

Review of Literature on Allowable Accommodations on the  
*Pruebas Puertorriqueñas de Aprovechamiento Académico*  
(PPAA) for Students with Disabilities and Limited Spanish  
Proficiency

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## Introduction

The No Child Left Behind Act of 2001 (NCLB) requires that all students enrolled in public schools, including all students with disabilities (SWDs) as well as second language learners—English learners (ELs) or limited Spanish proficient (LSP) students<sup>1</sup>— be included in state accountability programs. Students must participate in annual academic content assessment in language arts and mathematics in grade levels 3 through 8 and in one high school grade. They must also participate in a science assessment at least once in each of the grade ranges 3-5, 6-8, and high school. NCLB and the Individuals with Disabilities Education Improvement Act (IDEIA, 2004, often referred to as IDEA, its predecessor) mandate that students with disabilities be provided appropriate accommodations to allow for their meaningful participation in state assessments; NCLB extends these accommodation requirements to ELs/LSP students. Both NCLB and IDEIA require that state education agencies (SEAs) establish accommodation guidelines for the selection and administration of these assessments and that the number of students using accommodations during state and district assessments be reported publicly.

In response to these requirements, the number of SWDs and second language learners who participate in district and statewide testing programs has greatly increased in recent years, as has the number of students using accommodations (Crawford, 2007; Kim, Schneifer, & Sinskind, 2009; Shafer Willner, Rivera, & Acosta, 2008). With the increased use of accommodations has come greater scrutiny regarding the meaning of scores derived from tests in which accommodations have been provided. Assessment accommodations, when appropriately selected for second language learners and SWDs, allow these students a more accurate demonstration of their knowledge and skills; however this expectation is often based on assumptions that have yet to be tested adequately.

The Puerto Rico Department of Education (PRDE) defines accommodations as any change to procedures or practices used to provide equal access to grade-level content for students with special needs. The purpose of accommodations is to eliminate the barriers to academic standards caused by a student's disability or language differences and increase access to academic content, without reducing the expectations for learning (Puerto Rico Department of Education, 2004).

The PRDE has a set policy on accommodations to support the participation of SWDs and LSPs in the annual island-wide assessment— *Pruebas Puertorriqueñas de Aprovechamiento Académico* (PPAA). However, the PRDE is required to review the implementation of its accommodations policy to ensure that all students who take the PPAA have the best opportunity to demonstrate what they know and can do. The required accommodation review includes three components which correspond to the following three evaluation questions:

1. To what extent do the accommodations selected for individual students when taking the PPAA correspond appropriately to the accommodations used in instruction as indicated in students'

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<sup>1</sup> These rules relate to students who are not proficient in the language of instruction. These students are English learners (ELs) in U.S. states, the District of Columbia, and U.S. territories and Spanish learners (LSP students) in Puerto Rico. Throughout the report the term English learners (ELs) will be used when referring to students with limited English proficiency, the term students with limited Spanish proficient (LSPs) will be used to refer to students learning Spanish in Puerto Rico, and the term second language learners will be used to address both of the groups simultaneously.

Individualized Education Plans (IEPs) or, for students with LSP, other evidence of the accommodations used in instruction?

2. To what extent are the accommodations selected for individual students implemented at the time of testing?
3. Based on a review of the literature, to what extent are the accommodations frequently used on the PPAA effective at addressing obstacles that may interfere with a student's ability to demonstrate what he or she knows and can do on the PPAA?

The accommodation review will be implemented in the 2011-2012 school year. The PRDE will use the results of this review to: 1) provide formative feedback so practitioners can make immediate corrections and 2) inform decisions about training and support for improving the selection and implementation of its accommodations.

This report provides a summary of the findings for the third component of the accommodations review which is to evaluate the extent that accommodations frequently used on the PPAA are effective at addressing obstacles that may interfere with a student's ability to demonstrate what he or she knows and can do. To address this evaluation question, the PRDE requested a review of literature of the effectiveness of these accommodations in addressing obstacles commonly encountered by SWDs and LSP students. The PRDE also requested an analysis of how Puerto Rico's usage and implementation of accommodations compares to accommodation usage and implementation in policies created by other SEAs throughout the United States.

## **Validity Argument**

The PRDE employs an argument-based approach to validity evaluation (Kane, 2006) to ensure that the combined evidence about its assessments contributes to a comprehensive evaluation of critical aspects of the assessment and accountability system. The U.S. Department of Education has recognized the argument-based approach by funding projects to apply this model to state assessment systems. Using this approach, edCount, LLC worked with the PRDE to develop a detailed interpretive argument (IA) to identify specific priorities for evaluating the validity of the use and interpretation of PPAA scores.

The IA incorporates input from PRDE staff and Puerto Rico teachers who participated in focus groups during the 2009-2010 school year (see Exhibit 1). The IA also addresses the U.S. Department of Education's peer review feedback on the gaps and weaknesses of PRDE's assessment system. Major threats to the validity of the PPAA cut across the range of traditional validity concerns, including the alignment of the assessment with the standards, the quality of administration and scoring, the accessibility of the assessment to all students, and the appropriate interpretation and use of the test scores.

The PPAA accommodations review is represented in the IA under the claim that "students take the assessment under conditions that allow them to demonstrate what they know and can do in relation to academic expectations." This review addresses three specific assumptions that underlie this claim.

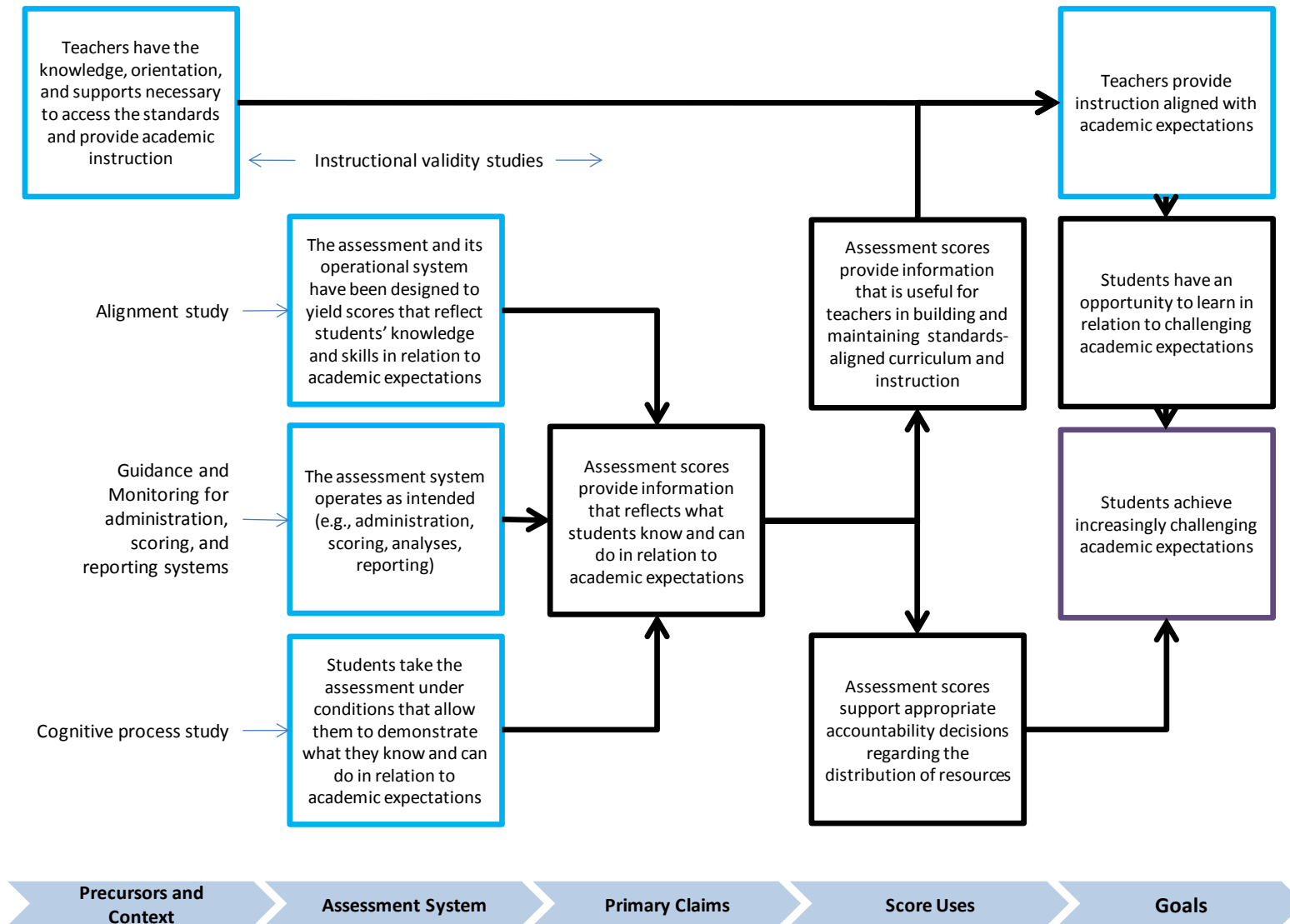
1. Students are provided with assessment accommodations based on information relevant to their individual needs that allows them to demonstrate what they know and can do on the assessment.

