It's About Time:

Matching English Learners and the Ways They Take Tests by Using an Online Tool to Properly Address Individual Needs

National Council on Measurement in Education (NCME)
San Diego, CA
April 16, 2009

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Making the Case for Differential Accommodations Assignment

Most researchers are now recognizing that accommodations selection must be tailored to the needs of the individual student, and that over-accommodating can be just as problematic for the student as not providing the needed accommodations at all. For example:

- Administering a test with all possible accommodations may be overwhelming and possibly counterproductive (Kopriva, 2005a)
- Administering a test with improper "bells and whistles" (particularly un-necessary additions to the test items or forms) that are not needed can be distracting as well (for instance, see Sharrocks-Taylor & Hargreaves, 1999)

One Size Does Not Fit All

- Research also confirms that it is not possible to validly assign accommodations to groups of students based on some broad classification or status (Sireci, Li, & Scarpati, 2003)

- Current practice tends toward more ad hoc, policy-based approaches

- Emerging work presents evidence that using systematic methods to match the particular needs and strengths of individual students to specific accommodations may increase validity and be superior to using educator directed decision-making alone (Koran, Kopriva, Emick, Monroe & Garavaglia, 2006; Kopriva, Emick, Hipolito-Delgado, & Cameron, in press; Tindal, 2006). (Kopriva, 2008)

Consequences of Ineffective or Invalid Accommodations

- Consistent and appropriate accommodations decision-making is critical to the validity of standardized academic testing programs and the ability to properly use scores to compare student performance across states and districts (e.g. Kopriva, Carr, & Koran, 2006; Fuchs, Fuchs, Eaton, Hamlett, Binkley, & Crouch, 2000; Kopriva, 2000; Hollenbeck,Tindal, & Almond, 1998).

- At the individual level when accommodations decisions are not appropriate to meet the needs of individual students, test results misrepresent their knowledge and skills (Hipolito-Delgado & Kopriva, 2006).

- At the aggregate level, when accommodations decisions are inconsistent from classroom to classroom or district to district, comparisons across classrooms and districts may be unfair and meaningless (Abedi, 2007; Solomon, Jerry, & Lutkus, 2001; Fuchs, Fuchs, Eaton, Hamlett, Binkley , & Crouch, 2000).

The Future of Assessment: Customized, Computerized Approaches

- Though capacity in many states is still developing, computer-based tests, tools, and strategies, represent the future of assessment given their adaptive capabilities and flexibility to be customized.

- Such approaches allow a better understanding of the underlying cognitive processes, skills, and knowledge of all students, not just English learners and students with disabilities

- However, it is critical to start with these special populations, because unless the barriers they face on large-scale assessments are ameliorated, the inferences we can draw from test results about their content knowledge and skills are fundamentally flawed, if not meaningless.

Using an Online Tool to Help Make Systematic Decisions

Selection Taxonomy for English Language Learner Accommodations

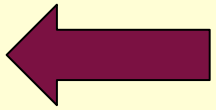
What is STELLA?

- STELLA is a Web-based tool designed to help educators match appropriate, research-based testing accommodations to the most salient background characteristics of individual English learners in order to maximize the validity of test results.
- The STELLA system collects and analyzes student background information via three electronic forms: Teacher, Parent/Guardian, and Records.
- STELLA then generates customized output for individual students, including a profile summarizing the most relevant background characteristics, recommended testing accommodations packages, and pre-test classroom support.

STELLA Overview

Data Collection
- Teacher Form
- Parent/Guardian Form
- Records Form

Preloaded in System
- Student Information Variables
- Test Accommodations
- Conversion and Consolidation Rules
- Decision-Making Rules



Taxonomies/code underpinning the STELLA system

Output
- Student Profile
- Pretest Support (Tailored Classroom Interventions)
- Accommodation Decisions for Each Student

Associated Materials
- User Manual (printable, electronic copy online)
- Online Help Pages, I-Buttons

STELLA Data Collection and Analysis

In the STELLA system, gathering data from multiple sources (Parent/Guardian, Teacher, and Records) is a way of triangulating judgments and using checks and balances in order to improve the accuracy of the student profile and helping ensure that the right set of accommodations is matched to that particular student.

