

## New Technologies to Assess English Learners

### Introduction

There continues to be a steady rise in the population of English language learners (ELLs) nationally, and the substantially large number of these students whose home language is a language other than English is evident in California's schools. In the 2013-14 school year, there were approximately 1.4 million ELLs in California public schools, constituting approximately 22% of the state's total enrollment in these schools. The majority of these ELLs (approximately 73%) were enrolled in the elementary grades (kindergarten through grade 6), and the rest (approximately 27%) were enrolled in the secondary grades (grades 7 through 12, and in the ungraded category<sup>1</sup>) (California Department of Education, 2014a).<sup>2</sup>

With the increasing level of rigor of academic content and the expectations for college and career readiness of our students, including our ELLs, educators are challenged to provide support to our ELLs so that they are able to succeed academically, and the gap that exists between their academic performance and those who are not ELLs no longer persists (Molle, 2015). The performance gap is evident in annual statewide summative assessments, and the need to continue to support ELLs' English proficiency development is apparent in states' Annual Measurable Achievement Objectives (AMAOs). Each state develops and implements AMAOs for holding all Title III-funded local education. There are three AMAOs: AMAO 1 refers to the annual increase in the number or percentage of students making progress in learning English; AMAO 2 refers to the annual increase in the number or percentage of students attaining English proficiency; and AMAO 3 refers to ELLs making adequate yearly progress (AYP) as described in Title 1. The gap between ELLs and non-ELLs, at least among adolescents, is affected by students' literacy skills, which both depend on and promote students' knowledge of academic language (Alvarez, Ananda, Walqui, Sato, & Rabinowitz, 2014; Snow & Biancarosa, 2003). Consequently, reducing the performance gap necessitates a focus on language development and literacy (Alvarez et al. 2014). Currently, there are limited resources available to teachers and students that provide information in a timely, formative manner about students' language development and progress toward learning goals so that instruction can be adjusted to meet students' dynamic learning needs. This paper presents theory and research-based considerations related to the design and development of a formative assessment tool and its performance tasks, intended to support students' development of English language proficiency. More specifically, this paper focuses discussion on contextualization and authentic uses of language, skill integration, and progress monitoring to support English language

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<sup>1</sup> Ungraded elementary means any student in kindergarten through grade eight in an ungraded program. This

<sup>2</sup> Other facts related to California's ELL student population include: (1) the vast majority (85%) speak Spanish at home, but there are at least 59 other languages spoken in California's schools; (2) the population's poverty rates range from 74 to 85 percent, much higher than the 21 percent overall poverty rate for California school-aged children (based on CDE Language Census, 2009–2010); (3) the majority are native-born, but not surprisingly, a large share of older ELL students are foreign-born; (4) ELL students attend schools in districts throughout the state, but they are concentrated in larger districts: 17 percent are in San Diego Unified and Los Angeles Unified alone. (based on CDE enrollment data, 2010–2011) (Hill, 2012).

proficiency development. This discussion is followed by a description of the formative assessment tool and pilot study results that have informed its development.

### **Contextualization and Authentic Uses of Language**

Research suggests that “deep learning” is facilitated through contextualization (Moltz, 2014). Such contextualized learning involves the presentation of basic skills within topics or situations that can allow for meaningful, authentic application of skills, as well as the linking of ideas and concepts in a manner that promotes learning and transfer (Alvarez et al. 2014; Echevarria, Vogt, & Short, 2012; Heller & Greenleaf, 2007; Howard, Sugarman, & Coburn, 2006; Lee & Spratley, 2010; Perin, 2011; Simpson, Hynd, Nist, & Burrell, 1997). When knowledge and skills (e.g., those related to English language proficiency) are not contextualized, the learning of targeted knowledge and skills generally has been shown to be less effective than when they are contextualized (Grubb, 1999; Perin, 2011; Simpson et al. 1997). Contextualization of language knowledge and skills includes global tasks or functions, such as asking for information, describing events, and expressing opinions, as well as situations, such as communicating in school or in a restaurant, such that language is used or applied in a meaningful way (American Council on the Teaching of Foreign Languages, 2012; TESOL, 2006). The *Test of English Language Learning* (TELL), described in greater detail below, presents elements of language (e.g., register, skills, features) in familiar and meaningful ways to facilitate language use and learning.

