



**ASK-A-REL INFORMATION REQUEST & RESPONSE:  
DEFINITIONS AND ASSESSMENTS OF NATIVE/INDIGENOUS  
STUDENT OUTCOMES**

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## Introduction and Background

The REL Pacific Ask-a-REL service is part of a collaborative Ask-a-REL reference desk service provided by the 10 regional educational laboratories (RELs). This service functions much in the same way as a technical reference library, by design, providing references, referrals, and brief responses in the form of citations for research-based education questions.

The following document is a response to an Ask-a-REL inquiry from a stakeholder in the Pacific. The requestor is seeking to create a comprehensive document with examples of peer-reviewed articles – as well as examples of projects – on the topics of defining and assessing Native/Indigenous student outcomes in a culturally competent manner. In response to this inquiry, REL Pacific has gathered literature and online resources focused on the following question:

***How have Native/Indigenous communities defined student outcomes for their youth, and what culture-based assessments have been used to measure their student outcomes?***

REL Pacific reviewed sources through a web-based search, making use of databases such as ProQuest, EBSCO and ERIC. Search terms and selection criteria for the resources are included in Appendix A. Descriptions of the resources are quoted from the publication abstract (Abstract) or the publication itself (Introduction or Excerpt). An abstract is always used when available. However, if additional text in the resource provides important information not contained in the author's abstract, the additional information is also provided.

Many articles were found that address the topic of assessment and native populations. Studies and articles that best addressed the question were selected for inclusion. These selections have been organized into these categories:

[Defining Native/Indigenous Student Outcomes](#)

[Establishing a Need for Better Assessments for Native/Indigenous Students](#)

[General Culture-Based Assessments](#)

[Culture-Based Language Assessments](#)

[Culture-Based Math and Science Assessments](#)

[Other Subject-Specific Culture-Based Assessments](#)

[Projects and Additional Resources](#)

## Defining Native/Indigenous Student Outcomes

1. Alaska Department of Education (2012). *Guide to implementing the Alaska Cultural Standards for educators*. Juneau, AK: Author. Retrieved from [https://education.alaska.gov/standards/pdf/cultural\\_standards.pdf](https://education.alaska.gov/standards/pdf/cultural_standards.pdf)

**Preface, p. iv:** In Alaska's pursuit of a high-quality education for all students, educators are guided by two sets of standards that promote student achievement and school quality.

- Student content and performance standards define what students should know and be able to do as a result of their public schooling.
- Professional content and performance standards guide the professional performance of teachers and administrators.

The Alaska Standards for Culturally-Responsive Schools, created by the Alaska Rural Systemic Initiative, are imbedded in the student and professional standards along with regulations for teacher preparation programs in Alaska.

To describe how Alaska educators can use the knowledge and culture students bring to school in a standards based system, the Guide to Implementing the Alaska Cultural Standard for Educators was created with the help of Alaska Native stakeholders. It provides rubrics and guidelines for schools and communities as they examine how their practices promote the cultural well-being of their students. The cultural standards complement the other state standards by orienting the school community to its role in helping students become responsible, capable, and whole human beings. The cultural standards emphasize a strong connection between what students experience in school and their lives out of school by providing in-depth, experiential learning in real-world contexts. They are not intended to standardize instruction, but rather to encourage schools to nurture and build upon the rich and diverse traditions that continue to be practiced in communities throughout Alaska.

Shifting the focus from teaching and learning about cultural heritage as another subject to teaching and learning through the local culture and local perspective has been the goal of the Guide to Implementing the Alaska Cultural Standards for Educators. With this guide, we hope to help pave the way for achieving that goal.

