

**Test accommodations in Canadian provincial assessments:
Current practices, policies, and research**

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This paper surveys the current test accommodation practices in Canadian provincial, territorial, and national assessments and reviews the relevant research on the effects of accommodations on students' performance on large-scale assessments. The theoretical bases for accommodations, and practical considerations for choosing accommodations are also discussed.

What are test accommodations?

Broadly, test accommodations are defined by the *Standards for Educational and Psychological Testing* (American Educational Research Association et al., 1999) as “any action taken in response to a determination that an individual’s disability requires a departure from established testing protocol” (p.101). Often, the term accommodations is limited to changes to test administration conditions that are intended to support students with disabilities and/or English language learners (ELL) in demonstrating their knowledge and skills, but do not change what the test is intended to measure. These changes are usually in one or more of four aspects of the test administration: timing, setting, presentation modality, and response modality. Changes that do affect what the test measures are sometimes referred to as modifications. Because the terms accommodations and modifications are not used consistently by testing programs or in the research literature, it is important to define the terms.

In this paper, we will define a test accommodation as a change in an aspect of the test administration *that is not related to the knowledge or skill the test is intended to measure*. For example, imagine a student who cannot read the usual printed version of a mathematics test because she has a visual impairment. Without an accommodation, this student will probably

receive a score of 0 on the test, even though she may in fact have the mathematical knowledge and skills required to solve the problems. Because the purpose of the test is to measure students' mathematical knowledge and skills, not their ability to read small printed text, providing a large-print version, a Braille version, or an audio version of the test would be an appropriate accommodation. A less obvious example is a student with a learning disability that makes it difficult for him to read quickly. If the student is taking a test that is intended to measure reading speed, then allowing extra time would not be appropriate. However, if the purpose of the test is to measure comprehension of the text, then extra time might permit the student to demonstrate his comprehension, making the test results more valid.

In contrast to a test accommodation, a test modification actually changes what is being tested. For example, a student who is studying a simplified mathematics curriculum because of a severe disability might be given a specially-developed test that measures what she has been studying, instead of the test that most students in her grade are taking. In large-scale assessments, test modifications are very rare and the results of modified tests are often difficult to interpret or to compare to other students' results. This paper will focus on test accommodations, not modifications.

Table 1 lists test accommodations that are commonly used for students with disabilities (Fuchs, Fuchs, & Capizzi, 2005; National Research Council, 2004).

Table 1

Test Accommodations for Students with Disabilities

Type of test accommodation	Purpose
Timing	
<ul style="list-style-type: none"> • Extended time • Frequent supervised breaks • Extending sessions over multiple days • Testing without time constraints 	to allow students to have more time to complete the assessments
Setting	
<ul style="list-style-type: none"> • Alternate testing locations (e.g., separate room, special education classroom, hospital, home)¹ • Individual administration¹ • Small group administration¹ • Preferential seating within the regular classroom¹ • Adaptive or special equipment (e.g., lighting, acoustics)² 	<ol style="list-style-type: none"> 1. to minimize distractions 2. to create a comfortable setting with adaptive equipment for test-takers
Presentation modality	
<ul style="list-style-type: none"> • Large print/Visual magnification device³ • Braille⁴ • Read-Aloud/Audio version⁵ • Sign language/Oral interpreter⁵ • Assistive technology (e.g., text-to-speech)⁵ • Dictionary⁶ • Coloured-paper version⁷ 	<ol style="list-style-type: none"> 3. to magnify the ordinary test version for students with visual impairments 4. to provide text that can be read by touch instead of visually 5. to present the directions or test items to students through sign language or by reading aloud 6. to permit students to look up definitions of unfamiliar words 7. to reduce the glare produced by black print on white paper for students with visual impairments
Response modality	
<ul style="list-style-type: none"> • Scribe⁸ • Braille⁹ • Tape recording of responses⁹ • Sign language or oral interpreter⁹ • Assistive technology (e.g., word recognition software, computer with spell checker, word processor)⁹ • Calculator/Math-fact tables¹⁰ 	<ol style="list-style-type: none"> 8. to write or type the responses the student dictates 9. to electronically record responses the student dictates, to scribe responses the student signs, or to permit the student to word process instead of writing responses 10. to aid students' computations or permit them to look up instead of recalling mathematics facts and formulas

Note: The listed accommodations may not be permitted for all subject areas (e.g., some jurisdictions do not permit reading aloud of test items for reading tests).

As we can see, the type of test accommodation that is appropriate for a student will depend on the student's needs for writing the assessment. It should be noted that many students

with disabilities receive more than one test accommodation (Fuchs et al., 2005). For example, the assessment may be administered to the student in a separate room if directions/test items need to be read aloud.