2. Assessment accommodations allowed on the PPAA are effective at addressing the obstacles that may interfere with a student's ability to demonstrate what he or she knows and can do on the PPAA without affecting the validity of the constructs being measured.
3. Decisions about the selection and usage of allowable accommodations on the PPAA are informed by research, expert opinions and best practice guidelines that show these accommodations to be effective.

To collect evidence that supports the claim and the three underlying assumptions researchers used the following research questions and subquestions to guide their review of literature:

1. What are the current patterns of accommodations usage for the PPAA?
  - a. What accommodations are available for the PPAA?
  - b. What is the process for selecting accommodations for individual students each year?
  - c. What is the prevalence of these accommodations and how consistent is that over time?
2. What are the background and selection considerations for accommodations frequently used on the PPAA by SWD and LSP students?
  - a. What obstacles do these accommodations address?
  - b. What does the literature say about their effectiveness?
  - c. How common are these accommodations in Puerto Rico and how does that compare with uses in other states?
  - d. What should IEP teams (and whoever makes the decision for LSP students) consider when determining student eligibility for these accommodations?

**Exhibit 1. Interpretive Argument (IA) for the PPAA**



## Background about Accommodations for SWDs and ELs/LSP Students

Accommodations are “tools and procedures that provide equitable instructional and assessment access” (Thurlow, Thompson, & Lazarus, 2006). They are changes in instructional/assessment materials or procedures implemented to increase accessibility of content to a specific student population without altering the content. The purpose of accommodations is to reduce or eliminate the effects of a student’s disability or, in the case of second language learners, to eliminate barriers to academic content caused by language differences. Researchers and other experts in the field consider these changes fair and reasonable when standard conditions do not provide an equal opportunity for all students to demonstrate achievement of knowledge and skills (Abedi & Lord, 2001; Acosta, Rivera, & Shafer Willner, 2008; Butler & Stevens, 2001; Christensen, Carver, VanDeZande, & Lazarus, 2011; Holmes & Duron, 2000).

IDEIA (2004) requires that all states ensure that students with disabilities are included in state and local educational assessment and accountability systems and mandates that students with disabilities be provided accommodations as appropriate to allow for their meaningful participation in state assessments. Specifically, IDEIA states that “all students with disabilities are included in all general state and district wide assessment programs, with appropriate accommodations” (Individual with Disabilities Education Improvement Act, 2004, Sec. 612 (a) (16) (A)). NCLB legislation extends these accommodation requirements to second language learners (NCLB Title 1, Part A, Sec. 111 (3) (C) (ix II)).<sup>2</sup> These two pieces of legislation together establish the role of accommodations in general state assessments.

Accommodations are divided into two categories: a) instructional accommodations used in the classroom to improve SWDs’ and second language learners’ access to the general education curriculum, and b) assessment accommodations used to improve accessibility of assessment content to a specific student population, allowing them to access, process, and respond to test items without reducing the learning expectations for the students (Crawford, 2007). There is consensus in the field that accommodations used during testing should also be used during instruction so that students have the opportunity to experience accommodations prior to using them in a testing situation (Bolt & Thurlow, 2004; Lazarus, Thompson, & Thurlow, 2006). Students’ lack of familiarity with an accommodation may limit their optimal use of the accommodation on a test. Aligning accommodations for instruction and assessment leads to more effective teaching and learning and should translate into improved outcomes for students (Cox, Herner, Demczyk, & Nieberding, 2006).<sup>3</sup>

All accommodations must meet standards of validity and reliability established in the Standards for Educational and Psychological testing (American Education Research Association, American Psychological Association, & National Council of Measurement in Education, 1999). Accommodations aim to reduce *construct-irrelevant variance* (i.e., differences in test scores that are not attributable to differences in the construct being measured by the test) that may be introduced during the administration of standardized assessments. For example, though the ability to see is not the target of assessment on a math exam, the inability to see may impact the score of a visually impaired student

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<sup>2</sup> These rules relate to students who are not proficient in the language of instruction. These students are English learners (ELs) in U.S. states, the District of Columbia, and U.S. territories and Spanish learners (LSP students) in Puerto Rico.

<sup>3</sup> For the remainder of the report the word accommodations will refer to assessment accommodations, unless otherwise indicated.



(Sireci, Scarpeti, & Li, 2005). Similarly the assessment scores of second language learners may be affected by construct-irrelevant language demands of an assessment. Appropriate accommodations focus on factors that affect the performance of students who receive them, but which are not themselves the construct being evaluated by the assessment (Francis, Rivera, Lesaux, Kieffer, & Rivera, 2006). In summary, “accommodations improve the validity of assessment results...because they ensure that the test is measuring what it was designed to measure and not some other skills or ability, or the student’s disability” (Lazarus, Thurlow, Lail, & Christensen, 2009). Changes that can potentially affect the construct being measured by an assessment are called modifications or non-standard/non-allowed accommodations.

The effectiveness of an accommodation refers to the extent to which: a) students who are deemed eligible for the accommodation perform better when they use it than when they do not, and b) performance of students who are deemed not eligible for the accommodation does not change across accommodated and non-accommodated conditions. In other words, an accommodation must be differentially effective, improving the scores of students who need it, but not of those who do not need it. The positive effect of an accommodation only for those students who need it and not for others is referred to as a *differential boost* (Francis et al., 2006; Kieffer, Lesaux, Rivera, & Francis, 2009; Sireci et al., 2005).

The use of accommodations must be appropriately documented. IDEIA mandates that for SWDs, accommodations be indicated in the student’s Individual Education Plan (IEP). The IEP serves a vital role in assigning accommodations to students and in ensuring that the correct accommodations are available to students during the test (Shriner & Destefano, 2007; Ysseldyke et al., 2001). The accommodation guidelines of all 50 states, District of Columbia, and Puerto Rico currently require that a student’s IEP be used in decision making about the administration of accommodations (Lazarus et al., 2009). In Puerto Rico the *Comité de Programación y Ubicación* (COMPU) team is responsible for student IEPs (Puerto Rico Department of Education, 2004). According to NCLB, all second language learners must have a language learning plan that documents their accommodations. In Puerto Rico, however, accommodations for LSP students are written into a student’s Language Development Plan (LDP) and the *Comité de Revisión de Lenguaje* (CoREL) is the team responsible for outlining the plan and monitoring its progress.