Data collected on the forms is consolidated and analyzed via consolidation and conversion rules as well as a decision-making taxonomy to produce the output.

STELLA Output Pages

Accommodations: a list of recommended accommodations, including those that appear to be essential for appropriate levels of access. This output page also recommends accommodations from state-allowed lists.

Recommended accommodations are intended to support and guide —not replace—the decision-making of educators involved in assigning accommodations for large-scale assessments.

Pre-Test Support: a list of recommendations of specific assessment-related tasks that the student should be practicing during the school year generated through reconciling responses to questions on the teacher and parent forms about what the student's experiences have been versus what is needed to perform adequately on standardized tests.

Examples include purposes of classroom and large-scale testing, and experiences with different types of test questions (e.g. word problems in mathematics, inference problems in science, and audience considerations in writing prompts)

Student Profile: an expanded profile page that provides, in one place, the student's ELP and L1 levels as triangulated across information from the various forms, information on time and consistency in schools, and language instructional support.

STELLA System Output

1. Individually tailored accommodation recommendations from STELLA for each student.
   a. For large-scale test use
   b. May inform classroom practice
2. Overlap of state-allowed accommodations and STELLA-recommended accommodations.
3. Information about the student, including needs relevant to testing that could be ameliorated with specific classroom support suggestions prior to large-scale test administration.

STELLA Research and Development

Formative Development

1. State and District Survey
2. Teacher Focus Groups
3. Literature Review
4. Parent Interviews
5. Teacher Interviews
6. Expert Panel Reviews

Validation Studies

1. Cut-score Study
2. Independent Raters Study

Proper Accommodations Assignment Makes a Difference

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Results from two STELLA verification studies:

- Independent Raters Study
- Cut Score Study

Independent Raters Study: Method

3 highly qualified ESOL teachers from Maryland and a staff researcher with classroom experience identified 5 sets of accommodations for each student:

- Accommodations originally assigned by teacher (Teacher 1)
- Accommodations assigned by the teacher on the basis of the information in the STELLA Student, Parent, and Teacher Forms (Teacher 2a)
- Accommodations assigned by the teacher on the basis of all information available (Teacher 2b)
- Accommodations assigned randomly (Random)
- Accommodations recommended by STELLA (STELLA)

Independent Raters Study: Ratings

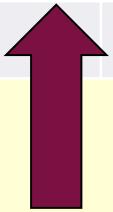
- Raters reviewed completed STELLA forms for each student before rating each of the accommodations recommendations, but were not shown any of the output from the system.

- After reviewing the forms, raters blindly rated each set of accommodations using a scale from 1 (completely optimal) to 7 (completely inappropriate).

- Raters were instructed to disregard in their ratings whether an accommodation was allowable according to their local ELL accommodations policies as these policies vary widely among educational agencies.

Findings: Estimated Means by Accommodations Source

	Mean	Std. Error	95% Confidence Interval	
SOURCE			Lower Bound	Upper Bound
Teacher1	4.971	.062	4.850	5.093
Teacher2a	4.982	.062	4.861	5.103
Teacher2b	5.132	.062	5.011	5.253
STELLA	**3.713**	.062	3.592	3.834
Random	4.998	.062	4.877	5.119



Findings suggest STELLA had best fit for students as indicated by lowest mean rating (rating scale 1-7 from most optimal to least optimal).