In addition to students with disabilities, students who are English Language Learners may also require test accommodations to demonstrate their knowledge and skills. These accommodations may include timing, setting, presentation modality, and response modality. Because the barrier to ELL students demonstrating their knowledge and skill is their facility with the language of the test, discussion of the accommodations available to ELL students often focuses on whether the accommodations relate directly to the linguistic aspects of the test. This division is used in Table 2. Research in the United States (Abedi, Hofstetter, & Lord, 2004; Rivera & Collum, 2006) has found that ELL students are more likely to receive test accommodations that do not directly change the language of the assessment (e.g., extended time) than accommodations that directly change the language of the test (e.g., translation of test items, bilingual dictionaries). For example, the U.S.'s National Assessment of Educational Progress (NAEP) does not allow students to respond in their native language and have those responses translated into English. It should be noted that the commonly used accommodations are not only provided to ELL students without disabilities but also frequently provided to disabled ELL students (Albus & Thurlow, 2008).

Table 2

Test Accommodations for English Language Learners

Type of test accommodation	Purpose
Direct linguistic accommodations	
Oral reading in English/native language Bilingual version of the booklet Bilingual word-for-word dictionary without definitions	Provide the ELL student with additional linguistic support that directly changes the language of the assessment.
Indirect linguistic accommodations	
Extended time Periodic breaks Individual/Small group administration Preferential setting Test administered by familiar person	Similar to the test accommodations for students with disabilities, ELL students may be eligible for the non-linguistic support during the testing.

Note: The listed accommodations may not be permitted for all subject areas.

An appropriate accommodation should help students who need the accommodation to make substantial gains in their assessment results, but should provide no benefit for students who do not require it. Take the use of English dictionaries as an example: if experimental results show that English-speaking-only students score much higher by using the dictionaries than ELL students who do not benefit at all or score only slightly higher than in non-accommodated conditions, this accommodation should not be considered effective for ELL students.

Why are test accommodations important?

Large-scale assessment programs in both Canada and the United States have typically been used for accountability – that is, to check that schools are teaching what they should be teaching; for gatekeeping – that is, as requirements individual students must meet to be promoted to the next grade, earn a course credit or graduate from high school; or for instructional diagnosis – that is, to determine what individual students still need to learn, so that teaching can be adjusted to better meet their needs (Klinger, DeLuca, & Miller, 2008; Nagy, 2000). Some tests are used for multiple purposes. For example, it is not unusual for a test that is used for

gatekeeping or for instructional diagnosis to also be used to hold schools accountable for students' results.

In Canada, provincial and territorial Ministers of Education have called for the inclusion of students with disabilities and ELLs in large-scale assessments. For example, Saskatchewan's policy on "Inclusion of All Students" states that "The Ministry of Education encourages the participation of all students in the Reading/Writing/Math assessment. In order to facilitate participation, certain adaptations may be made, if they are part of the student's regular experience with Reading/Writing/Math instruction and assessment" (Saskatchewan Ministry of Education, n.d., p. 5).

Test accommodations can help to increase the participation rates of students with disabilities and ELL students in large-scale assessments (Abedi, Lord, Kim, & Miyoshi, 2001). Even more importantly, accommodations can increase the validity of test results for students with disabilities and ELL students by permitting them to demonstrate their knowledge and skills in situations where the usual test administration would interfere with that demonstration. As the Joint Advisory Committee (1993) specified in the *Principles for Fair Student Assessment Practices for Education in Canada*, "students should be provided with a sufficient opportunity to demonstrate the knowledge, skills, attitudes, or behaviours being assessed" (p. 5).

What test accommodations have been used in Canadian provincial testing programs?

Table 3 summarizes the large-scale assessment programs in Canada's ten provinces and three territories and the nationwide assessment (Pan-Canadian Assessment Program, PCAP), as of the 2009/10 school year. The classification of testing programs is based on Klinger et al., 2008, but has been updated based on a new review of policy documents performed specifically for this paper in August 2010. Tables 4.1 to 7.2 provide a summary and synthesis of the

information from the provincial policy documents, indicating whether specific accommodations are allowed, allowed with restrictions, prohibited, or not mentioned in documents available at this time. Moreover, the information about accommodations for ELL students and students with disabilities for each province, territory and the PCAP is presented in Appendices 1 to 14. These types of accommodations are ordered using a taxonomy developed by the National Research Council (2004) for its survey of accommodation use by states. It is important to note that the information provided in this paper about the accommodations permitted by provincial testing programs is based on a careful review of publicly-available documents about the testing programs, including test administration guides. This represents the best available data as of August 2010.