### **Common Accommodations for SWDs**

Currently, all 50 states, the District of Columbia, and Puerto Rico have established written guidelines indicating which accommodation can be used by SWDs on the general assessments; however, there is great variation in the established policies and practices (National Center for Educational Outcomes, 2012). As summarized by the Council of Chief State School Officers (CCSSO), these policies typically divide accommodations into four categories: setting, presentation, response, and timing (Thompson, Morse, Sharpe, & Hall, 2005; see Exhibit 2)

## Exhibit 2. Commonly Used Assessment Accommodations

Accommodation Category	Examples of Accommodations
Setting	<ul style="list-style-type: none"><li>• individual test administration</li><li>• small group</li><li>• separate room</li><li>• seat location/proximity</li></ul>
Presentation	<ul style="list-style-type: none"><li>• large print materials or materials written in Braille</li><li>• magnification devices</li><li>• sign language interpretation</li><li>• human reader or screen reader (computer reads the print to the student)</li><li>• audio or video recorded material</li></ul>
Response	<ul style="list-style-type: none"><li>• proctor/scribe</li><li>• type or speak into a word processor or Braille</li><li>• write answers in the test booklet instead of on answer sheet</li><li>• calculation devices or spelling and grammar devices</li><li>• visual and graphic organizers</li></ul>
Timing/scheduling	<ul style="list-style-type: none"><li>• extended time to take an assessment or complete an assignment<sup>4</sup></li><li>• assignments broken into smaller parts and presented over a longer period of time</li><li>• frequent breaks</li></ul>

Research has found no clear link between broad student disability categories and appropriate accommodations. In fact, the accommodation guidelines of 12 states prohibit using nature/category of disability as the only variable in making decisions for students with disabilities (Lazarus et al., 2009). As pointed out by researchers, “it is quite possible for students with very similar disabilities to require very different accommodations” (Luke & Schwartz, 2007). Simply prescribing an accommodation to a student without knowledge of that student’s condition can inadvertently impede his or her performance on an assessment rather than aiding it (Chiu & Pearson, 1999; Elliott, McKeivitt, & Kettler, 2002; Fuchs, Fuchs, Eaton, Hamlett, & Karns, 2000). Because of the possible adverse effect of accommodations, decisions about students’ accommodations should be based on information about the students’ individual characteristics and needs. The different categories of assessment accommodations are described in greater detail below. In order to identify the accommodations most frequently allowed in each accommodation category, reviewers looked at the *2009 State Policies on Assessment Participation and Accommodation for Students with Disabilities* (Christensen, Braam, Scullin, & Thurlow, 2011) —the most recent review of SEA accommodation policies conducted by National Center on Educational Outcomes.

### Setting

Setting accommodations change the location or conditions of a setting in which a student takes an assessment. They can range from a change of the student’s desk location in the classroom to taking an assessment in a setting such as the hospital or the student’s home. These types of accommodations can

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<sup>4</sup> For example: 50% extended time would allow a student 90 minutes to complete a 60 minute timed assessment; 100% extended time on an assignment would allow a student two days to complete an assignment for which other students are given one day.

benefit students who are easily distracted in large group settings or students who use additional accommodations that may distract others (e.g., human reader, scribe, or frequent breaks). The accommodations can also be used with students who have physical disabilities that require specific room conditions (e.g., lighting or accessibility) or students who need access to special equipment such as a computer. The most frequently allowed setting accommodations include small group (allowed by 48 SEAs), individual group (allowed by 47 SEAs), carrel (allowed by 37 SEAs), seat location/proximity (allowed by 35 SEAs) and separate room (allowed by 33 SEAs; Christensen, Braam, et al., 2011). Testing in a student's home is considered the most controversial accommodation in this category, as it presents many challenges with the monitoring of the test administration procedures and substantially alters the testing conditions from those of other students. This accommodation is allowed in 18 states, though at least one state's policy clearly indicates that the use of the accommodation can have implications for scoring and aggregation (Christensen, Braam, et al., 2011).

### *Presentation*

Presentation accommodations change how an assignment or assessment is given to a student by providing an alternate mode of access which may be auditory, multi-sensory, tactile, or visual. Presentation accommodations may benefit students who have difficulty or an inability to visually read standard print because of a physical, sensory, or cognitive disability. Most frequently allowed presentation accommodations in state accommodation policies are large print (allowed by 49 SEAs), Braille (allowed by 47 SEAs), sign interpret directions (allowed by 45 SEAs), and read aloud directions (allowed by 32 SEAs; Christensen, Braam, et al., 2011).

### *Response*

Response accommodations allow students to complete assessments in different ways (alternate format or procedure) or to solve or organize problems using some type of device or organizer. Response accommodations may benefit students with physical disabilities by allowing them to scribe or use specialized equipment to record answers or information. Students with learning disabilities that impact sequencing, directionality, and organization may benefit from a response accommodation that allows them to write on a test booklet instead of an answer sheet, or an accommodation that provides a graphic or visual organizer to arrange information. These accommodations are also useful for visually impaired students. Most frequently allowed response accommodations in state accommodation policies include Braille (allowed by 39 SEAs), answer in test booklets (allowed by 36 SEAs), proctor/scribe (allowed by 35 SEAs), and typing of answers using a computer or typing machine (allowed by 24 SEAs; Christensen, Braam, et al., 2011).

### *Timing/Scheduling*

Timing accommodations, also called scheduling accommodations, are changes in the amount or structure of the timing or scheduling of assessments. These accommodations increase the allowable length of time to complete an assignment or assessment, or change the way the time is organized for the assessment. These accommodations serve several objectives including providing extra time for students to read and process material, write their responses or complete a task, or use certain equipment. They can also help students with short attention spans stay on task. Students who require additional time or a change in the organization of the timing to complete assignments or assessments due to a physical or cognitive disability may benefit from timing accommodations. Testing with breaks (allowed by 42 SEAs), extended time (allowed by 38 SEAs), and time beneficial to student (i.e., administering the test at a time that is most advantageous to the student; allowed by 37 SEAs), are the

most frequently allowed accommodations in this category in state accommodation policies (Christensen, Braam, et al., 2011)

### **Accommodations for Second Language Learners (ELs and LSPs)**

Accommodations for second language learners, such as LSP students in Puerto Rico or ELs in the United States, aim to reduce the confounding of content knowledge/skills and language on content area tests administered in the students' non-native language (Wolf, Herman, & Dietel, 2010). Their purpose is to remove the construct-irrelevant variance caused by an item's linguistic complexity. For example, research has found that even second language learners with high levels of conversational language skills often lack exposure to academic language (i.e., the type of language used in academic settings, such as classrooms, assessments, or textbooks) which affects their level of achievement on assessments (Francis et al., 2006). In addition, second language learners require more cognitive resources to process the language than native speakers for whom language processing is largely automatized (McLaughlin, 1990). Accommodations for second language learners aim to remove these linguistic barriers, and measure the content level knowledge of the students.

Though there is overlap between accommodations for SWDs and those for second language learners, in order for accommodations from the disability framework to be effective with second language learners, they must be proven to specifically target the language difficulties of this population (Francis et al., 2006). A recent review of state policies on accommodations for ELs found that though all 50 states and the District of Columbia have state policies that address the accommodations for second language learners, many states are using the disability framework in determining allowable accommodations; as recently as 2008, 25 state policies used a disability taxonomy (timing, setting, presentation, and response categories) to classify their accommodations (Shafer Willner et al., 2008). A second language learner responsive taxonomy, developed by Rivera et al. (2006), divides second language learner accommodations into two categories: those that provide direct linguistic support and those that provide indirect linguistic support (see Exhibit 3). Direct linguistic support accommodations involve adjustments to the assessment with the intent of reducing the linguistic load necessary to access the content of the test. The direct linguistic accommodations most frequently allowed by SEAs in their policies include using commercial bilingual dictionaries (35 states) and reading test items aloud (26 states; Shafer Willner et al., 2008). Indirect linguistic accommodations involve adjustments to the conditions under which a test is taken to allow students to more efficiently use their linguistic resources. The most frequently allowed indirect linguistic accommodation by SEA accommodation policies is extended time (40 states; Shafer Willner et al., 2008).

Although it may appear that second language learners have similar needs based on being language learners, each second language learner requires very different accommodations. While these students "share a common need to improve their academic language ability..., they vary greatly on their current proficiency levels as well as on a wide range of other educationally relevant variables" (Butler & Stevens, 2001). For second language learners, the effectiveness of an accommodation may be influenced by several factors, including the language of instruction, student's level of proficiency in the language of instruction, and student's level of proficiency in the native language (Hofstetter, 2003). Thus, as with SWDs, decisions about accommodations for second language learners should be made on an individual basis.

