because I don’t have example. I only read this word but don’t know how it sounds.

Facilitator: That’s good to know. It is designed to the first time you are asked to record a word you hear it first and then record it. The second time you just read it and record it. It is meant to be more difficult the second time. But what you are saying is that it would be helpful in the feedback to hear a native speaker say the word. Is that right?

Student 1: Yes, yes.

Facilitator: That’s a good idea. Any other suggestions?

Student 3: When I type in the sentences so when I add the period but it is incorrect.

Facilitator: So we need to fix that in the response. If in the feedback we showed you the correct sentence then you could compare and find where the problems are. Now there is no detail to the feedback. It just says “correct” and “incorrect.” If the feedback gave you the right sentence just above your sentence, that would give you the information you want to know?

Student 1: If the period is missing . . .

Observer: Manuel has a suggestion may want to record. Manuel, tell her your idea about feedback.

Student 2: The feedback? For the color? It is because you have only red for correct, incorrect. It is confused. I don’t know if it is correct, incorrect.

Student 1: Correct is green. Go!

Student 2: green, yes.

Facilitator: so you expect more information on feedback, maybe even cued by color.

Students: Yes.
Facilitator: We said that the program was designed for students who are not as advanced as you. It is designed to give them about two hours of practice. Today it took you about an hour and twenty minutes to complete the activities. So that’s a long time. If you didn’t have to do it all at once, say 15 minutes today, 15 minutes tomorrow would you like that? To stop in the middle and start again?

Student: yes, stop and come back.

Facilitator: Are there too many activities for one story?

Student 4: too much.

Student 3: no, not too much.

Student 2: is good.

Facilitator: Do you think if there were a couple of activities at the end that ask you to describe what’s happening in this picture and record it that would be good?

Student 1: yes.

Facilitator: Even if you can’t get specific feedback?

Facilitator: Anything else? No? Then I want to thank you for all of your help.
Team Member Evaluations

**Programmer #1**
Some of the insights I had from working on the project were...

1. I learned how valuable it is to give students feedback when building a course. I felt really bad that for some sections with spelling activities, there was no feedback telling them what was the right answer. I cringed as they would look for the answer and be confused. This also made me really grateful for the usability testing we did with observations. It really helped me empathize with where they were coming from. On that note, I also saw what activities made them excited and delighted, and which made them bored.

2. I learned how vital communication is between team members. Looking back, there were some things you and James told me to do that I wish I had gotten more clarification on. As a result, some tasks were done wrong, multiple times, or not at all. So, I am going to work on being better at asking clarifying questions.

3. I learned how valuable planning can be. Because this project was so planned out, once we got the programming framework figured out, it wasn't much more to fill it in with the pictures and questions (I mean that relatively). Also, the preparation made it easier for James and I to split the workload, with me working on some activities and he working on others.

4. I saw firsthand how much the students appreciated the opportunity to listen to an example, record, speak, and listen to themselves. The students told me how much they loved exercises like this, and it made me really grateful James went through all of the effort to figure out how to do that on Storyline.

5. I feel like I understand the capabilities of Storyline much more. We created activities I didn't know were possible, but there were also a lot of activities that were adjusted or thrown out. I understand what a useful tool Storyline is, but also the limits of its usefulness. It works great for a relatively small course that needs to get done, be functional, and look good fast. But if we were to do the activities beyond "goats" we would most definitely have to design this course as an application or web page.

**Programmer #2**
I would have to agree with most of the points my colleague brought up. In addition to that, having worked with other clients and understanding the importance of having a completed product by a deadline I came to a conclusion. If I could do it again, and I would probably have said no to the more time costly changes, and tested products more. It felt like the goalposts kept getting moved. I know this is a common occurrence in product development, and it was not a problem in this project since I was being paid for any additional work. However, if producing for a client (say as a 3rd party vendor of instructional material), this can be a problem if the deadline for completion is not moved, or the costs of production are not adjusted. So this was just something that I will remember for future projects.