In Canada, the Joint Advisory Committee (1993) indicated that the alternative testing for disabled and ELL students should be guided by a written policy. A well-written policy document is very important for guiding the decision-making processes for test accommodations and obtaining information about students' learning outcomes. Overall, the provincial, territorial, and national testing programs provide test accommodations in all four major categories (Presentation Modality, Response Modality, Setting, and Timing). Furthermore, most of the provincial and territorial Ministries of Education and the Council of Ministers of Education, Canada (CMEC) have documents describing their test administration procedures and test accommodation policies (see Table 8 for links to the online documents). Therefore, most of provinces and territories meet the criteria for providing acceptable evidence by having policies on the use of accommodations for their own provincial testing programs, although the policies and procedure for accommodation selection remain unclear.

In current practices of test accommodations across Canada, different terminologies have been used by provinces and territories. Some provinces use “accommodations” (e.g., Alberta, New Brunswick), “adaptations” (e.g., Manitoba, Quebec), “special provisions” (Ontario, Saskatchewan), or use accommodations and adaptations interchangeably (e.g., Newfoundland and Labrador, Prince Edward Island).

The policies on timing and setting accommodations are more consistent across provinces and territories than those on presentation and response modality accommodations. There is more diversity among the policies on presentation modality and response modality accommodations (Tables 4.1-5.3). In consideration of the purposes of provincial testing programs (Klinger et al., 2008), this paper distinguishes the policies of test accommodations by two major educational purposes: (1) gatekeeping and (2) instructional diagnosis and monitoring student achievement (accountability, the third use discussed by Klinger et al., will not be discussed separately; however, many of the assessments used for the first two purposes are also used for accountability). The provincial testing programs for the purpose of graduation or grade promotion (hereafter referred to as gatekeeping) are usually for students in Grades 9 to 12; those for the use of instruction and achievement monitoring are often for students in Grades 3 to 9. The similarities and variability of the use of test accommodations for students with disabilities and ELL students are discussed in greater detail below.

Test accommodations for students with disabilities in Canada

(1) Gatekeeping (Tables 4.1-4.3):

- Similarities

The most frequently used presentation modality accommodations are read aloud/oral reading of test items or directions, large print, Braille, and sign language. For response modality

Running head: Test Accommodation in Canadian provincial assessments

accommodations, commonly used test accommodations include scribing, assistive technology, Braille, and calculator. Overall, however, extended time and alternate setting accommodations are the most popular test accommodations for students with disabilities. Most provincial testing programs allow students to complete the assessments in a maximum of twice the allocated testing time with periodic supervised breaks; Quebec, however, permits an additional one-third of scheduled time (Québec Ministère de l'Éducation, 2007).

- Differences-Read aloud

Reading the test items aloud to elementary students is rarely allowed for reading tests. The idea of the policy is to not compromise the validity of reading assessments for measuring young students' fundamental reading skills. Many provinces do, however, allow this accommodation for reading the test instructions, reading passages, and test items to older students taking gatekeeping assessments, including reading tests.

- Differences-Scribing

Scribing is commonly provided for older students in most of the provinces; however, it is restricted for a few provinces (British Columbia, New Brunswick). This accommodation is allowed for assessments other than writing (math, science) for New Brunswick students (New Brunswick Department of Education, 2010, pp. 5-6) and is only available in exceptional cases for high school students in British Columbia (British Columbia Minister of Education, 2009, p. 147). It is permitted for students in other provinces (such as Ontario and Nova Scotia) (Ontario Ministry of Education, 2010; Nova Scotia Department of Education, n.d.).

- Differences-Computer/Assistive technology

Students in most provinces were provided with this accommodation (e.g., Saskatchewan, Quebec), but it may be subject-specific. For example, computer/assistive technology is an

allowable accommodation for Language Arts, but not for Applied Math in Manitoba (Manitoba Education, 2010). In New Brunswick, communication device accommodation is available for all assessments except for writing, although use of a computer (word processor) and speech-to-text device are permitted for all assessments (New Brunswick Department of Education, 2010).

- Differences-Spell checker

The use of a spell checker and interpretation of directions are most controversial among provinces and territories. The use of a spell checker is allowed for some provinces; for example, in Newfoundland and Labrador, “Spell check and grammar check, consistent with the student’s IEP and/or Pathway 2 Record, are permitted in exams [Public Examination]” (Newfoundland and Labrador Department of Education, n.d., p. 3), whereas in New Brunswick, “The student uses a computer or word processor (e.g., DANA, NEO), but the spell check and autocorrect options must be disabled” (New Brunswick Department of Education, 2010, p. 5).