### Exhibit 3. Commonly Used Accommodations for LSP Students

Accommodation Category	Examples of Accommodations
Direct linguistic support	<ul style="list-style-type: none"><li>• bilingual dictionary</li><li>• read aloud (test directions and/or test items)</li><li>• native language dictionary or glossary</li><li>• translated or bilingual version of assessment</li><li>• modification to the linguistic complexity of the assessment</li></ul>
Indirect linguistic support	<ul style="list-style-type: none"><li>• adjustment to test environment</li><li>• extended time or change in assessment timing/schedule</li><li>• additional accommodations to address other issues (e.g., if the student has a disability)</li></ul>

## Methodology

To determine usage patterns for both SWDs and LSP students and to gather information about the most frequently used assessment accommodations on the PPAA, reviewers examined data from the 2008-2009, 2009-2010, and 2010-2011 school years on assessment accommodation use in Puerto Rico. Reviewers accessed the PPAA record of assessment (ROA) for each school year, a document collecting information on all students taking the examination which also documents student accommodations. The most frequently used accommodations for SWDs were extended time (73.8%), reader (sometimes referred to as read aloud by literature and SEAs; 17.8%), change in setting (13.9%), and frequent pauses (4.5%). For LSP students, the most frequently used accommodations were extended time (45.9%), reader of test directions (18.9%), and bilingual dictionaries (5.9%). Reviewers also examined the *Manual de Acomodos*—PRDE’s Accommodation Manual for SWDs (Puerto Rico Department of Education, 2004). This document is adapted and modeled on CCSSO’s *Accommodation Manual: How to Select, Administer and Evaluate Use of Accommodations for Instruction and Assessment of Students with Disabilities* (Thompson, Morse, Sharpe, & Hall, 2005).

Upon identifying the most frequently used accommodations, reviewers identified and reviewed empirical research about their effectiveness. Since reviewers were not able to identify any research conducted about the effectiveness of accommodations and LSP students, they examined research about accommodation use for the EL population. However, it is important to acknowledge that while ELs and LSP students both experience linguistic limitations accessing the academic language of instruction and assessment, no empirical studies are available to support that LSP and EL students respond to the same accommodations in the same manner.

To address the limited amount of empirical research, reviewers also examined analyses of state accommodation policies as well as published recommendations made by experts in the field about best practices when administering accommodations. Researchers used a combination of these sources to address the following research questions and subquestions:

1. What are the current patterns of accommodations usage for the PPAA?
  - a. What accommodations are available for the PPAA?
  - b. What is the process for selecting accommodations for individual students each year?
  - c. What is the prevalence of these accommodations and how consistent is that over time?

2. What are the background and selection considerations for accommodations frequently used on the PPAA by SWD and LSP students?
  - a. What do these accommodations address?
  - b. What does the literature say about their effectiveness?
  - c. How common are these accommodations in Puerto Rico and how does that compare with uses in other states?
  - d. What should IEP teams (and whoever makes the decision for LSP students) considering when determining student eligibility for these accommodations?

It is important to note that this review cannot assure that certain accommodations definitively work, or guarantee specific outcomes, and, due to the nature of the literature and the field, this review cannot support definite conclusions about the validity and effectiveness of the accommodations examined. There is a lack of experimental and quasi-experimental studies to sustain a comprehensive, outcome-oriented discussion of all the reviewed accommodations.

## Findings by Research Question

### Research Question 1: What are the current patterns of accommodations usage for the PPAA?

To answer this research question, reviewers used data from the 2008-2009, 2009-2010, and 2010-2011 administrations of the PPAA, as recorded in the ROA, and the *Manual de Acomodos* (Puerto Rico Department of Education, 2004). Findings are presented below according to corresponding subquestions.

#### *What accommodations are available for the PPAA?*

According to the *Manual para el Coordinador de las PPAA*, a document guiding regional coordinators during the administration of the PPAA, accommodations written into a student's IEP are considered allowable as long as there is evidence they are used by the student during instruction, and they are in accordance with the *Manual de Acomodos*—PRDE's Accommodation Manual for SWDs (Puerto Rico Department of Education, 2010). PRDE's Accommodation Manual identifies 35 different assessment accommodations for SWDs (see Appendix A); however it does not identify LSP student-specific accommodations. The record of assessment (ROA)— a document collecting information on all students taking the PPAA along with student accommodation usage— gathers information about 12 standard allowable assessment accommodations for use by SWDs with IEPs and six accommodations for LSP students (see Exhibit 4). SWDs are allowed 23 additional accommodations on the PPAA, such as the use of a calculator or visual organizers as long as they are written into their IEP and meet the conditions outlined above; however PRDE does not collect standardized data about the use of these accommodations.

#### Exhibit 4. Standard Allowable Accommodations as Documented on the ROA

Accommodations for SWDs	Accommodations for LSP Students
Large print	Extended time
Equipment to enlarge print	Changes in schedule
Sign language	Read aloud directions
Braille	Highlight directions
Reader	Bilingual dictionary
Scribe	Glossary
Answer in test booklet	
Monitor of test responses	
Change in setting	
Extra time	
Frequent pauses	

#### *What is the process for selecting accommodations for individual students each year?*

The process for selecting assessment accommodations for SWDs is outlined in the *Manual de Acomodos* (Puerto Rico Department of Education, 2004). Accommodations for the PPAA are selected based on accommodations that the student regularly uses during instruction and that are written in the student's IEP by the *Comité de Programación y Ubicación* (COMPU) team responsible for making the accommodation decisions. The process for selecting and using instructional and assessment accommodations for students includes five steps designed to encourage the consideration of each student's background, other relevant characteristics, and prior experience with the accommodation. These five steps are:

1. *Expect students with learning challenges to achieve proficiency in the grade-level academic content standards*—SWDs should be equally included in grade-level content and in state accountability assessments. All members of the COMPU team should be familiar with the legal basis for these inclusions both at the federal and local level.
2. *Learn about accommodations for instruction and assessment*—COMPU team members who are involved in accommodation decisions should all know the difference between accommodations and modifications, be familiar with the various accommodation categories, and understand the link between instructional and assessment accommodations.
3. *Select accommodations for instruction and assessment for individual students*—To ensure a valid test administration, all accommodation decisions should be made based on individual student characteristics, individual test characteristics, and Puerto Rico's accommodation policies.
4. *Administer accommodations during instruction and assessment*—For assessment accommodations to be effective, students should also use them during instruction to ensure familiarity with them before the assessment.
5. *Evaluate and improve the use of accommodations*—Individual accommodation decisions should not be static. The COMPU team should constantly re-evaluate individual accommodation decisions based on each student's performance and his or her continued need for accommodations.

Accommodations for LSP students are written into a student's Language Development Plan (LDP) by the *Comité de Revisión de Lenguaje* (CoREL), a team responsible for outlining the plan and monitoring its

progress. Reviewers were not able to identify documentation outlining the process used by the CoREL for the selection of assessment accommodations for LSP students. The accommodations chosen for the PPAA for both SWD and LSP students are to be aligned with the accommodations that are in the student's IEP or LDP.

*What is the prevalence of accommodations on the PPAA and how consistent is it over time?*

Data about accommodation usage on the PPAA over a three-year period for SWDs reveal that the percentage of students receiving accommodations increased from 73.8% to 80.3 %; during the same time the entire population of students tested decreased from 274,269 to 258,367 (see Exhibit 5). Over this time period the rates and types of accommodations used on the PPAA remained fairly consistent. For SWDs, the most commonly used accommodations were extended time, reader, change in setting, and frequent pauses. In fact, consistently in the period examined, these accommodations together accounted for about 95% of all accommodations administered on the PPAA. About 30% of SWDs use more than one accommodation on the assessment.



**Exhibit 5. Frequency of Usage of Accommodation by SWDs on the PPAA**

SWD Accommodations	2008-2009		2009-2010		2010-2011	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Extended time	42,348	73.8	45,819	77.1	48,758	80.3
Reader	10,220	17.8	11,112	18.7	11,653	19.2
Change in setting	7,970	13.9	8,146	13.7	8,799	14.5
Frequent pauses	2,586	4.5	2,353	4.0	1,782	2.9
Scribe	893	1.6	929	1.6	1,054	1.7
Answer in test booklet	909	1.6	1,026	1.7	797	1.3
Large print	637	1.1	692	1.2	752	1.2
Monitor of test responses	324	0.6	395	0.7	408	0.7
Changes in schedule/test order	454	0.8	377	0.6	258	0.4
Sign language	235	0.4	217	0.4	195	0.3
Equipment to enlarge print	39	0.1	37	0.1	27	0.0
Braille	15	0.0	32	0.1	21	0.0
Audio Version of Test*	24	0.0				
Students with multiple accommodations (2 or more)**	15,904	27.7	20,255	34.1	17,859	29.4
Total SWDs***	57,377	20.9	59,453	22.1	60,720	23.5
Total Accommodations	66,654		71,135		74,504	
Total PPAA students tested	274,269		269,073		258,367	

Note: Percentages based on Total SWDs, unless otherwise noted. Counts include every time an accommodation was administered to a student, including times it was administered with other accommodations.