2. Chandler, M. J. (2010). Social determinants of educational outcomes in indigenous learners. *Education Canada*, 50(2), 46-50. Retrieved from <http://www.cea-ace.ca/sites/cea-ace.ca/files/EdCan-2010-v50-n2-Chandler.pdf>

**Abstract:** For the better part of two decades, the author and his research colleagues have been engaged in a broad program of research aimed at identifying certain of the "social determinants of health and wellbeing" common to Canadian First Nation, Metis, and Inuit youth. The present account samples from these ongoing research efforts by recapping two sets of findings that set various markers of educational success in relation to both: (a) the troubled matter of "ethnic-identification" among Aboriginal youth; and (b) the presence or absence of various community-level markers of "cultural continuity" in B.C.'s First Nations bands. These few out-takes from their larger program of research hopefully serve to help make the points that (a) any effort to

simply sum across the radical differences that divide one Aboriginal community from the next will likely result in some misleading banner headline--some claim that is, at best, an "actuarial fiction"; and (b) those First Nations communities that have met with greater success in linking to and celebrating their cultural past, and in re-establishing community control of their own cultural future, also provide their children with the gift of substantially greater levels of academic success.

3. CHiXapkaid, Inglebret, E., & Krebill-Prather, R. (2011). *Views and perspectives of Native educational success: A national survey of American Indians, Alaska Natives, Native Hawaiians and others associated with Indian education*. Washington, DC: National Indian Education Association. Retrieved from <http://www.niea.org/data/files/native%20student%20success%20final%20report.pdf>

**Introduction, p.1:** American Indians, Alaska Natives, and Native Hawaiians (referred to collectively as Native in this report) are achieving success in education. While research literature has been dominated by examination of factors associated with a deficit model (Deyhle & Swisher, 1997), the National Indian Education Association (NIEA) has advocated for bringing increased attention to educational practices that promote Native student success (NIEA, 2009). The High School Equity initiative calls for additional research that can be used to bring increased attention to the educational needs of Native students. Research findings can then be used to guide the development of federal and state policies that will increase Native student access to rigorous and culturally-based curriculum designed to foster achievement.

The purpose of this multi-phase research project was to examine the experience of educational success for Native students and to identify indicators associated with Native student success. Phase I of the research was initiated through qualitative analysis of data generated through in-depth interviews with Native university graduates and a comprehensive review of existing literature. This report focuses on Phase II that sought to involve a larger sample of participants, thus, adding breadth to the evidence base that can be used to support policy recommendations. The research questions guiding the study were:

- How do educators perceive the role of K-12 and non-tribal colleges and universities in meeting the needs of Native students?
  - How do educators define educational success for Native students?
  - What factors influence educational success for Native students?
  - What qualities of the Native student experience are important to their success?
  - How is educational success for Native students different from or similar to educational success for non-Native students?
4. Kanu, Y. (2006). Getting them through the college pipeline: Critical elements of instruction influencing school success among Native Canadian high school students. *Journal of Advanced Academics*, 18(1), 116-145. Retrieved from <http://files.eric.ed.gov/fulltext/EJ753973.pdf>

**Abstract:** It appears from this study that the integration of Native perspectives at the levels of student learning outcomes, instructional methods and resources, assessment of student learning, and as a philosophical underpinning of the curriculum may results in better test scores, better conceptual understanding and higher level thinking, improved self-confidence, and increased motivation among some Native students to attend classes.

**Excerpt, p. 138:** Some of the strategies we used to assess Native student learning appeared to be more effective than others. For example, four Native students reported not being comfortable with oral presentations in front of the class. Student comments included "I am really a shy person" and "In front of an audience, I tend to forget what I want to say" (personal interview, June 18, 2004). However, the use of journals seemed acceptable to everyone. The Native students preferred journal writing because it provided an opportunity to reflect on how they felt, thought, and experienced the content material and the activities provided in the class. According to Curwen Doige (2003), strategies such as journal writing add an element of spirituality to Aboriginal student learning because the students actually get the chance to "spiritually" work through curriculum content and classroom experiences from the inside out as they reflect on these experiences and write about them.