- Differences-Interpretation of directions

The policy on interpretation of directions also varies: some provinces do not allow test administrators to explain or interpret the directions to examinees (e.g., Alberta, Manitoba, and Ontario), while one province and a territory do permit interpretation of the instructions (Newfoundland and Labrador and Yukon) (Alberta Education, 2009; Manitoba Education, 2010; Newfoundland and Labrador Department of Education, n.d.; Ontario Ministry of Education, 2010; Yukon Department of Education, 2009). The remaining provinces do not provide a clear policy about this in their documents.

- Differences-Dictionaries

Students are not allowed to use dictionaries in the provincial assessments of British Columbia; that province’s policy states that “Under no circumstances may any student bring into

the exam room or use a printed or electronic dictionary for any provincial exam” (British Columbia Minister of Education, 2009, p. 31). However, students in Alberta are allowed to use dictionaries as an accommodation (Alberta Education, 2009, p. 16).

- Differences-Person familiar to the student administers test

Interestingly, some provinces (Alberta, Newfoundland and Labrador) indicate that tests should not be administered by a person who is familiar with the student, but other provinces recommend this accommodation (e.g., Nova Scotia, Prince Edward Island) (Alberta Education, 2009; Newfoundland and Labrador Department of Education, n.d.; Nova Scotia Department of Education, n.d.).

(2) Instructional diagnosis and monitoring student achievement (Tables 5.1-5.3)

Because provinces and territories often have similar policies for commonly used accommodations such as timing, setting, Braille, and large print, the policies for these test accommodations in the assessments for instructional diagnosis and monitoring students’ learning outcomes are, in general, similar to those for the purpose of gatekeeping. However, it is worth pointing out that some provinces do not distinguish their policies on accommodations for different provincial testing programs which may measure a wide range of knowledge and skills (e.g., reading, writing, math, social science, and science) at different grade levels. The impacts of accommodations on different assessments need to be further justified and documented in light of construct relevance and interpretation of test results.

Reading the test items aloud to elementary students is rarely allowed for reading tests in most provinces. The idea of the policy is to not compromise the validity of reading assessments for measuring young students’ fundamental reading skills such as word recognition and reading

fluency. Many provinces do, however, allow this accommodation for assessments other than reading (e.g., mathematics, writing, science), but the grades and subjects for which read aloud/oral reading accommodations are allowed varies among provinces. In New Brunswick, for example, students were eligible to have math and science test items read aloud, but not for reading comprehension (New Brunswick Department of Education, 2010, pp.5-6).

While students in most of the provinces were provided with computer/assistive technology accommodations (e.g., Quebec, Saskatchewan) (Québec Ministère de l'Éducation, 2007; Saskatchewan Ministry of Education, n.d.), the students participating in the PCAP are not able to use computers (including word processors) (Council of Ministers of Education, Canada, 2010, p. 3). Most importantly, current practices for computer accommodations are subject-specific and the policies vary from province to province (see Table 5.2 for details).

Test accommodations for ELL students in Canada

In addition to students with disabilities, ELL students are sometimes eligible for test accommodations; however, ELL students' eligibility for and the use of accommodations are not clearly laid out in policy documents in some provinces. Variations in eligibility requirements for the use of test accommodations are seen between and within provinces for ELL students. Depending on the province, ELL students may receive as many test accommodations as students with disabilities (e.g., Nova Scotia Department of Education, n.d., p. 3), or receive only extended time (e.g., Alberta Education, 2009, pp. 4-5), or may not receive any test accommodations (e.g., British Columbia Minister of Education, 2009; Grade 12 Departmental Examinations of Saskatchewan Ministry of Education, 2009, p. 5). Furthermore, the policies also vary from one assessment to another. For example, Ontario's standardized testing program for Grades 3 and 6 does not require ELL students with IEPs to receive test accommodations; however, ELL students

in Grades 9 and 10 are eligible for test accommodations if they have IEPs. Similar variations raised concerns about the comparability of large-scale and national assessments in the U.S. The National Research Council (2004) reported that the variability in state policies and state/local decisions for test accommodations have a substantial impact on test results and the score interpretation of the National Assessment of Educational Progress (NAEP).

These variations in policies make it more difficult to compare the current practices of test accommodations across Canada. As a result, test accommodations for ELL students in this paper refer to those which are for ELL students only, applicable for all students, and not the accommodations provided to students with disabilities.

Gatekeeping, instructional diagnosis and monitoring student achievement (Tables 6.1-7.2)

- Similarities

Timing, alternate setting, assistive technology, and read aloud/oral reading accommodations are commonly used in provincial testing programs across Canada. Furthermore, ELL students cannot use bilingual versions of the assessments, have instructions/test items read aloud or respond in their native language. Based on the data from the document analyses, the policies for ELL students are similar to those for students with disabilities. In order to address the issue of ELL students' language needs, we discuss test accommodations for ELL students and students with disabilities separately.