### **Integrated Skills**

Language learning is a dynamic, developmental process, and research supports an integrated approach to the teaching and learning of English, which generally reflects how children learn language (Walsh Dolan, 1985; Levine & McCloskey, 2013; Li, 2012). Rather than being addressed separately, the modalities of listening, speaking, reading, and writing, as well as related language skills and register, for example, are best taught and learned in an integrated manner (Levine & McCloskey, 2013; Li, 2012). For example, oral English has been shown to facilitate English reading; therefore, engaging students’ listening and speaking skills supports students’ reading ability development (August & Shanahan, 2006; Short & Fitzsimmons, 2007). Consistent with research on language learning, TELL integrates skills, as appropriate (e.g., reading and writing, reading and speaking, listening and speaking), to promote language proficiency development.

### **Progress Monitoring**

The capacity to monitor students’ progress in learning that involves a continuous cycle of gathering evidence of and evaluating student learning, providing feedback to students about their learning, and using data to adjust subsequent instruction as needed is essential in facilitating student achievement (Alvarez et al. 2014; Black & Wiliam, 1998; Heritage, 2011). Such capacity is particularly valuable as it can pertain to the dynamic nature of English language proficiency development. Therefore, in progress monitoring, as students engage in tasks, evidence of their

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current learning is gathered and evaluated to yield immediate feedback specifically linked to what the student is trying to learn or accomplish, and the feedback leads to subsequent thinking and action by the student that is intended to further his or her learning. Such engagement has value in placing the student at the center of learning, promoting student agency in learning (e.g., for self-regulated learning, self-efficacy) and embeds the assessment within an instructional activity so that instructional time is optimized (Hattie & Timperley, 2007; Heritage, 2008; Marshall & Drummond, 2006).

TELL's progress monitoring is part of a set of assessments that also includes a screener and diagnostic assessments (see description below). TELL consists of assessments for different purposes (i.e., screening, diagnosing, progress monitoring) because data are needed at different points in a learner's development to effectively facilitate learning. The need for data is particularly critical in language proficiency development because of the dynamic nature of language development.

### **The *Test of English Language Learning* (TELL): A tablet Formative Assessment Tool for K-12 English Language Learners**

With consideration of theory and research, such as those discussed previously, a tablet (iPad) formative assessment tool was developed to support the development of English language proficiency of ELLs in kindergarten through grade 12. Below is a description of this tool, the *Test of English Language Learning* (TELL).

TELL consists of tasks that can be used for screening, diagnostic, and progress monitoring purposes.

1. The screener test is used to determine if a student qualifies as an English Language Learner and therefore is entitled to benefit from available programs for ELLs.
2. The diagnostic tests (2 forms: pre- and post-) are used at the beginning of the year to establish a baseline, and at the end of the year to compare and provide measures of growth during that period. The diagnostic tests are the most robust and the most thorough of all three-test types.
3. The progress monitor tests are sets of eight forms for grades K through 8, and four forms for grades 9 through 12, that can be used monthly and bimonthly respectively, to track the growth of the language skills at regular intervals.

The tables below show an example for all three types of tests (screener, diagnostic and progress monitor) for grade levels 3-5. These sample test structures are being tested in January, February and March 2015. The tables do not illustrate the test structure of the final products to be released in summer 2015.

Table 1 presents a sample screener test for grades 3-5. Ten item types are included in this test, with 35 items total. The table includes an estimation of the amount of time that each item will take students to complete. The last column points to the main modalities of each item, identifying whether the item is discrete (only one modality, e.g., Type 1 Listen & Act), or integrated (more than one modality, e.g., Type 2 Listen and Repeat).

