Using Scaffolds in English Language Development Digitally: Preliminary NSF Research Results
Agenda

- Motivation
  - Tool developed with an NSF SBIR Phase I grant

- Scaffolding in the Classroom for ELs
  - Sample Lesson Plan for Emerging Level
  - Sample Lesson Plan for Bridging Level
  - Sample Lesson Plan for Expanding Level

- Results from the NSF Study
- ELs grew from 8.7% to 9.2% between 2002 and 2013
- ELs are clearly disengaged, about 40% drop out
- The achievement gap affects districts’ Title I and III accountability metrics
Challenges with Existing Software-based ELA/ELD Solutions

1. Existing EL tools are taught solely in a separate EL class and receive support in a small portion of the day.
2. Existing tools are curriculum-dependent, leaving the majority of ELs in core subject classes unsupported, to sink or swim.
3. Existing tools do not incorporate the most recent best practices highlighted by the U.S. Department of Education, such as leveraging native language proficiency (L1) to acquire English proficiency (L2).
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  - Sample Lesson Plan for Bridging Level English Learners
  - Sample Lesson Plan for Expanding Level English Learners

- Results from the NSF Study
Moondrop Entertainment sells annual subscriptions to the Drawp for School platform to teachers, schools, and districts. The platform is a one-stop-shop for digital creation. The product has been described as an LMS for Elementary.

Over the past two-years, however, we started recognizing that we could serve a niche: EL students.

In 2016 Moondrop received funding from the National Science Foundation (NSF) as an awardee of the Small Business Innovation Research (SBIR) grant to address challenges with existing ELA/ ELD software.

Drawp partnered with the Los Angeles County Office of Education (LACOE) and Val Verde Unified School District to research and develop the first digital Language Transfer Tool.
1. **Development**: To develop a tool that would provide meaningful input in any content area by using both English and Spanish sentence frames calibrated for different cognitive and proficiency levels, and by providing audio and text versions of each frame.
2. **Research:** To test the product in three schools with a mix of newcomer students, English Learners Level 1 (EL1s) and English Learners Level 2 (EL2s), representative of the most common setup, to determine whether the tool improves the speed of L2 language development. The test subjects included 65 students from kindergarten to 4th grade in the Val Verde school district.
Development of the First Language Transfer Digital Tool

- Moondrop researched and developed a web-based solution for EL instruction using LACOE’s scaffolding tool and Drawp’s digital platform as building blocks:
  - not tied to any set curriculum, allowing its universal use in any classroom, not just English Language Development (ELD).
  - innovative because it is the first tool to leverage native language literacy
  - integrated into the Drawp for School platform.
The New Language Transfer Tool

First _____, Second _____

El siguiente evento fue _____, y luego sucedió __________.

The next event was ______________, and then happened.

* Chinese & Korean Coming Soon
The New Language Transfer Tool

- The Language Transfer Tool leverages not only the English language scaffolding sentence frames that the paper tool currently includes, but also native language scaffolding that no tool possesses.
- Frames are calibrated for different cognitive and English proficiency levels (Emerging, Bridging and Expanding). The tool also has audio scaffolds for both English and Spanish sentence frames.
Reading/Writing

- If students understand Spanish better than English, they can leverage the L1 scaffolds.
- If they have lower proficiency levels in either language, they can see versions of the sentence frame calibrated by proficiency level.

The Tool Provides the Most Robust Set of Scaffolds Available Today
Listening/Speaking

- If students have better listening than reading skills, they can use the audio version of the sentence frame.
- If they have better oral than written skills, they can speak their answers via voice recording stickers, instead of writing them.
Quick product tour!
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● Results from the NSF Study
Content or subject area is the context of the lesson.

Examine the language demands of the text and or content.

“Will the English learner struggle at the phrase level, sentence level, or word level?”

Focus on that level, and the level of English proficiency of the student, to develop your lesson.
Language Objective: Students will be able to choose words to complete the sentence frames.

We are going to start with a familiar topic (in the native language) to review some present tense verbs and introduce past tense verbs.
Language Objective:
Students will be able to choose words to complete the sentence frames.

Materials: DRAWP AP, soccer ball, word wall in the classroom
Activities:

a) Outside Total Physical Response (T.P.R.) with realia using target words- kick, soccer, coach, compete, goalie, fast, win, lose, play, jog, speed.

b) Teacher models questions and answers as the students play.

c) Oral Practice: Asks questions, “What is Juan doing? (He is kicking the soccer ball.) What was he doing? (He was kicking.) Ask students to repeat and encourage to ask each other questions.
Now Choose the Sentence Frame: Let’s Locate DOK Level 2 for Emerging Level
Identify Sentence Frames

DRAWp

• Determine which one(s) are appropriate for the content of your lesson based on the language objective and the activity.

  • “This **soccer game** takes place **the park**.”
  • “I can predict **that we will win**.”
  • “In my language, **futbol** means **soccer**.”