\*PRDE provided the audio version of the test only during the 2008-2009 administration of the PPAA.

\*\*Students with multiple accommodations are already included in counts of individual accommodation usage; therefore this row is not included in count of “total accommodations”.

\*\*\*Percentage based on all students taking the PPAA

The LSP population is much smaller than the SWD population (see Exhibit 6). Only 1.5% of all students taking the PPAA in 2008-2009 were identified as LSP, and the percentage dropped even lower to 0.6% in 2009-2010 and 2010-2011. This pattern is very different than national findings for ELs, whose numbers have been steadily increasing over the years; it is projected that by 2015, about 30% of all school-aged children in the United States will be ELs (Francis et al., 2006). The data also showed a steady decrease in the use of LSP accommodations over this three-year period. Whereas in 2008-2009 only 31.1% of LSP students took the PPAA without the use of accommodations, in the more recent administration of the assessment, the majority of LSP students (63.4%) did not use accommodations as reported by the ROA.

For students who are LSP, the most commonly used accommodations were extended time, reader for test directions, and use of bilingual dictionary. During the 2008-2009 administration of the PPAA, these accommodations accounted for about 70.7% of all accommodations used by LSP students. In 2010-2011, they accounted for close to 54.2%. There was a substantial drop in the use of the extended time accommodation from 45.9% of LSP students using it in 2008-2009 to only 24.7% using it in 2010-2011.

**Exhibit 6. Frequency of Usage of Accommodation by LSP Students on the PPAA**

LSP Accommodations	2008-2009		2009-2010		2010-2011	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Extended time	1,844	45.9	478	30.9	411	24.7
Reader for test directions	758	18.9	358	23.2	297	17.9
Use of bilingual dictionary	238	5.9	199	12.9	193	11.6
Use of glossary	23	0.6	15	0.9	16	1.0
Changes in schedule	17	0.4	14	0.9	11	0.7
Highlight directions with highlighter	7	0.2	22	1.4	14	0.8
Students with multiple accommodations (2 or more)*	529	13.2	313	20.2	208	12.5
Did not have LSP accommodations	1,248	31.1	818	52.9	1,054	63.4
Total LSP students**	4,015	1.5	1,545	0.6	1,662	0.6
Total Accommodations	2,887		1,086		942	
Total PPAA students tested	274,269		269,073		258,367	

Note: Percentages based on Total LSP students, unless otherwise noted. Counts include every time an accommodation was administered to a student, including times it was administered with other accommodations.

\* Students with multiple accommodations are already included in counts of individual accommodation usage; therefore this row is not included in count of “total accommodations”.

\*\* Percentage based on all students taking the PPAA

### **Research Question 2: What are some background and selection considerations for accommodations commonly used on the PPAA by SWD and LSP students?**

Upon identifying the most commonly used accommodations for both SWDs and LSP students, reviewers looked to literature in the field to examine the intended purpose and effectiveness of the accommodations. For SWDs, the most frequently used accommodations on the PPAA were extended time, reader, change in setting, and frequent pauses. For LSP students, the most frequently used accommodations on the PPAA were extended time, reader of test directions, and using a bilingual dictionary (see Exhibit 7).

While reviewers found some studies that examined the effectiveness of accommodations for SWDs, the research base was limited and previous research mostly centered on only a few accommodations, with oral administration (i.e. the use of a reader) and extended time being the most often studied accommodations (Sireci et al., 2005; Thompson, Blount, & Thurlow, 2002). Another study cited extended time as the most frequently investigated accommodation and setting and response format as the least frequently examined (Chiu & Pearson, 1999). Researchers could not identify any studies looking at the stand-alone effect of the change in setting accommodation.

The research base for EL accommodation effectiveness was even more limited. Reviewers identified very few studies examining the effectiveness of EL accommodations. The same finding was acknowledged by two recently conducted meta-analyses (Kieffer et al., 2009; Pennock-Roman & Rivera, 2011).

Findings for each sub-question are presented below according to accommodation, grouping together information about accommodations which are appropriate for both SWDs and second language learners (extended time and reader/reader of test directions).

**Exhibit 7. Most Frequently Used PPAA Accommodations and their Support in Research and Other State Policies**

Type of Accommodation	Research Support Exists	# of SEAs Allowing Unrestricted Accommodation*	# of SEAs Allowing Restricted Accommodation*	
<b>SWD Accommodations</b>				
Extended time	Timing	Yes	38	8
Reader**	Presentation	Yes	9	40
Change in setting***	Setting	No	48	0
Frequent pauses	Timing	Yes	42	1
<b>LSP Accommodations</b>				
Extended time	Indirect linguistic support	Yes	39	1
Read test directions	Direct linguistic support	No	20	0
Use of bilingual dictionary	Direct linguistic support	Yes	35	5

\*As reported by Christensen, Braam, et al., 2011 for SWDs and Shafer Willner, Rivera, & Acosta, 2008 for LSP students

\*\*Research calls this accommodation “read aloud questions”

\*\*\*Many SEAs divide what PRDE calls a setting accommodation into several separate accommodations (i.e., individual administration, small groups, separate room, seat location). Data in the exhibit represents the “small groups” accommodation, the most popular setting accommodation.

**Extended Time**

*What does an extended time accommodation address?*

Extended time can range from time and a half (i.e., 90 minutes for a 60 minute test) to unlimited time to complete an assessment. Extended time is offered as a standalone accommodation, as well as a secondary accommodation in combination with time consuming primary accommodations, such as read aloud or scribe. The psychometric logic for extended time is as follows: testing SWDs and second language learners within the standard testing time limits leads to a problem of construct-irrelevant variance because their disability or linguistic conditions keep them from demonstrating their skills within these limits. The extended time accommodation removes this variance (Lovett, 2010). In other words, for a student with a reading disability that impacts reading speed, a mathematics word problem on a timed test would assess not only the student’s mathematics knowledge and skills but also the student’s reading speed. The extended time accommodation aims at reducing the effect of construct-irrelevant skills such as reading speed or speed of processing a question from affecting students’ test scores (Fuchs & Fuchs, 2001). The accommodation is popular; it is easy to administer, and is rated by many teachers as a helpful, non-intrusive accommodation, which maintains the integrity of the test (Gajria, Salend, & Hemrick, 1994; Jayanthi, Epstein, Polloway, & Bursuck, 1996).

*What does the literature say about the effectiveness of an extended time accommodation for SWDs?*

Extended time is the most frequently investigated accommodation for SWDs (Bolt & Thurlow, 2004; Fuchs, Fuchs, & Capizzi, 2005; Lovett, 2010). Studies suggest that extended time does not affect the

underlying constructs of assessments (Elliott, Bielinski, Thurlow, DeVito, & Hedlund, 1999), with the exception of speeded assessments (i.e., tests where students' rates of item completion is a part of the construct being measured). When examining the effectiveness of extended time for SWDs, some studies have shown no differential effects of extended time (Elliott & Marquet, 2004; Johnson, Rudner, & Sibert, 2008), while other studies have shown small improvement of test scores (Chiu & Pearson, 1999; Runyan & Smith, 1991). Two meta-analyses of all the empirical studies examining the effectiveness of extended time on test scores published up to 2005 (Sireci et al., 2005) and between 2005 and 2009 (Lovett, 2010) suggest that extended time does have a small positive effect on test scores. However, the effectiveness of this accommodation remains controversial as the accommodation benefits both SWDs and students without disabilities, although students with disabilities typically derive greater benefit (Lovett, 2010; Sireci et al., 2005). Thus extended time does not meet the criteria of creating a *differential boost* for SWD students, necessary to consider an accommodation effective. If extended time benefits both students with and without disabilities many feel that offering it only to students with disabilities provides an unfair advantage and also could impact the validity of test scores (Fletcher et al., 2006). This finding has led some researchers to suggest that all students should be offered extended time (Lewandowski, Lovett, & Gordon, 2009; Sireci et al., 2005). As argued by researchers "time and speed of response are constructs that rarely if ever appear in state or district content standards that large-scale tests are designed to measure. Time is actually more of a test management issue than a construct to be measured by learners" (Elliott & Marquet, 2004 as quoted by Sierci et al. 2005). Therefore, by not offering extended time to non-disabled students, their performance might be unintentionally affected if they cannot complete the test in the allotted time (Lovett, 2010).