## Establishing a Need for Better Assessments for Native/Indigenous Students

1. Castagno, A. E., & Brayboy, B. J. (2008). Culturally responsive schooling for indigenous youth: A review of the literature. *Review of Educational Research*, 78(4), 941-993. Retrieved from <http://search.proquest.com/docview/214136461?accountid=144346>

**Abstract:** This article reviews the literature on culturally responsive schooling (CRS) for Indigenous youth with an eye toward how we might provide more equitable and culturally responsive education within the current context of standardization and accountability. Although CRS for Indigenous youth has been advocated for over the past 40 years, schools and classrooms are failing to meet the needs of Indigenous students. The authors suggest that although the plethora of writing on CRS reviewed here is insightful, it has had little impact on what teachers do because it is too easily reduced to essentializations, meaningless generalizations, or trivial anecdotes—none of which result in systemic, institutional, or lasting changes to schools serving Indigenous youth. The authors argue for a more central and explicit focus on sovereignty and self-determination, racism, and Indigenous epistemologies in future work on CRS for Indigenous youth.

**Excerpt, p. 958:** The majority of scholarship we reviewed for this article was not strongly grounded in theory but instead offered data-based discussions of various observed outcomes of efforts at CRS for Indigenous youth. Some claims were quite vague and noted outcomes such as "students do well" (U.S. Department of Education, 2001, p. 3), CRS makes "a positive difference" (Lipka, 1990, p. 20), and CRS is "essential to successfully educating" Indigenous youth (Powers et al., 2003, p. 20). Other claims were more specific and focused on particular aspects of student behavior, achievement, knowledge, and dispositions. Our review concurs with Demmert's (2001) that

a series of studies conducted in the past 30 years collectively provides strong evidence that Native language and cultural programs - and student identification with such programs - are associated with improved academic performance, decreased dropout rates, improved school attendance rates, decreased clinical symptoms, and improved personal behavior. (p. 17)

A number of additional studies support these conclusions. In general, scholars have found that efforts at CRS for Indigenous youth result in students who have enhanced self-esteem (Agbo, 2004; Cleary & Peacock, 1998), develop healthy identity formation (Trujillo, Viri, & Figueira, 2002), are more self-directed and politically active (Garcia & Ahler, 1992), give more respect to tribal elders (Agbo, 2004), have a positive influence in their tribal communities (Cleary & Peacock, 1998; Pewewardy, 1998; U.S. Department of Education, 2001), exhibit more positive classroom behavior and engagement (Cleary & Peacock, 1998; Lipka, 1990), and achieve academically at higher rates (Apthorp, D'Amato, & Richardson, 2002; Demmert, 2001; Demmert & Towner, 2003; Klump & McNeir, 2005; Smith, Leake, & Kamekona, 1998; Swisher & Tippeconnic, 1999; Taylor et al., 1991; Zwick & Miller, 1996). A smaller body of scholarship points to the importance of recognizing all voices in the classroom and ensuring that Indigenous students are not silenced in the schooling process (Belgarde et al., 2002), which in turn leads to more meaningful educational experiences and student empowerment (Gay, 2000; Nieto, 2004; Reyhner, 1992b). And still other research points to the enhanced learning outcomes for both

Indigenous and non-Native students when tribally focused curricula are used (Lipka & Adams, 2003; Lipka, Hogan et al., 2005; Lipka, Parmelee, & Adams, 2005).

*REL Pacific at McREL was unable to locate a free link to the full-text version of this resource. Although REL Pacific tries to provide publicly available resources whenever possible, it was determined that this resource may be of interest. It may be found through university or public library systems.*

2. Klenowski, V. (2014). Towards fairer assessment. *Australian Educational Researcher (Springer Science & Business Media B.V.)*, 41(4), 445-470. Retrieved from <http://eric.ed.gov/?q=Towards+Fairer+Assessment&id=EJ1036896>