• Don’t forget to add these to your Library.
CREATE

- You can also create new content. For example:
  - “I __kicked__ the ball to the __goalie__."
  - “My teacher was the __coach__ and said “Run __fast__!”
  - ”When you __compete__, a team can win or __lose__.

- Add these to the Assignment.
Lesson Plan Activity And Evaluation

• Activity
  • Digital Tool Activity- create a drawing about playing soccer and use sentence frames provided by the teacher to complete the sentences using word knowledge.
  • Students reads their sentences and record with the voice stickers.
  • They share assignment with teacher, family and friends.
Lesson Plan Activity And Evaluation

• Evaluation
  • Review the student assignments to determine if words chosen were correctly chosen and appropriate to the context.
  • Reteach with those students that need additional practice.

• Reflect
  • Review verb lesson for the entire class before proceeding with the other tenses in Verbs.
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  - **Sample Lesson Plan for Bridging Level**
  - Sample Lesson Plan for Expanding Level

- Results from the NSF Study
Language Objective: Students will be able to **analyze** text and **create** a new story by writing a skit and completing frames

**Writing a Skit - Dot Day Activity**

**Title:** Vashti Learns to Be an Artist

**Setting:** School Art Class

**Character 1:** Teacher: Art class is over, Vashti. Why didn’t you draw anything?

**Character 2:** Vashti: I just can’t draw! I refuse to try.

**Character 1:** Just make a mark and see where it takes you.

**Character 2:** There! I put a dot on the paper. Happy?

**Character 1:** Yes. In fact, I’m going to frame it and hang it over my desk.

**Character 2:** That dot is not worth framing. I can make a better dot than that.

**Character 1:** See, Vashti, you ARE an artist. You just needed a little encouragement.

**Grade Level:**
- 3rd Grade
- 4th Grade
- 2nd Grade

**Subject:**
English Language Arts/Literacy

**Common Core Standards:**
- CCSS.ELA-Literacy.RL.3.10
- CCSS.ELA-Literacy.RL.2.6
- CCSS.ELA-Literacy.RL.2.3
- CCSS.ELA-Literacy.RL.3.5
- CCSS.ELA-Literacy.RL.3.2
- CCSS.ELA-Literacy.RL.4.5
- CCSS.ELA-Literacy.RL.4.10
- CCSS.ELA-Literacy.RF.4.4

**Tags:** writing, skit, dot day

**Number of canvases in this lesson plan:** 2

**Share Resources:**

[Share on Twitter](#)  [Share on Facebook](#)
Language Objective:
Students will be able to **analyze** text and **create** a new story by writing a skit completing the sentence frames.

Materials: DRAWP AP, Dot book

Activities:

a) Reviews the Dot story by asking W questions, discuss events and motivations of the characters.

b) Guided practice, model use of the template from DRAWP, and sentence frames

c) Independent task in DRAWP tool activity.
Now Choose the Sentence Frame: Let’s Locate DOK Level 4 for Bridging Level
Identify Sentence Frames

DRAWp

- Determine which one(s) are appropriate for the content of your lesson based on the language objective and the activity. Remember this is for a student reflection.
  - “What did you select to illustrate, write or dramatize? Why?”
  - Complete the sentence frame. “If the main character had ______ instead, how might the ___ have changed?”
  - Don’t forget to add these to your Library.
CREATE

- You may also create new ones to differentiate to the content and level of proficiency. For example:
  - “Our skit illustrates the concept of _____ because ________.”
- Add these to the Assignment.
Lesson Plan Activity And Evaluation

- **Activity**
  - Digital Tool Activity- create a skit using sentence frames provided by the teacher. Use the story Dot as a springboard. Student reads their story and record with the voice stickers.
  - They share assignment with teacher, family and friends!
Lesson Plan Activity And Evaluation

- **Evaluation**
  - Review the student product to determine if skit written, oral presentation and reflection are appropriate to the context.
  - Reteach with those students that need additional writing practice.

- **Reflect**
  - Determine if students, especially English Learners, mastered the task before asking for longer skits to include more details.
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- Results from the NSF Study
What animal has the longest neck in the world? If you guessed a giraffe, then you are right! Giraffes are unusual animals in many ways. They are the tallest land animals. They can be up to 18 feet tall. Baby giraffes are about 6 feet tall when they are born. A giraffe’s 6-foot-long neck weighs about 600 pounds. The legs of a giraffe are also 6 feet long. Both male and female giraffes have hair-covered horns. Male giraffes use their horns to play fight with one another.
Language Objective:
Students will be able to interpret text to complete the sentence frames.

Materials: DRAWP AP, supplemental reading, etc..
Lesson Plan Next Steps

Activities:

a) Question-Answer-Relationship (QAR) with text.
b) Teacher introduces topic with a picture. Generates interest.
c) Guided Practice. Distributes and reads the questions. Used as advanced organizers.
d) Model sentence frames.
e) Independent Reading and shared discussion with sentence frames.
f) Large group share and determine main idea.
Now Choose the Sentence Frame: Let’s Locate DOK Level 3 for Expanding Level

Lacoe: Dok: Level 3 - Analyzing: Expanding English, Sentence Frames

A _______ has _______, but a _______ has _______.