Extended time appears to have different effects depending on certain characteristics of the test. Some research suggests that language demands (reading and writing requirements) of the test may impact the effectiveness of the extended time accommodation (Crawford, Helwig, & Tindal, 2004). For example, student performance on a writing assessment with a high language demand showed a significant differential boost for students with disabilities when both students with and without disabilities were provided extended time (Crawford et al., 2004); meaning, test scores of SWDs increased more when the extended time accommodation was administered than students without disabilities. Conversely, Runyan and Smith (1991) found that on timed reading tests requiring lower levels of language processing, the differential boost was not as significant. Fuchs, Fuchs, Eaton, Hamlett and Karns (2000) found differential effects of extended time for SWDs on a math assessment when items were linguistically complex, but no differential boost for SWDs on other types of items.

Student proficiency levels in mathematics and reading as well as their type of disability also interact with the effects of an extended time accommodation on student performance. In one study, Fuchs et al. (2000) found that when students with disabilities took a mathematics test with extended time, students who had a disability in the area of reading and no documented math disability performed differentially better than students with a documented math disability. Additional research shows that students with middle level math ability benefit more than students with low math ability from an extended time accommodation (Fuchs et al., 2000; Mandinach, Bridgeman, Cahalan-Laitusis, & Trapani, 2005).

*What does the literature say about the effectiveness of an extended time accommodation for students who are LSP<sup>5</sup>?*

The research on the effectiveness of an extended time accommodation for second language learners is mixed. A recent meta-analysis of the research on the effectiveness of assessment accommodations for ELs details two studies looking exclusively at extended time and several additional studies looking at extended time in combination with other accommodations (Kieffer et al., 2009). Results of this analysis reveal that extended time was not particularly effective in increasing student performance for ELs.

Conversely, a different meta-analysis of the effectiveness of accommodations for ELs found that extended time is an effective accommodation for this group of students but only when used in combination with a direct linguistic support accommodation (e.g., using a bilingual dictionary) tailored to the student's language level (Pennock-Roman & Rivera, 2011). A study using the Delphi technique to obtain consensus from an expert panel about responsive EL accommodations concluded that extended time is the only indirect linguistic accommodation that may reduce obstacles for ELs caused by a lack of language proficiency, since processing a language requires more time for second language learners than for native speakers (Acosta et al., 2008). In addition, a descriptive review of state policies for accommodating ELs found that in many states, indirect linguistic accommodations such as extended time are being framed as locally-determined test administration practices rather than as accommodations (Shafer Willner et al., 2008).

*How common is the extended time accommodation on the PPAA as compared to other statewide assessments?*

Extended time is the most commonly used assessment accommodation for SWDs and LSP students on the PPAA. More than 75% of SWDs taking the PPAA have used the accommodation, and this percentage has increased slightly over the three years examined. These findings are consistent with usage patterns on other statewide assessments throughout the United States, where extended time is the most popular accommodation given to both SWDs and second language learners (Bolt & Thurlow, 2004; Fuchs et al., 2005; Lovett, 2010; Sireci et al., 2005). The most recently conducted analysis of SEA policies revealed that 38 SEAs allowed extended time on statewide assessments (regardless of content area) without restriction, and eight additional states allow this accommodation under certain circumstances (Christensen, Carver, et al., 2011)

Though extended time was the most popular accommodation for LSP students, a smaller portion of LSP students than SWDs used the accommodation (about 30% of LSP students as compared to over 70% of SWDs). The usage of this accommodation for LSP students has steadily declined over the last three years. A descriptive study of SEA accommodation policies in the 50 states and the District of Columbia showed that extended time was one of two most commonly allowed accommodations, with 40 out of 51 SEAs allowing this accommodation (the other being bilingual dictionaries; Shafer Willner et al., 2008). Furthermore, some state policies do not explicitly mention the extended time accommodation, because their state assessments are not timed (Shafer Willner et al., 2008). Data on each SEA's actual usage of the extended time accommodation was not collected by either of these assessment policy reviews, and was not reported in any other state level review examined.

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<sup>5</sup> Original research was conducted on the population of English learners (ELs). The findings are generalized to the LSP population examined by this study because research on the effects of an extended time accommodation for students who are LSP was not available.

### *What should IEP/LP teams consider when determining eligibility for an extended time accommodation?*

Based on the literature, reviewers have synthesized the following recommendations for educators when considering both SWDs' and LSP students' eligibility for an extended time accommodation:

- *Individual student characteristics*—To justify the administration of the extended time accommodation, IEP/LP teams should clearly identify what aspect of a student's disability or linguistic need is creating an obstacle during the assessment and how the accommodation addresses it. The type of test in relation to the type of disability is relevant when determining eligibility; for example, if the student has a disability only in the area of mathematics, extended time should be offered only on mathematics tests (Fletcher et al., 2006).
- *The nature of the assessment and the knowledge and skills it intends to measure*—The extended time accommodation is not appropriate on speeded tests where the speed with which or time in which an examinee responds is a part of the overall construct the test is designed to measure. Research also shows that students may benefit from an extended time accommodation on tests with higher language demands. Since the PPAA is not a speed test and pace is not a construct of the assessment, this should not be a factor in the decision to use this accommodation.
- *Other accommodations used by students*—Since the extended time accommodation has been found particularly effective when bundled with other accommodations (e.g., LSP students who require use of a bilingual dictionary or other printed materials), the administration of other accommodations should be considered when deciding on using the extended time accommodation.

### **Reader and Reader of Test Directions**

#### *What does a reader accommodation address?*

The reader (or read aloud) accommodation is considered a controversial accommodation, as it has the potential to fundamentally change the construct measured by an exam. The reader accommodation for SWDs aims to remove the obstacle of students reading items in the assessment process by having a reader read test directions, items and answer choices aloud to the student. The read aloud accommodation varies in format. Sometimes the accommodation is administered with no written text, requiring the student to listen, comprehend, and process the assessment material using his/her short-term memory, while other times the student is allowed to hear and read the text at the same time (Rivera & Collum, 2006)(Rivera, Shafer Wilner, & Sia Jr., 2006). The accommodation can also be administered through oral presentation, computer read tests, or video presentation, though experts in the field have found no significant results in outcomes resulting from the presentation agent (Calhoun, Fuchs, & Hamlett, 2000).

A reader accommodation for SWDs differs from a "read test directions" accommodation offered to LSP students. For the "read test directions" accommodation, only the directions are read to the LSP student; items and test answer choices are not read aloud. When this accommodation is provided to second language learners, generally the students have a printed version of the test and can read the text along with the reader (Rivera & Collum, 2006).

#### *What does the literature say about the effectiveness of a reader accommodation for SWDs?*

Many studies question the validity of a reader accommodation on assessments which aim to measure a student's reading ability. Though multiple studies have found that reading test passages aloud to SWDs

improved their performance on reading comprehension tests, many feel it also invalidates the test as it no longer assesses the construct of reading (Crawford & Tindal, 2004; McKeivitt & Elliott, 2003; Meloy, Deville, & Frisbie, 2002). Crawford & Tindal (2004) argue that “reading a test aloud improves the scores of students...regardless of their educational classification. One interpretation of our results is that we changed the construct from reading comprehension to listening comprehension” (Crawford & Tindal, 2004). There is debate among experts in the field as to whether the intention of a reading test is to measure decoding skills or comprehension skills (or both) when considering the implications of using a reader accommodation on a reading assessment (Cawthon, Ho, Patel, Potvin, & Trundt, 2009). Using a reader accommodation on mathematics items does not spark the same debate as the construct being assessed is mathematics, not reading. As a result, the majority of studies investigating the effectiveness of a reader accommodation use mathematics test items. Research on the effectiveness of this accommodation on mathematics test items indicates that providing the accommodation to SWDs shows a differential boost in their outcomes as compared to non-disabled students, providing evidence for the effectiveness of the accommodation (Bolt & Thurlow, 2004; Johnson, 2000; McKeivitt & Elliott, 2003; Tidal, Heath, Hollenbeck, Almond, & Harniss, 1998; Weston, 2002). In addition, findings from an item-level study indicate that students with disabilities derive greater benefit from a reader accommodation on mathematics test items that are difficult to read (Bolt & Thurlow, 2004). For SWDs, test and student characteristics are important considerations when examining the effectiveness of a reader accommodation. A student’s reading proficiency may be a significant factor in determining the benefit of a reader accommodation (Cawthon, et al., 2009). Meloy et al. (2002) found that students with low reading proficiency derive greater benefit from a reader accommodation.