- Differences-Bilingual dictionaries, thesaurus and oral reading in native language

We can see that some provinces have taken ELL students' characteristics into account and, thus, particular policies for this group of students were made; for example, the use of English/bilingual dictionaries and thesauruses which may provide direct linguistic support (e.g., Alberta, Manitoba, Nova Scotia); however, a few of provinces prohibit this (British Columbia,

Saskatchewan). Moreover, in Ontario, bilingual dictionaries are available for Grade 3 and 6 writing assessments, but are prohibited in reading and math assessments. Although oral reading in the student's native language is rarely mentioned in policy documents, Manitoba specifically prohibits it in its testing policy.

What accommodations are appropriate?

Test accommodations are the changes made to help measure students' target knowledge and skills and remove the obstacles to students' performance. Noteworthy, test accommodations should not alter what the test intends to measure (constructs) and should not give unfair advantages or disadvantages to accommodated students. For example, a calculator may not be appropriate for a test intended to evaluate computational skills because it, essentially, can compensate for students' computational skills that they may not have acquired yet. Appropriate test accommodations should help students demonstrate what they know and what they can do without affecting the validity of test results and interpretations. A valid test accommodation is able to reduce the discrepancy between students' actual abilities and their performance. Moreover, when making decisions about test accommodations one should be cautious about the issue of accurate measurement and fairness for all. This paper will discuss the impact of test accommodations on the issue of measurement and fairness in greater detail below.

The policy in Alberta exemplifies the essential philosophy of the use and selection of test accommodations for most of the provinces and territories. It states:

The goal in permitting the use of writing accommodations when administering achievement tests is to promote fairness and equity by removing obstacles to performance. Consequently, accommodations are neither intended nor permitted to: (1) alter the nature of the construct being measured by a test, (2) provide unfair advantages to students with disabilities over

students taking tests under regular conditions, and (3) compensate for knowledge or skill that a student has not attained. (Alberta Education, 2009, p. 1)

In addition to the concerns about test characteristics, it is also very important to customize the test accommodations for individual students' needs which should be documented in students' IEP or students' records. Moreover, the prior use of certain accommodations in the classroom is essential. In order to use the accommodations effectively and efficiently, students should have experience with and have become familiar with the accommodations (such as assistive technology and dictionaries) in classroom instruction and assessments.

What do we know about the effects of test accommodations on assessments?

This paper discusses the most frequently used and comprehensively researched test accommodations under four major categories (timing, presentation modality, response modality and setting).

Students with disabilities

1. Timing: Extended time

Student characteristics are a critical factor to determine whether the student requires an extended time accommodation. It has been historically documented that students with cognitive disabilities (especially reading disabilities or ADHD) have significant deficits in reading fluency/speed and cognitive processing skills and may also be distracted when they complete the timed assessments. As a result, extended time becomes a common test accommodation which intends to compensate for these aforementioned difficulties (Lewandowski, Lovett, Parolin, Gordon, Coddling, 2007; Lewandowski, Lovett, & Rogers, 2008; Shaywitz, 2003). In addition, timing accommodations are offered with other more time-consuming test accommodations (such as read aloud, dictated responses).

The effects of timing accommodations have been widely researched although studies yield mixed results. Sireci, Scarpati, and Li (2005) reviewed empirical studies and concluded that this popular test accommodation, in general, has positive effects on disabled students' test performance with a few exceptions of no significant impact on students with disabilities. Extended time benefited disabled students more than students without disabilities in some studies. However, in most of cases, non-disabled students also benefited from extended time accommodation, which may provide unnecessary advantages for students who do not need the accommodation. Other studies (e.g., Fuchs, Fuchs, Eaton, Hamlett, Bindley, & Crouch, 2000; Lewandowski, Lovett, & Rogers, 2008) found that non-disabled students have more advantages than their learning disabled peers on reading assessments in the condition of the extended time accommodation. Lewandowski, Lovett, Parolin, Gordon, and Coddling (2007) found similar results for math performance of a group of middle school students with ADHD. The inconsistent findings weaken the assumption about test accommodations which should benefit disabled students more than non-disabled students or even only help improve disabled students' performance (e.g., Fuchs & Fuchs, 2000; Pitoniak & Royer, 2001; Sireci et al., 2005). Even more importantly, we should scrutinize the issue of construct relevance and irrelevance while comparing different groups of students' gains on assessments as well as comparing their accommodated and non-accommodated scores.