Resource Type:
Text

Tags: ela, eld, scaffolding, ell, english learner, lacoe, english

Number of canvases in this lesson plan: 6

Share Resources:

Add to Library

Add to Assignment
DRAWP
Determine which one(s) are appropriate for the content of your lesson based on the language objective and the activity.

• “Compared to all _animals, _a giraffe is the tallest land animal up to 18 feet tall.”
• “However, the baby giraffe is born 6 feet tall.”
• “The male giraffe and female giraffe are alike because both have _hair covered horns”
• Don’t forget to add these to your Library.
CREATE

You may also create new frames to differentiate the content and level of proficiency. For example:

- “They are different because the male giraffe play fights and the female doesn’t.”

Add these under the Assignment tab.
Lesson Plan Activity And Evaluation

- **Activity**
  - Digital Tool Activity- create a drawing of a location where giraffes are found (i.e. zoo, reserve) and using sentence frames provided by the teacher and complete sentences using text knowledge.
  - Students read their sentences and record with the voice stickers.
  - Then they share assignment with teacher, family and friends.
Lesson Plan Activity And Evaluation

• **Evaluation**
  - Review the student assignments to determine if words chosen were correctly chosen and appropriate to the context.
  - Reteach with those students that need additional practice.

• **Reflect**
  - Review main idea and supporting idea lesson for the entire class before proceeding with other texts.
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● Results from the NSF Study
Timeline for this project was six months.

Entry/exit interviews for both teachers and students.

Monthly observations conducted by EL specialists.

Chromebooks accessed the Language Transfer Tool with smart/white boards to demonstrate whole class.

The curriculum used by the teachers was in English, and mostly drawn from Wonders, iStation, or from reading/spelling passages that they sourced themselves.
Study Protocol

- **Quantitative data** gathered from the Woodcock Muñoz Language Survey – revised (WMLS-R) in English for L2 and Spanish for L1. (measures both absolute ability changes (W score differences) and relative ability changes (RPI differences), and offers detailed subtests and clusters for different language areas.)
The results show that the Language Transfer Tool was tremendously successful both among teachers and among students. Students stated:

- It was fun.
- It gave them confidence to speak up because they could use the voice recording stickers to express themselves.
- It was empowering for them to feel that they understood
Sample responses from students:

- “It helps me talk” (2nd grade boy)
- “After the sentence you speak and the word is in your head” (2nd grade boy)
- “It’s fun and cool” (3rd grade boy)
## Qualitative Results - Teachers

<table>
<thead>
<tr>
<th>Improvement in academic English</th>
<th>Students have been responding in complete sentences, looking for support from a provided frame before answering, or trying to come up with a frame on their own. (2nd grade teacher)</th>
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</thead>
<tbody>
<tr>
<td>Improvement in fluency</td>
<td>Many learned to slow down and listen attentively to their response. Students began utilizing the spelling patterns they learned in other text. Also, a few students began to incorporate the sentence frames in their oral responses. (3rd grade teacher)</td>
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<td></td>
<td>I think that students’ collaborative skills improved. Students were able to use their sentence frames to share and speak with their partners. (1st grade teacher)</td>
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<td>Increase in confidence</td>
<td>They are happier to work on a reading assignment on the tool rather than whole class. The tool allows them to edit their reading and not feel self-conscious when they make a mistake. (2nd grade teacher)</td>
</tr>
<tr>
<td></td>
<td>Some students did better in using complete sentences using the vocabulary words in sentence frames but, most importantly, I saw an improvement in their confidence and enjoyment in listening to themselves when using the microphone stickers. (Kindergarten teacher)</td>
</tr>
<tr>
<td></td>
<td>The focus students feel more comfortable in speaking and participating in class. They seem more sure of themselves and willing to take risks in class. (2nd grade teacher)</td>
</tr>
<tr>
<td>Increase in parental engagement</td>
<td>During parent conferences, I had explained to the parents of the targeted students what we were doing with their children. I was able to open up the tool, go into their student login and had them listen to their children’s voices. I saw a huge smile on the parents’ faces. (Kindergarten teacher)</td>
</tr>
</tbody>
</table>
**Quantitative Results**

- Overall, there were *increases* in the W score and the RPI, which means that students improved not only in absolute terms but also relative to their peers nationwide.

- There were *greater improvements* in the easier tests (picture recognition and letter-word identification) than in the harder ones (story recall and passage comprehension). This is not surprising, as students are expected to improve basic skills before assimilating more complicated ones.
Quantitative Results

• Notably, students increased 6 points in absolute reading ability (as measured by the W difference), meaning that tasks that could be performed with a 50 percent chance of success can now be performed with a 65 percent chance of success. They also moved 3 percentile points above their peers (as measured by the RPI difference).
Next Steps

- We have been approved for a Phase II grant!

- Coming soon...
  - Integration with Google Classroom
  - Text to Speech and Speech to Text
  - In-app Assessments

- Would you like to pilot?
Questions?

Thank you!

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