#### *What does literature say about the effectiveness of the reader of test directions accommodation for second language learners?*

The reader of test directions accommodation has very little empirical support, and the research that exists is inconclusive. Reviewers only identified two studies examining the effect of this accommodation on ELs. One study found little or no effect of the accommodation (Castellon-Wellington, 1999), whereas the other found only a small positive effect on test performance for ELs (Hafner, 2001 as cited by Rivera & Collum, 2006). However, the two studies differed significantly in their design. The first study allowed for variation in the form of the oral presentation of test directions ranging from translating of test directions into the student’s native language to simplifying the directions (Hafner, 2001). The second study allowed a strict reading of both test directions as well as the questions to the students (Castellon-Wellington, 1999). As a result, Rivera and Collum (2006) concluded that reaching a definitive conclusion about the effect of this accommodation is unfeasible. A study of the reader accommodation for ELs, where not just directions, but whole items were read to the students also found no effect for this population (Kopriva, Koran, & Hedgspeth, 2007). Reading of test directions was one of the reader accommodations found to be potentially helpful to EL students by the Acosta et al. Delphi study (2008), along with reading aloud of test items and repeating test items.

#### *How common is a reader and reader of test directions accommodation on the PPAA as compared to other statewide assessments?*

After extended time, reader is the second most common accommodation used during the PPAA for SWDs. An average of 18.5 percent of all SWDs tested during the three year period examined used the reader accommodation, and this percentage has steadily increased during this period. Similarly, nationally, reader is one of the most commonly allowed accommodations for SWDs. A descriptive study of 2009 SEA assessment policies reveals that a reader accommodation (reader test questions) was allowed in 49 states, but only nine of those states allowed questions to be read without restrictions (Christensen, Braam, et al., 2011).

For LSP students, the reader test direction accommodation is also the second most common accommodation used during the PPAA, with an average of 20% of all LSP students using the accommodation over the three years examined. Twenty SEAs allow for oral reading of only test directions, while 19 SEAs allow oral reading of test directions as well as test items. There has been a recent trend to restrict the reader accommodation for ELs based on the student's level of English with low-proficiency students hearing the entire test, and advanced proficiency students getting support as needed with words and phrases (Acosta et al., 2008). Actual usage data was not collected in either of these assessment policy reviews and was not reported in any other state level review examined.

***What should IEP/LP teams consider when determining eligibility for a reader/reader of test directions accommodation?***

For SWDs, the reader accommodation remains controversial, and there is little consensus among states as to when and how this accommodation should be used. As a result, teams should exercise caution when determining eligibility for this accommodation (Christensen et al., 2008). More research is needed on the effect of the reader of test directions accommodation for LSP students; however it is important that when administering the accommodation, the reader read only the directions to LSPs and not the actual test items. Based on the current research on effectiveness and potential impact on validity, when determining eligibility for this accommodation IEP/LP teams should consider the following:

- *Individual student characteristics*—Research has shown the reader accommodation to be potentially effective in helping students with reading related learning disabilities and those with poor decoding skills especially on tests with high language demands provided that reading is not the skill being measured by the assessment (e.g., on mathematics assessments; Meloy et al., 2002). Nonetheless, the accommodation is considered to be intrusive in that it significantly alters the standard assessment conditions compared to how other students take the test. For students who might read slowly, but who are shown to accurately comprehend test items and test directions when reading them, a minimally intrusive accommodation such as extra-time might be more appropriate (Bolt & Thurlow, 2004).
- *The nature of the assessment and the knowledge and skills it intends to measure*—Providing a reader accommodation on a reading/language assessment can impact the validity of student scores by changing the assessment from a reading assessment to a listening assessment. Because reading skills (which include decoding) are evaluated both by the English as a second language (ESL), and the Spanish language arts (SLA) components of the PPAA, the reader accommodation on these components of the test should be implemented with caution (Puerto Rico Department of Education, 2011). The same consideration is not necessary for assessments where reading is not a construct being evaluated, such as math and science examinations. The reader of test direction accommodation offered to second language learners does not have the same effect on validity regardless of the content area being assessed.
- *Other accommodations*—Depending on the presentation agent of the accommodation, this accommodation can easily distract other students, and it is therefore recommended that it be bundled with a change in setting accommodation. Agents that require loud administration (e.g., human reader, a pre-recorded CD that is played for a group of students) or might distract other students (e.g., a computerized administration of the accommodation) should be administered in a manner that does not disturb other students being tested.



## **Change in Setting**

### *What does a change in setting accommodation address?*

The change in setting accommodation is less controversial than those accommodations previously discussed. It is used to eliminate distractions to both the students receiving the accommodation and those not receiving it, or to increase access to specialized equipment. In Puerto Rico, the change in setting accommodation encompasses individual test administration, small group administration, administration in a separate room and a change in desk location, whereas many SEAs treat all these subcategories as separate accommodations. Usually, the setting accommodation is paired with another accommodation such as access to specialized equipment, accommodations that require a quiet environment (such as dictation, reader, tape recording of responses); individual administration may also be part of the accommodations paired with separate setting (Fuchs et al., 2005). Though this SWD accommodation is offered to ELs in several states, its use for this group is not supported by research, and it is not an accommodation administered to LSP students in Puerto Rico (Francis et al., 2006).

### *What does the literature say about the effectiveness of a change in setting accommodation for students with disabilities?*

The change in setting accommodation is most often used with other accommodations resulting in no research studying the separate effect of the accommodation (Fuchs et al., 2005). Although several studies have examined the effects of multiple test accommodations including a change of setting, they did not allow for the evaluation of the effect of the change in setting accommodation on assessment performance (Bolt & Ysseldyke, 2008; Thurlow, Elliott, & Ysseldyke, 2003). Conversely, there is no research to indicate that the accommodation has an impact on validity. Fuchs et al. (2005) conclude that, “until studies are conducted on the validity of setting accommodations, it may be prudent to consider the setting accommodation on its own to be a valid accommodation, but to take care when considering it in combination with other accommodations that lead to non-standard test administration.”

### *How common is change in setting in PR and how does that compare to elsewhere?*

Change in setting is a common accommodation for SWDs taking the PPAA, with an average of 14.1% of SWDs using this accommodation during each of the three years examined in the study. Similarly, change in setting is a common accommodation for SWDs in the United States. A review of state policies revealed that change in setting was commonly allowed and used in 48 states without restrictions. For these states, a change in setting accommodation included individual or small group administration, as well as administration in a separate room or carrel (Christensen, Braam, et al., 2011).

### *What should IEP teams consider when determining eligibility for a change in setting accommodation?*

IEP teams should consider eligibility for this accommodation based on effectiveness and need for other accommodations that are paired with a change in setting accommodation. In addition, a change in setting should be considered if it improves concentration and decreases distraction (Thompson et al., 2002).

## **Frequent pauses**

### *What does a frequent pauses accommodation address?*

Students who cannot concentrate continuously for an extended period of time or who become frustrated, or stressed easily, may need frequent pauses. In addition, some students with health-related

disabilities may also need this accommodation. Though this SWD accommodation is offered to ELs in several states, its use for this group is not research-supported, and it is not an accommodation administered to LSP students in Puerto Rico (Francis et al., 2006).