2. Presentation Modality: Read Aloud

The effects of read aloud/oral presentation accommodation use on scores have drawn the most attention from researchers over the years. A majority of studies focus on reading and/or math assessments for student with disabilities. Similar to timing accommodations, studies on read aloud accommodations have also produced varied findings.

Overall, oral reading of math assessments is beneficial for disabled students (especially for students with reading difficulties) because it can potentially remove students' difficulty in reading item stems and is thought not to alter the math constructs measured. For example, Bolt and Thurlow (2007) found that students with reading disabilities in Grades 4 and 8 who were given the read aloud accommodation scored higher on math items that were classified as difficult to read than non-accommodated students with reading disabilities. However, results for reading assessments are equivocal (e.g., Cormier, Altman, Shyyan, & Thurlow, 2010; Thompson, Blount, & Thurlow, 2002). On the one hand, research supports the use of oral reading presentation on reading assessments: In a statewide reading assessment, accommodated children with decoding difficulties had significantly higher scores and had a higher passing rate compared to average decoders and non-accommodated poor readers (Fletcher et al., 2006). On the other hand, read aloud may decrease the validity and comparability of reading test results. Bolt and Ysseldyke (2006) found more items of reading/language and arts function significantly different for elementary, middle, and high school students with disabilities who received read aloud accommodation (compared to students with disabilities who did not receive read aloud) than math items.

Studies with supporting results also call for caution about interpretation. Laitusis (2010) exemplifies the mixed results evident in studies of read aloud accommodations. In her study, a large sample of accommodated students with reading disabilities substantially benefited from audio presentation on the reading assessments after controlling for their reading fluency and ceiling effects of math scores. However, she also found that teachers' ratings of reading comprehension are more predictive of non-accommodated scores than accommodated test results. This may be due to the consistency of teachers' ratings, but Laitusis suggests that audio

presentation may be used in reading assessments, but the validity of test results should be interpreted with caution. She also advises that reading fluency should be assessed if audio presentation accommodation is provided for reading comprehension assessments, so that the construct of reading fluency won't be compromised by reading the test to the student. However, it remains unclear whether students receiving oral reading accommodation were measured on listening comprehension instead of reading comprehension.

3. Response Modality: Assistive Technology, Dictation/Scribing/Speech recognition software

With advances in technology, assistive technology such as speech recognition software has become a common response accommodation. Previous studies found that the quality and length of learning disabled students' writing is very likely to be affected by their difficulties with mechanics of handwriting, including spelling, capitalization, and punctuation (e.g., Graham, 1990; MacArthur & Graham, 1987). Furthermore, dictation either using speech recognition software or a scribe can free students across grade levels with disabilities from the burden of the mechanics of writing, so they are able to focus on other important writing components, such as developing well-organized ideas and clarifying supporting points, as well as sentence structure (MacArthur et al., 1987; MacArthur & Cavalier, 2004). Although students with disabilities perform better with a dictation accommodation than they would if they had to write by hand, there are pro and cons. For speech recognition, training students to use the system and overcome some constraints (such as extra time for checking and correcting errors) is necessary. Compared to speech recognition and handwriting, dictation to a scribe may have more advantages such as increasing the overall quality of writing; however, it is relatively difficult to train student to be an independent writer without the assistance of a scribe.

It is worth noting that dictation to a scribe and use of word recognition software are more appropriate for assessments that evaluate students' content knowledge and skills rather than writing conventions or mechanics. This is to ensure that the dictation accommodation does not alter what should be measured in the assessments.

4. Setting: Alternate Setting

Alternate setting is an accommodation that is frequently used with other accommodations. Although research rarely studies the separate effect of setting accommodation, a large body of research examines the effects of multiple test accommodations including alternate setting (e.g., Bolt & Ysseldyke, 2006; Lewandowski et al., 2008; Thurlow, Elliott, & Ysseldyke, 2003). This accommodation may accompany accommodations that require a quiet environment (such as dictation, read aloud, tape recording of responses) or/and individual administration. Therefore, this accommodation is less controversial than those accommodations discussed above.

ELL students

Compared to the studies on students with disabilities, the impact of ELL students' use of test accommodations is less studied but research is growing in recent years. Although ELL students commonly receive test accommodations such as extended time and alternative setting, the following section will focus on the accommodations that address ELL students' language needs.