**Table 1: Design: Screener**

Section	No. of Items	Task-Item Type Level: Grade 3,4,5	Time in Minutes	Main Modalities
<b>Introduction</b>			1	
<b>Type 1</b>	4	Listen & Act	1	Listen
<b>Type 2</b>	6	Listen & Repeat	1	Listen-Speak
<b>Type 3</b>	4	Act by Speaking	1	Listen-Speak
<b>Type 4</b>	2	Listen, Answer, Retell	4	Listen-Speak
<b>Type 5</b>	2	Listen, Watch, Explain	4	Listen-Speak
<b>Type 6</b>	4	Read & Act	2	Read
<b>Type 7</b>	5	Order Sentence	2	Read
<b>Type 8</b>	1	Read Aloud & Answer	2	Read-Speak
<b>Type 9</b>	3	Complete Sentence	1	Read-Write
<b>Type 10</b>	4	Use Modifiers	2	Read-Write
<b>Closing</b>			1	
<b>TOTAL</b>	35		32	

Table 2 presents a sample diagnostic test for grades 3-5. The table shows eleven item types, with mention of the number of items corresponding to each type. This sample comprises a total of 40 items. The table also includes an estimation of the time each item will take. The last column points to the main modalities of each item, indicating whether the item is discrete or integrated.

**Table 2: Design: Diagnostic**

Section	No. of Items	Task-Item Type Level: Grade 3,4,5	Time in Minutes	Main Modalities
<b>Introduction</b>			1	
<b>Type 1</b>	4	Listen & Act	1	Listen
<b>Type 2</b>	6	Listen & Repeat	1	Listen-Speak
<b>Type 3</b>	4	Act by Speaking	1	Listen-Speak
<b>Type 4</b>	2	Listen, Answer, Retell	4	Listen-Speak

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<b>Type 5</b>	2	Listen, Watch, Explain	4	Listen-Speak
<b>Type 6</b>	4	Read & Act	2	Read
<b>Type 7</b>	5	Order Sentence	2	Read
<b>Type 8</b>	2	Read Aloud & Answer	4	Read-Speak
<b>Type 9</b>	5	Complete Sentence	3	Read-Write
<b>Type 10</b>	4	Use Modifiers	2	Read-Write
<b>Type 11</b>	2	Read, Answer & Summarize	10	Read-Write
<b>Closing</b>			1	
<b>TOTAL</b>	40		36	

Table 3 presents a sample progress monitor test for grades 3-5. The table shows nine item types, with an indication of the number of items corresponding to each type (for a total of 30 items). The table also includes estimated length of each item and of the whole test (in this case 26 minutes approximately). The last column lists the main modalities of each item.