Findings:Tamhane Post Hoc Analyses

			Mean Diff. (I-J)	Std. Error	Sig.	95% Confidence Interval	
	(I) SOURCE	(J) SOURCE				Lower Bound	Upper Bound
Tamhane	Teacher1	Teacher2a	-.01	.087	1.000	-.24	.22
		STELLA	*1.26	.093	.000	1.01	1.50
		Random	-.03	.092	1.000	-.27	.22
	Teacher2a	Teacher1	.01	.087	1.000	-.22	.24
		STELLA	*1.27	.094	.000	1.02	1.52
		Random	-.02	.093	1.000	-.26	.23
	STELLA	Teacher1	*-1.26	.093	.000	-1.50	-1.01
		Teacher2a	*-1.27	.094	.000	-1.52	-1.02
		Random	*-1.29	.099	.000	-1.55	-1.02
	Random	**Teacher1**	**.03**	**.092**	**1.000**	-.22	.27
		Teacher2a	**.02**	**.093**	**1.000**	-.23	.26
		STELLA	*1.29	.099	.000	1.02	1.55

Based on observed means.
***The mean difference is significant at the .05 level.**

Summary: Independent Raters Study Findings

- STELLA significantly better fit than teachers and random
- STELLA significantly different from teachers and random
- Teachers no different from each other
- Teachers no different from random

Cut-Score Study: Method

The purpose was to investigate if students who received selected STELLA recommended accommodations performed better on the test relative to those who received improper accommodations or no accommodations. It was designed to provide information about the validity and effectiveness of the particular STELLA assignments utilized in the study.

- 276 3rd and 4th grade South Carolina ELL students who spanned the range of English language proficiency completed a computerized mathematics test under randomly assigned accommodations that were implemented electronically as the students took the test.

- Three accommodations were used (oral English, bilingual word translation, and picture-word “translation”) and students randomly received 1, 2 or 3 of them. One group received no accommodations.

Kopriva, Hipolito-Delgado, Emick, & Cameron, in press; Kopriva, Hedgspeth, Koran, & Carr, 2007).

Cut-Score Study: Findings

- Students who received proper accommodations performed significantly better than either students receiving improper accommodations or no accommodations

- Students who received inappropriate accommodations (as per the STELLA assignment) scored no better than those who received no accommodations.

This study not only verifies the reasonableness of the affected STELLA assignments but also suggests how important it is for students to receive proper accommodations vs. improper ones.

Kopriva, Hipolito-Delgado, Emick, & Cameron, in press; Kopriva, Hedgspeth, Koran, & Carr, 2007).