**Abstract (EIRC website):** Drawing on the largest Australian collection and analysis of empirical data on multiple facets of Aboriginal and Torres Strait Islander education in state schools to date, this article critically analyses the systemic push for standardized testing and improved scores, and argues for a greater balance of assessment types by providing alternative, inclusive, participatory approaches to student assessment. The evidence for this article derives from a major evaluation of the Stronger Smarter Learning Communities. The first large-scale picture of what is occurring in classroom assessment and pedagogy for Indigenous students is reported in this evaluation yet the focus in this article remains on the issue of fairness in student assessment. The argument presented calls for "a good balance between formative and summative assessment" (OECD, "Synergies for Better Learning An International Perspective on Evaluation and Assessment, Pointers for Policy Development," 2013) at a time of unrelenting high-stakes, standardized testing in Australia with a dominance of secondary as opposed to primary uses of NAPLAN data by systems, schools and principals. A case for more "intelligent accountability in education" (O'Neill, "Oxford Review of Education" 39(1):4-16, 2013) together with a framework for analyzing efforts toward social justice in education (Cazden, "International Journal of Educational Psychology" 1(3):178-198, 2012) and fairer assessment make the case for more alternative assessment practices in recognition of the need for teachers' pedagogic practice to cater for increased diversity.

*REL Pacific at McREL was unable to locate a free link to the full-text version of this resource. Although REL Pacific tries to provide publicly available resources whenever possible, it was determined that this resource may be of interest. It may be found through university or public library systems.*

3. Nelson-Barber, S., & Trumbull, E. (2007). Making assessment practices valid for indigenous American students. *Journal of American Indian Education*, 46(3), 132-147. Retrieved from [https://jaie.asu.edu/sites/default/files/463\\_2007\\_9\\_nelson-barber\\_trumbull.pdf](https://jaie.asu.edu/sites/default/files/463_2007_9_nelson-barber_trumbull.pdf)

**Abstract:** Educational assessment, as it is typically conducted in U.S. schools, does not successfully capture or build on potentially important content knowledge and understanding of Indigenous students. In fact, current policies (such as the No Child Left Behind Act, 2002) are interfering with the implementation of many of the things we know about making assessments appropriate for Native students. This paper draws from the authors' extensive experience working with Indigenous teachers and communities to discuss how their well-developed ways of knowing, learning, and problem solving can be understood and utilized in the analyses of student processes and products. The paper explores some of the cultural perspectives and culture-related strengths exhibited by Indigenous learners and shows how awareness of them can

lead to a reduction in bias and inequity in assessment. It also explores the issues in the context of some of the historical and sociocultural factors that have affected the schooling of American Indians and Alaska Natives. Suggestions are offered regarding research that could contribute to identification of strategies for improving educational outcomes for these students. New research would build on what we know to be effective and take cues from what has worked successfully for English language learners who face challenges similar to Native students.

4. ÖZerk, K., Whitehead, D. (2012). The impact of national standards assessment in New Zealand, and national testing protocols in Norway on indigenous schooling. *International Electronic Journal of Elementary Education*, 4(3), 545-561. Retrieved from <http://files.eric.ed.gov/fulltext/EJ1070447.pdf>

**Abstract:** This paper first provides a critic of the implementation of compulsory national assessment protocols internationally, and then nationally through a review of the implementation process used for the introduction of National Standards in New Zealand, and National Testing in Norwegian mainstream schools. It then reviews the impact of these two assessment regimes on indigenous Māori and Sámi - medium schools in the context of historic policies of marginalisation and assimilation. Finally, it notes the crucial role of each national government in securing funding for the production of culturally responsive National Standards and National Testing in the effort of both indigenous groups to protect their languages and cultures.