*What does the literature say about the effectiveness of a frequent pauses accommodation for students with disabilities?*

Reviewers found only one study to date that indirectly examined the impact of frequent pauses on student performance. Abedi et al. (2010) examined the effect of segmenting the text during a reading assessment by scheduling breaks into the reading of passages during an assessment; this was done to determine factors affecting the accessibility of reading comprehension assessments for student with disabilities. The results indicate that segmenting the passages had no effect on the performance of students with or without disabilities, indicating it was not an effective accommodation but it also did not impact the validity of the scores (Abedi et al., 2010). However, these findings do not allow evaluating the effectiveness of this accommodation and its impact on the validity of the assessment.

*How common is the frequent pauses accommodation in PR and how does that compare to elsewhere?*

Only three percent of students used a frequent pauses accommodation on the 2011 PPAA administration. Nationally, a frequent pause is a commonly allowed scheduling accommodation with 43 states allowing this accommodation (Christensen, Braam, et al., 2011). Actual usage data was not collected in this assessment policy review and was not reported in any other state level review examined.

*What should IEP teams consider when determining eligibility for this accommodation?*

IEP teams might consider providing a frequent pauses accommodation to students who cannot concentrate continuously for an extended period of time or students with health-related disabilities. While it has not been empirically proven to be an effective accommodation, it has not been shown to impact validity of scores (Abedi et al., 2010).

## **Bilingual Dictionary**

*What does a bilingual dictionary accommodation address?*

This second language learner accommodation addresses the construct-irrelevant variance created by the language of the assessment. For example, some studies on the test performance of ELs in high school and college have shown that the degree of construct-irrelevant variance differs with students' level of English language proficiency, and it may constitute as much as 34% of the variance in test scores for general verbal tests, 17 to 18% of the variance in science tests, and 8% of the variance in mathematics tests (Pennock-Roman & Rivera, 2011). Offering a bilingual dictionary accommodation attempts to mediate this issue.

*What does the literature say about the effectiveness of a bilingual dictionary for second language learners?*

A recent meta-analysis of accommodations for ELs revealed that using English language dictionaries is an effective accommodation when paired with extended time, having a small, but statistically significant effect on student performance (Kieffer et al., 2009). In contrast, the meta-analysis found no consistent findings for bilingual dictionaries. While some studies in the meta-analysis found strong positive effects of the accommodation, two of the studies found the accommodation to have a negative effect, leading authors of the meta-analysis to conclude that the effect of this accommodation may vary depending on

the context of the assessment and individual student characteristics. Rivera et al. (2006) also suggest that in order for this accommodation to be effective, students have to be literate in their first language and/or have received content-area instruction in their first language. This finding is supported by a more recent meta-analysis, which also suggests that in order for the bilingual dictionary to be effective, it should be paired with the extended time accommodation (Pennock-Roman & Rivera, 2011). Acosta et al. (2008) concluded that this accommodation may not be appropriate on assessments of reading comprehension, concluding that it was difficult to codify validity issues related to dictionaries for reading assessments in SEA policy in a way that would not lead to confusion for test administrators and local decision makers.

### *How common is a bilingual dictionary accommodation in PR and how does that compare to elsewhere?*

Bilingual dictionary is the third most commonly used accommodation on the PPAA for LSP students. Over the last three years, the accommodation's average usage for all students tested over the three years examined was 10.1%. A review of EL accommodation state policies shows that a bilingual dictionary accommodation is allowed in 35 out of 51 SEAs on reading/language arts assessment and 40 out of 51 SEAs for mathematics assessment (Shafer Willner et al., 2008). Actual usage data was not collected in this assessment policy review and was not reported in any other state level review examined.

### *What should LP teams consider when determining eligibility for the bilingual dictionary accommodation?*

When determining the eligibility of a student for the bilingual dictionary accommodation, LP teams should consider the following:

- *Individual student characteristics*—Research has shown that the effectiveness of a commercial, word-to-word bilingual dictionary accommodation is related to a student's level of literacy in their first language. In addition, the accommodation is most effective when the student has received recent content-area instruction in their first language. Also, the accommodation must be used during instruction to allow students ample time to practice using a bilingual dictionary effectively (Rivera et al., 2006).
- *The nature of the assessment and the knowledge and skills it intends to measure*—Providing a bilingual dictionary on a reading test can impact the validity of student scores (Acosta et al., 2008). More specifically both the ESL and SLA components of the PPAA aim at evaluating students' understanding of vocabulary using contextual clues (Puerto Rico Department of Education, 2011). A bilingual dictionary can affect this construct by giving additional clues to a student about the meaning of particular words. Therefore, the accommodation's use on these two portions of the PPAA should be approached with caution.
- *Other accommodations*—The accommodation has been proven to be most effective when bundled with the extra time accommodation.

## **Conclusions and Recommendations**

This report reviewed available literature about the accommodations most frequently used on the PPAA to evaluate the extent to which these accommodations address the obstacles that may interfere with a student's ability to demonstrate what he or she knows and can do on the assessment. The most frequently used PPAA accommodations include extended time, reader, change in setting, and frequent

breaks for SWD students and extended time, reader of test directions, and bilingual dictionary for LSP students. Major findings and recommendations are summarized below:

- Current research about the effectiveness of accommodations for both SWDs and second language learners is limited and inconclusive. This review found that Puerto Rico's most frequently used accommodations are consistent with the currently available research and are commonly accepted as standard and well-established accommodations among other SEAs.
- For SWDs, research supports the effectiveness of the extended time accommodation in reducing construct-irrelevant variance. The reader accommodation has shown to be effective with SWDs; however, because of its intrusive nature and the potential to alter the construct being assessed, the accommodation should be used with caution, particularly on the ESL and SLA portions of the PPAA which aim to measure a student's reading ability. No effect was found for the frequent breaks accommodation, and reviewers could find no research about the change in setting accommodation.
- For second language learners, research has found extended time to be effective at reducing construct-irrelevant variance. The effect of the bilingual dictionaries accommodation appears to be related to students' proficiency in and/or their exposure to the content-area instruction in their native languages. The research base examining the reader of test instructions accommodation is too small to evaluate its effectiveness.
- Puerto Rico's accommodation usage for both SWDs and LSP students is aligned to that of other SEAs. The most frequently used accommodations for both SWDs and LSP students in Puerto Rico are allowed and supported by the majority of policies and guidelines of other SEAs.
- The effect and validity of each accommodation depends on the construct an assessment intends to measure. For example, the reader accommodation is not appropriate on the ESL and SLA portions of the PPAA, both of which evaluate reading, as it fundamentally alters the construct being measured from a reading construct to a listening construct. Decisions about the use of a specific accommodation on the PPAA need to be evaluated in the context of the knowledge and skills measured by that particular portion of the exam.
- For both SWDs and LSP students, there is increasing evidence and agreement among experts that the effectiveness of accommodations varies according to students' individual characteristics rather than the characteristics of the SWD or the EL/LSP population as a whole. Therefore, the individual characteristics of each student should be the impetus for any accommodation decisions for both SWDs and LSP students.

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## Appendix A: Puerto Rico Assessment Accommodations According to Accommodations Manual

Visual Accommodations	Tactile Accommodations	Auditory Accommodations	Multisensory Accommodations	Modified Forms of Response	Environmental and Location Accommodations
Large-print version	Braille	Human reader	Videotapes and video descriptions (a descriptive narrative of key visual elements)	Scribe	Reduced distractions to the student
Equipment to enlarge text	Tactile graphics	Cassette or CD	Screen reader program	Word processor	Reduced distractions to other students
Sign language		Books on tape	Visual keys (for students who are blind/hard of hearing)	Voice to text	Change of location to help with physical access or use of special equipment
		Recorded books	Annotations, outlines, and instructions	Braille or electronic Braille notebook	Time and itinerary accommodations
		Equipment to amplify sound	Materials that “speak” (classroom materials with auditory components)	Note-takers (another student or an electronic note-taker)	Extended time
				Recorder	Frequent or multiple pauses
				Answer in the test booklet	Change of itinerary or order of activities
				Test answer supervision (to ensure the student correctly chooses their answer on the answer sheet)	
				Materials or equipment used to solve or organize answers	
				Equipment to make calculations	
				Grammatical and spelling tools (such as a dictionary)	
				Visual organizers	
				Graphic organizers	