Identifying Central Components of an Effective Accommodations Assignment System

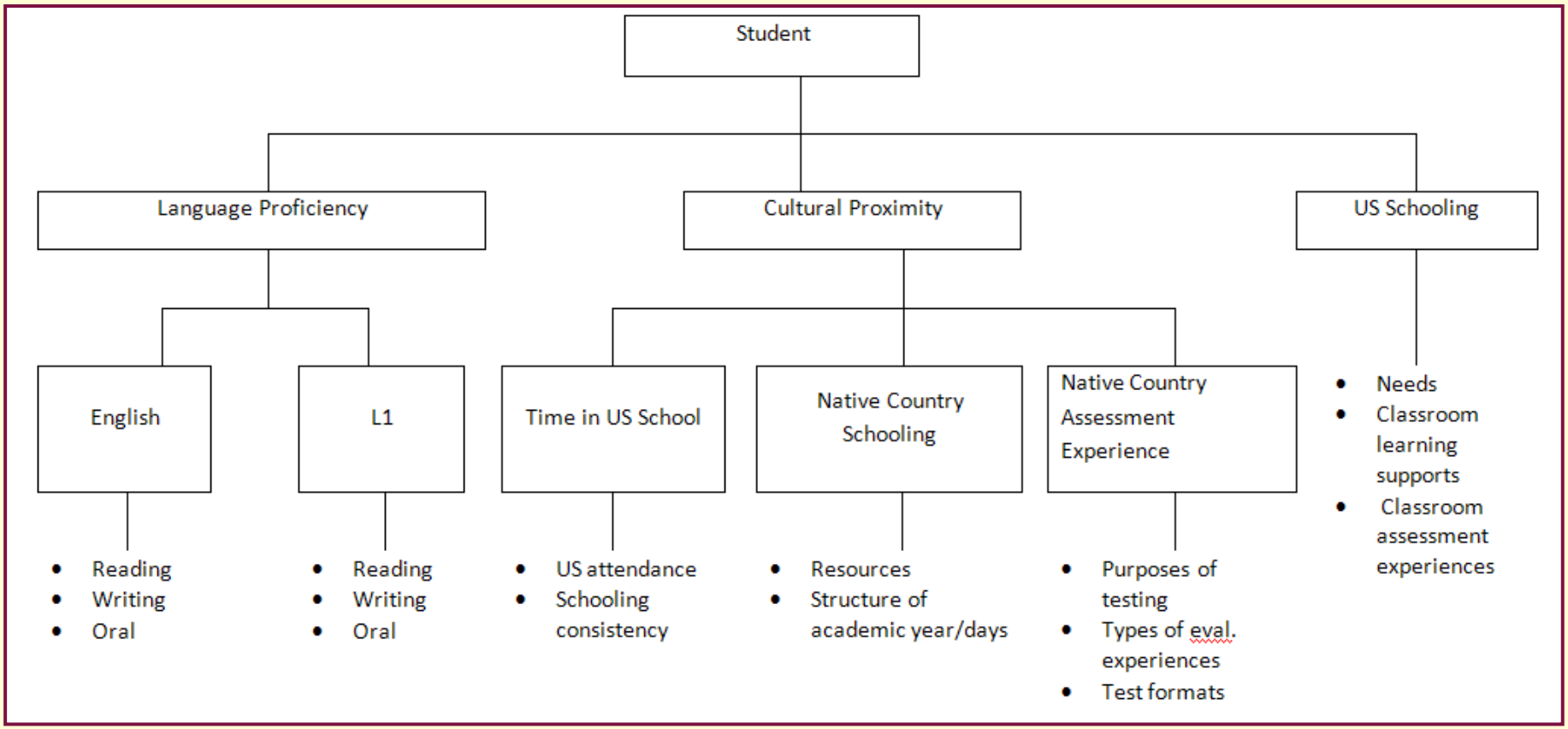
- Salient Student Background Variables
- Promising Accommodations
- Data Collection, Consolidation, and Decision-Making Mechanisms (STELLA)
- Accommodations Recommendations (STELLA)

What Are the Most Relevant Student Characteristics?

A number of researchers have narrowed the list of background characteristics by focusing specifically on those that are most relevant to accommodations selection. A brief survey of the literature indicates a high level of agreement as to which student factors are most salient to accommodations decision-making (See Butler and Stevens (1997); Abedi (2007); Rivera and Collum (2006); Kopriva, Hedgspeth, Koran, & Carr (2007); Kopriva et al. (2005a); Winter et al. (2007); and Saville-Troike (1991)).

- English language proficiency (ELP)
- Native Language (L1) Proficiency
- Cultural Proximity
- Time and Consistency in U.S. Schools
- U.S. Learning and Assessment Experiences

Research-Based Relevant Student Background Variables



What Are the Most Promising Research-Based Accommodations?

- **Forms**
  - Access-based form in English
  - Native language or dual language forms as available
- **Tools**
  - Bilingual glossary, general or test specific
  - Picture-word glossary
  - English glossary
  - Problem solving tools
- **Administration**
  - Oral English
  - Oral home language
  - Small group
- **Response**
  - Written in native language/code switching
  - Oral English
  - Oral in native language/code switching
  - Demonstrated or modeled response

See Rivera and Collum (2006); Abedi (2007); Pennock-Roman and Rivera (2006); and Sirici, Li, & Scarpati, (2003)

Active Characteristics of Accommodations

- Active characteristics are those aspects of the accommodations that define which skills are needed to access them.