1. Direct linguistic accommodations: Linguistically simplified tests

Some researchers have suggested that reducing the complexity of sentence structure and replacing unfamiliar vocabulary are beneficial for ELL test takers (e.g., Abedi & Lord, 2001; Abedi, Lord, Hofstetter, & Baker, 2000). Furthermore, Abedi and his colleagues argue that the

test constructs are not altered even under the condition of a modified language version (e.g., Abedi & Gándara, 2006; Abedi, Hofstetter, & Lord, 2004; Abedi & Hejri, 2004). However, it should be noted that there are other findings against their claims. Brown (1999) reported no significant difference between language modified and non-modified versions for Grades 5 and 8 students' math and science performance. Similar results were also found in another study of a science test for Grades 4 and 6 students (Rivera & Stansfield, 2001).

2. Direct linguistic accommodations: English/bilingual dictionaries

Studies have presented mixed findings for English or bilingual dictionaries and glossaries. In a meta-analysis, the use of English dictionaries (especially with extended time) was found to be more effective for ELL students than other types of accommodations such as dual language booklets and linguistically simplified tests (Francis, Rivera, Lesaux, Kieffer, & Rivera, 2006). However, Grade 8 ELL students' reading comprehension did not improve with simplified English dictionaries in another study (Albus, Thurlow, Liu, & Bielinski, 2005). As a result, it is not easy to make a conclusion about the effects of the use of English dictionaries on ELL students' test performance.

Similar to the findings for dictionaries, mixed effects were found for the use of glossaries. Francis et al. (2006) indicate that ELL students do not benefit from bilingual dictionaries and glossaries, especially for those who are not proficient in their native language or do not receive instruction in their native language. In a recent study, Grade 8 and 9 ELL students did not make more gains by using an English glossary than in the standard condition in math (Wolf, Kim, Kao, & Rivera, 2009). However, in another study, Grade 8 ELL and non-ELL students all scored higher with English glossaries in math (Abedi, Lord, Hofstetter, & Baker, 2000). It should be

noted that the aforementioned studies on ELL students consisted of a large body of Spanish-speaking students in US schools, and, therefore, interpretations about the effects of the test accommodations for ELL students with more diverse linguistic and cultural backgrounds should be made with caution.

The inconsistent results reflect the variations among the studies, including the heterogeneity of student characteristics, the size of samples, the age of the studied groups, the subject domains, and the research methods employed (Laitusis, 2010; Lewandowski et al., 2008). Because of the complexity of these variables, the effects of test accommodations are still a hotly debated issue in terms of the valid interpretation of test results and policies, and decision making in high-stakes assessments. Provinces and territories should conduct empirical studies to investigate the particular effects of test accommodations on their provincial large-scale assessments in order to obtain accurate, comparable and meaningful test results for educational accountability.

How should we make decisions about test accommodations?

Although it seems we still do not have conclusive results, we are heading in promising directions. As we have discussed above, clearly defining a test's constructs is crucial for both test developers and educators. The National Research Council (2004) suggests that additional skills required to complete the assessments should also be analyzed; for instance, listening to the instructions, seeing the items, and writing down the answers. If we gather rich information about the target and additional skills, this will help us when validating and making inferences from the accommodated test scores as well as generating alternate explanations about each student's test results. Ofiesh, Hughes, and Scott (2004) proposed a decision-making model which consists of six steps, including understanding the students' difficulties with specific knowledge and skills

within certain academic domains, and examining the constructs and test format (e.g., multiple-choice items, constructed response items). Moreover, Cawthon, Ho, Patel, Potvin, and Trundt (2009) concluded that we should consider student characteristics, test features, and accommodations when we interpret the results. For the purposes of monitoring and improving test accommodations, the National Center on Educational Outcomes recommends five steps for schools, districts and states (see Christensen, Thurlow, & Wang, 2009, for details):

1. Know the rules and regulations for accommodations
2. Document decisions about accommodations
3. Document the use of accommodations
4. Review accommodations decisions and use
5. Evaluate and report on accommodations

This paper synthesizes empirical findings and suggests a series of procedures to make valid decisions for test accommodations (Figure 1) (e.g., Cawthon et al., 2009; Christensen et al., 2009; National Research Council, 2004; Ofiesh et al., 2004).