5. Solano-Flores, G., Backhoff, E., Contreras-Niño, L. A., & Vázquez-Muñoz, M. (2015). Language shift and the inclusion of indigenous populations in large-scale assessment programs. *International Journal of Testing*, 15(2), 136-152. Retrieved from <http://www.tandfonline.com/doi/pdf/10.1080/15305058.2014.947649>

**Abstract:** Indicators of academic achievement for bilingual students can be inaccurate due to linguistic heterogeneity. For indigenous populations, language shift (the gradual replacement of one language by another) is a factor that can increase this heterogeneity and poses an additional challenge for valid testing. We investigated whether and how indigenous populations can be validly included in a large-scale assessment program. We gave Mexican preschool Mayan students aged 5 to 6 years the same set of mathematics items in three versions: (1) original in Spanish, (2) Mayan translation, and (3) content equivalent, developed from scratch in Mayan. Also, we collected information on the students' and the teachers' use of Spanish and Mayan, and on the communities' support of the two languages. Students performed poorly on the three versions. Generalizability theory-based analyses revealed considerable performance inconsistency across items and language versions and low generalizability and dependability coefficients. This performance instability appears to stem from a dwindling support of the Mayan language in Mayan schools and communities. Fair, valid assessment of indigenous populations in either their languages or their countries' dominant languages appears to be difficult to accomplish with current testing models and policies.



## General Culture-Based Assessments

1. Demmert Jr., W. G. (2005). The influences of culture on learning and assessment among Native American students. *Learning Disabilities Research & Practice (Wiley-Blackwell)*, 20(1), 16-23. Retrieved from <http://blogs.ubc.ca/dryan/files/2008/10/fulltext.pdf>

**Abstract:** The purpose of this article is to raise issues concerning the influences of culture on assessments of Native American students. The nature and extent of the problem is portrayed by citing information from national data sources on the achievement of Native American students. Cultural aspects of assessment and principles of assessment are discussed, using personal experiences to encourage others to reflect on cultural aspects of assessment. The article ends with the argument that there is much to learn about assessing Native American and other minority students, taking into account the external influences of culture, environment, attitudes, context, and perspectives.

**Excerpt, p. 21:** Based on the information presented and reviewed for this article, I believe it is possible to identify the factors or principles that need to be considered in any dialogue about “cultural factors in assessment.” I propose the following as possibilities:

- (1) Genetics, experiences, and culture significantly influence a person’s cognitive development and understanding of the world in which he/she lives.
  - (2) Cultural attributes are not static and evolve across generations.
  - (3) Each of us has a different set of intelligences that may be predetermined or learned, but that we can build upon.
  - (4) The context in which information is presented, or in which learning takes place, may enhance or impede a person’s understanding.
  - (5) One is not able to understand mental activity unless the cultural settings and resources are taken into account.
  - (6) There is much to learn before we understand all of the nuances of testing and assessing groups outside our own spheres of experiences and perspectives.
  - (7) There is an ethical responsibility to develop a true collaboration with indigenous people when conducting research involving assessment of Native students.
2. Estrin, E.T., & Nelson-Barber, S. (1995). *Issues in cross-cultural assessment: American Indian and Alaska Native students*. (Knowledge Brief, Number Twelve) San Francisco: Far West Lab. Retrieved from <http://files.eric.ed.gov/fulltext/ED388484.pdf>

**Abstract:** This brief focuses on assessment issues for American Indian and Alaska Native (collectively referred to as "Native") students, as well as other pedagogical issues related to improved teaching and educational outcomes. Although traditional Native educational strategies emphasize cooperation, experiential learning, and reflection, Native students continue to be at a disadvantage in the classroom. The reasons lie in several intersecting realities: troubled historical relations between tribes and the federal government affecting Native schooling, ongoing educational practices that ignore or devalue cultural ways of knowing, and the dearth of American Indian and Alaska Native teachers. Understanding the school performance of Native students requires a sociocultural perspective that takes into account differences between

community and school in social and cultural context, the unconscious nature of these contexts, effects on student learning and organization of knowledge, and implications for effective instructional styles and student evaluation. Despite supportive federal legislation, a repertoire of culturally specific instruments to assess Native student performance does not exist. Standardized norm-referenced tests present such difficulties as inappropriate content, time pressures, reliance on verbal information, basic premises of multiple-choice testing, and alien nature of formal on-demand testing. Indeed, achievement tests can be seen as merely indices of the student's acculturation to Western cultural knowledge and conventions for displaying knowledge. More culturally responsive assessment incorporates content reflecting local contexts and experiences, uses procedures that reflect local ways of thinking and learning, and provides students with options. Other concerns related to the question of whose standards are appropriate, proper interpretation and use of test data, and the value of alternative assessments. (SV)