- For example, oral administration in English requires that students have sufficient auditory capability and the ability to understand the language of English at the level of language complexity in the written text which is being recited.

- If a student does **not** have sufficient ELP in listening to benefit from an oral administration in English and/or significantly higher ELP in reading than in listening, an oral administration may prove a distraction/hindrance.

Accommodations "Packages" for English Learners

- The multiple facets of various accommodations in a package interact to produce a net increase or decrease in construct-irrelevant variance.
- One package of accommodations may be considered the preferred or best-practice package for a particular student.
- Alternate (available, allowable) packages may compensate for the student's need nearly as well—or notably less well.
- Linguistic accommodations in particular (such as different forms of the test that incorporate linguistically-oriented changes in the presentation of items or the availability of language aids, for instance a bilingual glossary or ability to respond in L1) function most optimally as packages.
- Packages that include a mixture of form and/or administration, tools, and response options seem to be particularly useful for ELL students with little English proficiency.

Primary (Linguistic) and Secondary Accommodations

- **Primary** linguistic accommodations are often supported by secondary accommodations such as extra time—for example, dual language administrations require extra time because working back and forth between the two language versions of each item takes more time than completing a comparable test in one language (Choi & McCall, 2002).

- **Secondary** accommodations, such as extra time or reading directions in L1, are those which are not sufficient if used without one or more primary accommodations.

Example: Bilingual Glossary in Accommodations Package

- For example, a student may have a level of English proficiency such that a bilingual glossary may not be needed if the student is to receive a form of the test where items are presented in plain or simplified English or in their native language.

- However, if that student were to receive a standard English version of the test form, he or she would likely need the bilingual glossary to help him or her access the items.

Putting It All Together:

EXAMPLE STUDENT PROFILES AND OUTPUT FROM STELLA

STELLA Onscreen Student Profile 1

Home | Setup | Students | Reports | Help | Logout

Student Details

Mason, Allegra

RETURN

Profile | Charts | Pretest Support | Accommodations | Print/Archive

Date Forms Completed: 06-Apr-09

click to update

GENERAL BACKGROUND

Grade: This student is enrolled in grade: 2
Age: This students age is: 8
Language: The language spoken at home of this student is: Spanish
Language: The native country language of academic instruction: Spanish

COMPOSITE LANGUAGE PROFICIENCY LEVELS

Composite English Language Proficiency (ELP) Levels: *[Click on the i-button for more information]*