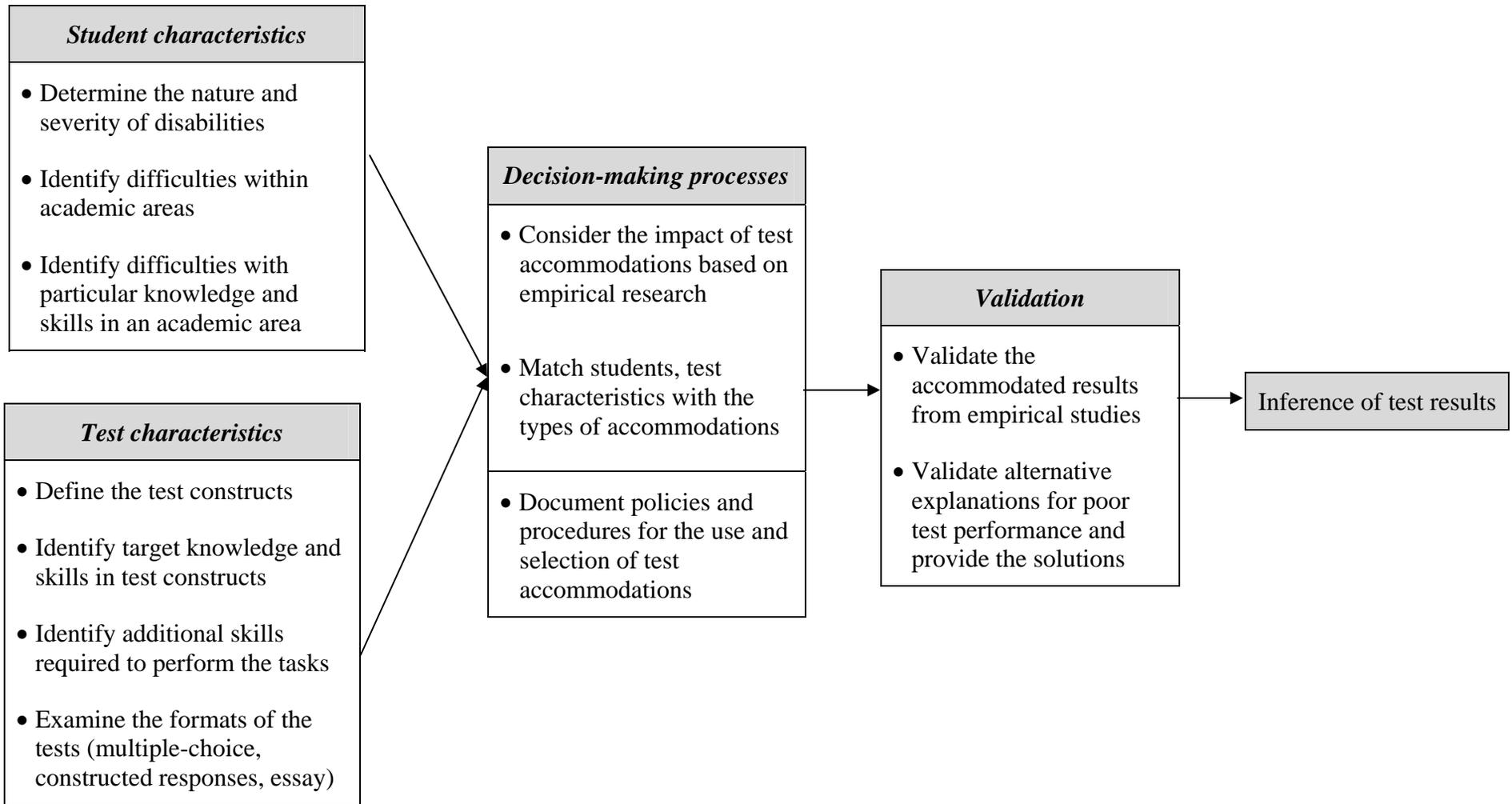


Figure 1. Model for making valid decisions and inferences for test accommodations.

Conclusion

The policies and current practices in Canadian provincial testing programs reveal that test accommodations are subject-specific, customized to fit individual needs and prior experience, and defined differently for different modalities. Some provinces may provide detailed guidelines for choosing and administering test accommodations, while the information may be lacking in other provinces. Regarding the types of accommodation, alternate setting, timing, scribing, read aloud/oral reading, assistive technology, large print, Braille, and sign language are the accommodations commonly used for students with disabilities in Canada. The frequently used accommodations for Canadian ELL students include alternate setting and timing. Furthermore, the written policies on accommodations for students with disabilities are more detailed than those for ELL students in most of provinces. It is useful to consider students' unique characteristics (including disabilities and culturally diverse backgrounds) and the target knowledge and skills measured on the assessments before making decisions about the types of test accommodations for students.

Given the variations of policies and findings in research, it is critically important but challenging for provinces to: (1) investigate the validity and effects of current allowable test accommodations on their own testing programs at different grade levels and subjects; (2) provide evidence to show that the test accommodations provided in the testing programs are fair and valid; (3) examine the current policies on the decision-making processes, administration and evaluation of test accommodations at school, district, and provincial levels; and (4) provide clear guidelines regarding the selection, use, and evaluation of accommodations for disabled and ELL students. Although we have obstacles to overcome in the use of test accommodations, accommodations are promising for fulfilling the goals of fairness and accessible education for all.

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