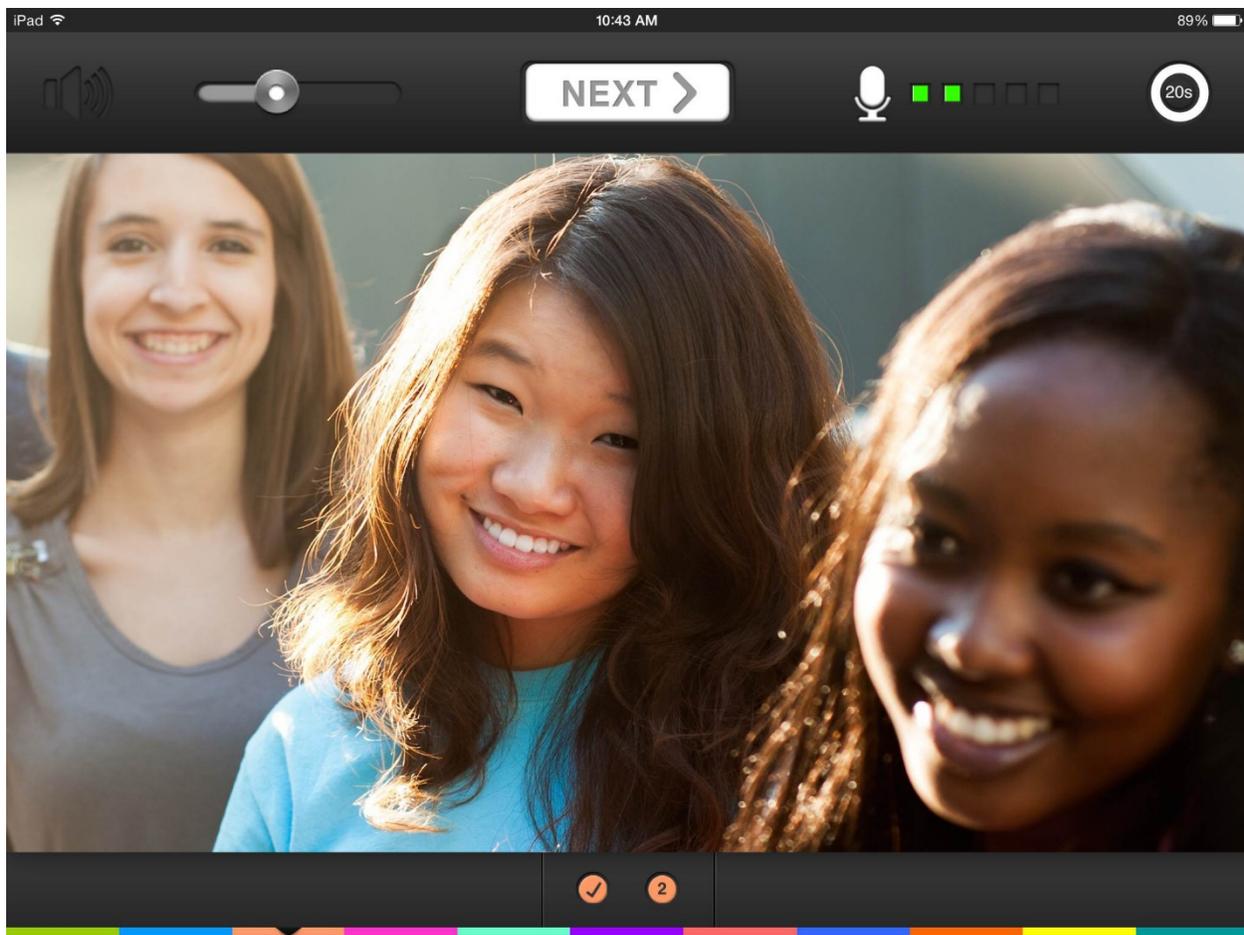
**Table 3: Design: Progress Monitor**

Section	No. of Items	Task-Item Type Level: Grade 3,4,5	Time in Minutes	Main Modalities
<b>Introduction</b>			1	
<b>Type 1</b>	4	Listen & Act	1	Listen
<b>Type 2</b>	6	Listen & Repeat	2	Listen-Speak
<b>Type 3</b>	2	Listen, Answer, Retell	4	Listen-Speak
<b>Type 4</b>	1	Listen, Watch, Explain	2	Listen-Speak
<b>Type 5</b>	4	Read & Act	2	Read
<b>Type 6</b>	5	Order Sentence	2	Read
<b>Type 7</b>	1	Read Aloud & Answer	2	Read-Speak
<b>Type 8</b>	6	Complete Sentence	4	Read-Write
<b>Type 9</b>	1	Read, Answer & Summarize	5	Read-Write
<b>Closing</b>			1	
<b>TOTAL</b>	30		26	

Below are the descriptions and the corresponding screenshots of two items to give the reader a sense of what each entails.

### Act by Speaking

In this item, the student is given an audio prompt that describes a situation with a question at the end that the student is expected to answer orally. In this case the audio prompt is: *"You have a group project due soon. Members of your group are talking about meeting at the library Saturday afternoon. You remember you already have plans with your family all day Saturday, but you are available Saturday night. What do you say to your group?"* The screenshot includes the microphone (which is active), the three green audio dots, (which indicate that the student is speaking at the right noise level), the timer (counting down) and the next button (which is available to tap when the student is done speaking).



### Copy the Word

Copy the Word is a K–2-item type only. The student is given an audio prompt saying *"This is the word x. Write the word x here."* In this case, it is the word *have*. The student then uses their finger to write the word on the second set of D'Nealian lines at the bottom. If the student makes a mistake, they can tap the eraser icon, which erases everything. Once the eraser icon is tapped, it