Reading: 1
Writing: 1
Listening: 2
Speaking: 1

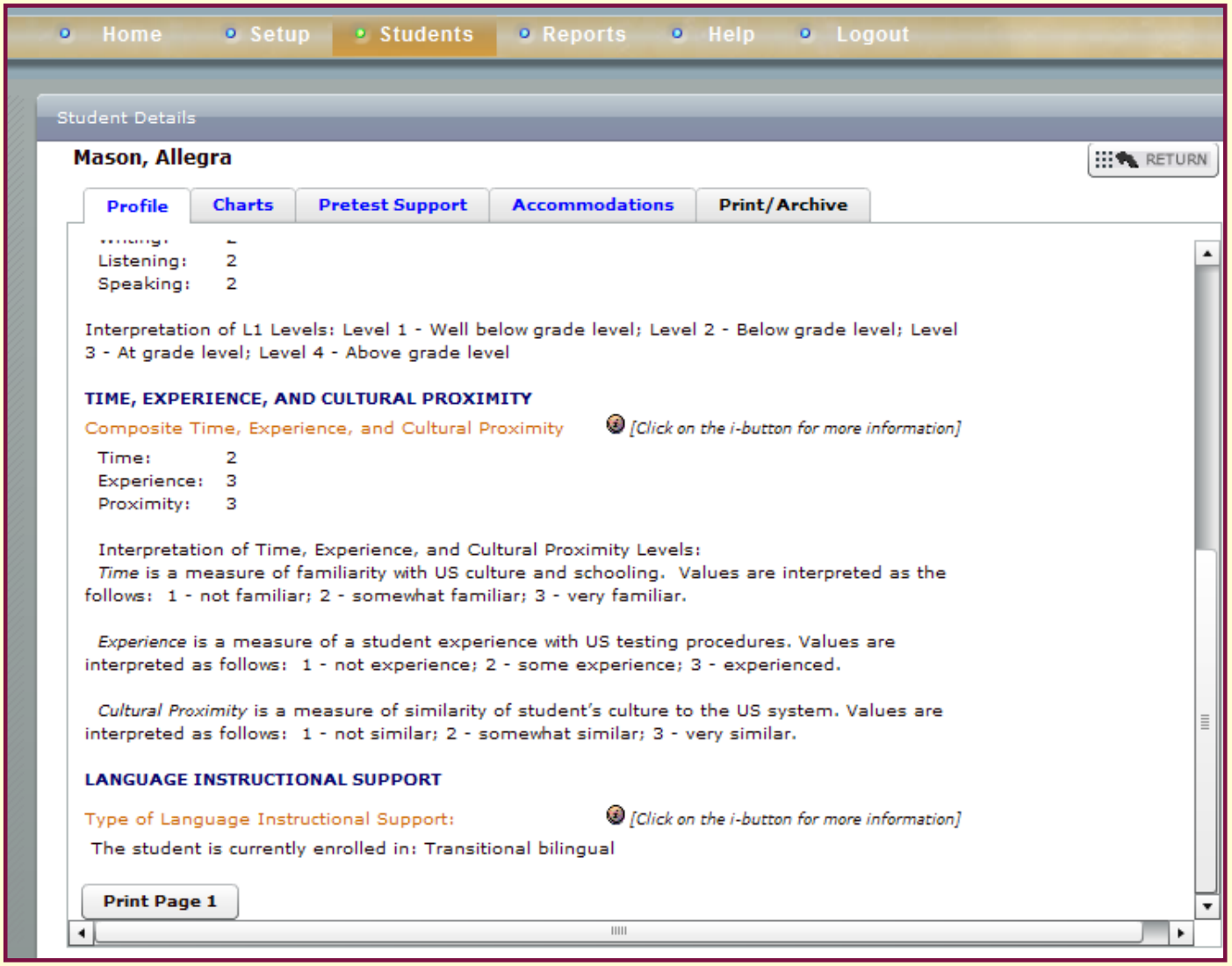
Interpretation of ELP Levels: Level 1 - Beginner; Level 2 - Low intermediate; Level 3 - High Intermediate; Level 4 - Advanced; Level 5 - Bridging

Composite Primary Language (L1) Levels: *[Click on the i-button for more information]*

Reading: 2
Writing: 2
Listening: 2
Speaking: 2

Interpretation of L1 Levels: Level 1 - Well below grade level; Level 2 - Below grade level; Level 3 - At grade level; Level 4 - Above grade level

STELLA Onscreen Student Profile 1, continued



STELLA Output: Pretest Support

PRETEST SUPPORT

FAMILY ASSESSMENT NIGHT

Designed as an orientation to the role that assessment plays in U.S. education, as well as to U.S. standardized testing practices, this assessment accessibility strategy is intended especially for ELL families and students who have little familiarity with U.S. standardized tests and testing accommodations. This parent involvement program includes orientation to U.S. large-scale testing and state/local testing requirements, as well as ongoing classroom assessment. Language liaisons, or specially trained individuals who speak the languages of the ELL families, guide discussion by parents with their children on testing in their country of origin and the similarities to and differences from U.S. testing. Parents, along with language liaisons, identify areas of cultural discontinuity and use that information to help explain expectations to the students. Parents receive training on accommodations, provide background information on the decision-making process (including information on special needs), and sign off on the selected accommodations for their child (if this is part of the program). After the test event, students and parents debrief the experience in preparation for future test-taking.

CLASSROOM SUPPORT

For some students, limited classroom support to practice selected accommodation or other testing procedures may be warranted. For others who are not used to U.S. standardized testing practices, purposes, or procedures, attending Family Assessment Night may not be sufficient to address multiple sources of inexperience or misunderstanding. For instance, the cultural or schooling experiences of some students may be disparate from their U.S. peers, so these students may need more detailed explanations about why or how we test, or they may need practice with U.S. procedures, testing formats, or specific accommodations.

* answering multiple-choice questions
* bubbling in the answers on the test itself and/or on a separate sheet
* answering questions requiring students to supply their own answers
* answering open-ended questions requiring the student's ideas rather than definitions, paraphrasing information, or reproducing information verbatim

STELLA Output Student Profile 1: Accommodations for Content Taught in L1/Both

RECOMMENDED ACCOMMODATIONS

Language Used for Instruction

	English	L1	Both
Math		X	
Science		X	
Social Studies		X	
Language Arts		X	

Note: Since this student currently only receives instruction in L1, no accommodations are listed for content taught in English.

ACCOMMODATIONS FOR CONTENT TAUGHT IN L1 OR BOTH

Best-Practice	Alternate
Forms	*Forms*
L1/Dual	L1/Dual
	Access Based (2nd Choice due to 1st Choice form not available)
Administration	*Administration*
Tools	*Tools*
BWL	BWL
	*English Gloss (_____ due to _____)
Response	*Response*

** Based on the information analyzed in STELLA, asterisked accommodations are considered essential for the valid assessment of this student.*

STELLA (Print Version) Student Profile 2

PROFILE INFORMATION

GENERAL BACKGROUND

Raelene is 13 years old and is enrolled in grade 5. Her language spoken at home is *language* and her language of academic instruction was *highestAcademic*. Raelene student is currently enrolled in a language instructional support program: *program*

COMPOSITE LEVELS IN STELLA

ELP Language Levels

Reading:	3	(Beginner)
Writing:	1	(Beginner)
Listening:	3	(High Intermediate)
Speaking:	2	(Low Intermediate)

L1 Language Levels

Reading:	4	(Above Grade Level)
Writing:	4	(Above Grade Level)
Listening:	4	(Above Grade Level)
Speaking:	4	(Above Grade Level)

Time, Experience, Proximity

Time:	2	(Somewhat Familiar)
Experience:	3	(Experienced)
Proximity:	3	(Very Similar)

STELLA (Print Version) Student Profile 2: Accommodations for Content Taught in English

RECOMMENDED ACCOMMODATIONS

Language Used for Instruction

	English	L1	Both
Math	X		
Science	X		
Social Studies	X		
Language Arts	X		

ACCOMMODATIONS FOR CONTENT TAUGHT IN ENGLISH

Best-Practice

Forms

*Dual

Administration

Extra Time

Tools

Highlighters

*BWL

Response

*Explain answers in Written or Oral Eng/L1/Code-Switching

Demonstrate Responses

Alternate

Forms

*Dual

Access Based (2nd Choice due to 1st Choice form not available)

Administration

Extra Time

*Oral Eng (1st Choice due to _____)

Tools

Highlighters

*BWL

Response

*Explain answers in Written or Oral Eng/L1/Code-Switching

Demonstrate Responses

** Based on the information analyzed in STELLA, asterisked accommodations are considered essential for the valid assessment of this student.*

Next Steps: Availability and Adaptability of STELLA

1. The STELLA platform is built to accommodate different SEA and LEA allowed accommodations.

2. If and when users meet certain criteria, the host can customize STELLA with new accommodation limbs and branches.

STELLA Link on WIDA Consortium Web site

www.wida.us/UW/STELLA

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