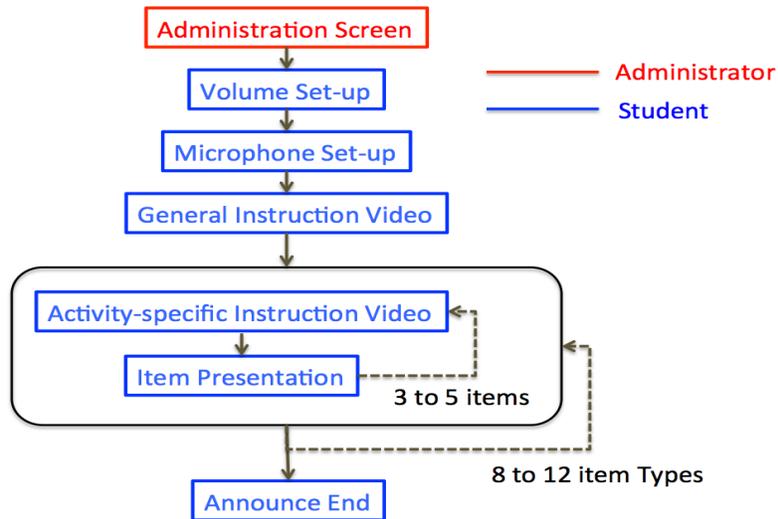
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changes to an undo icon, which brings back the writing. The Next Button is active and the timer is counting down.



### Presentation of the test

Figure 1 below provides a visual representation of how the test is presented (Bernstein, Todic, Newmeyer, Schulz & Zhao, 2013). By identifying the role of the administrator/teacher/proctor (in red) and the role of the student (in blue), it is clear to the reader that most of the steps are performed by the student, thereby highlighting one of TELL's most important features, namely, that it does not require proctoring, and consequently instructional time is fully protected. This is one of the key differentiators of TELL.

**Figure 1: Presentation Flow**

### Pilot studies

In order to examine the effectiveness of TELL's tasks, two pilot studies were conducted in 2012 (Bernstein et al. 2013). The first one was conducted with a 326 students and the second was conducted with 458 students (N=784). The following were the research questions addressed:

1. Which activities/tasks/items work?
2. Which yield the most information?
3. Which discriminate ELLs from other students?

Various test-like sequences of items (aka activities, tasks) were presented to 784 children, ages 4 to 11, in CA schools. 53% of those children were from non-English speaking homes. 40% of those children were in official ELL status at the time the pilots were conducted. The sequences selected for the pilots comprised between 24 and 45 items. These sequences were designed to cover many combinations of input and output modalities that are available through a tablet. Some of the activities were designed to elicit information about a single skill (e.g., either listening or writing) while others were designed to elicit information on several integrated skills (e.g., both listening and writing or reading and writing). The first types of activities are referred to as discrete and the second time as integrated. All activities were tested on iPads. Materials were presented in several modalities (e.g., speech only, speech with picture, text, etc.) and responses were obtained in several modalities (e.g., speech, typing, drawing, dragging, etc.).

### Procedures

Groups of 3 to 8 students ages 4 to 11 were sat before an iPad in the same room doing the same activities, but not in synchrony with each other. After the administrator entered the ID and

selected the appropriate test form, students were left to go through the test on their own, guided by video tutorials. A general video tutorial was presented at the beginning of the test to help students with general user aspects (e.g., how to go to the next item). Short specific videos on each item type preceded groups of 4-5 items presented for each type to help students understand how to perform that particular task. Most children ages 4-7 encountered 36 items while those students ages 8-11 encountered around 43 items. 28,000 responses were gathered and analyzed.

## Results

### 1. *Which activities/tasks/items work?*

Of the 29 activities presented, 27 elicited useful responses from more than 85% of students ages 8-11. 24 elicited useful responses from at least 75% of the younger students (4-7)

### 2. *Which yield the most information?*

The best are Read Aloud, Act by Speaking, Describe the Video, and Handwrite the Word.

### 3. *Which discriminate ELLs from other students?*

Across all activities and over all ages, the ELL-non-ELL score difference averaged 3% of the observed score range.

Generally, the results of pilot tests to date support the importance of contextualized, meaningful tasks, as well as the viability of presenting language modalities and/or language skills and features in an integrated manner. Additional studies will be conducted in order to further examine the effectiveness of TELL's tasks in providing timely, formative information about students' language development and progress toward learning goals so that instruction can be adjusted to meet students' dynamic learning needs, as well as to inform refinement of TELL's tasks.

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Paper prepared for the 2014 California Educational Research Association Annual Conference  
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