3. Fox, S.J. (1999). Student assessment in Indian education or what is a roach? In K. Gayton Swisher & J.W. Tippeconic III (Eds.), *Next steps: Research and practice to advance Indian education* (pp. 161-178). Charleston, WV: ERIC Clearinghouse on Rural Education and Small Schools. Retrieved from <http://files.eric.ed.gov/fulltext/ED427909.pdf>

**Abstract:** American Indian students generally have not done well on traditional standardized tests. Such tests have been criticized because their ability to predict academic success is questionable, and they correlate with socioeconomic class, reward superficial learning, encourage classroom practices that fail to provide high-quality education, and are culture and gender biased. In contrast, authentic or performance-based assessments allow students to construct, rather than select, responses. An ongoing assessment based on observations of student behavior on tasks, performance-based assessment evaluates the learning of critical thinking skills, demonstration of applied knowledge, and performance of tasks in the real world. American Indians have historically used performance-based assessment, and the adoption of this method may provide the first fair indication of what Indian children know and can do. New performance-based methods of assessing student learning are being developed, and all schools receiving Title I funds are required to have performance-based assessment systems in place by the 2000-2001 school year. The Bureau of Indian Affairs has adopted the Learning Record, developed in Great Britain and adapted for use in California, as the performance-based assessment system to be phased in over 3 years. Although performance-based assessment has great potential for American Indian education, Indian educators can also improve assessment by promoting the inclusion of oratory skills to balance reading skills, by ensuring culturally relevant curriculum, and by factoring in students' language and experience when judging their abilities. Contains endnotes and a bibliography.(TD)

4. Keegan, P.J., Brown, G.T., & Hattie, J.A.C. (2013). A psychometric understanding of socio-cultural factors in test validity: The development of standardised test materials for Māori

medium schools in New Zealand/Aotearoa. *In Constructing Achievement: A Sociocultural Perspective*, 42–54. Routledge: London. Retrieved from <https://books.google.co.nz/books?id=TIy3AwAAQBAJ>

**Abstract:** Māori, the indigenous people of New Zealand, are approximately 15% of the national population (4.4 million) and 20% of the school population. After decades of decline, Māori language has experienced a revival since the 1970s with some 14% of Māori children attending Māori-medium schooling. From 2000 to 2007, the government funded the development of a computer-assisted, standardised testing system (known as TITe) for use in Māori-medium schools. Consistent with psychometric theories of validity and with a pluralist approach to sociocultural differences, the Māori test materials were developed in a culturally-responsive and sensitive manner, an approach recommended for other language groups.

*REL Pacific at McREL was unable to locate a free link to the full-text version of this resource. Although REL Pacific tries to provide publicly available resources whenever possible, it was determined that this resource may be of interest. It may be found through university or public library systems.*

5. Klenowski, V. (2009). Australian Indigenous students: addressing equity issues in assessment. *Teaching Education*, 20(1), 77-93. Retrieved from <http://www.tandfonline.com/doi/abs/10.1080/10476210802681741>

**Abstract:** This article provides the background and context to the important issue of assessment and equity in relation to Indigenous students in Australia. Questions about the validity and fairness of assessment are raised and ways forward are suggested by attending to assessment questions in relation to equity and culture-fair assessment. Patterns of under-achievement by Indigenous students are reflected in national benchmark data and international testing programmes like the Trends in International Mathematics and Science Study and the Program for International Student Assessment. The argument developed views equity, in relation to assessment, as more of a sociocultural issue than a technical matter. It highlights how teachers need to distinguish the “funds of knowledge” that Indigenous students draw on and how teachers need to adopt culturally responsive pedagogy to open up the curriculum and assessment practice to allow for different ways of knowing and being.

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6. McDowell Group (2001). Alaska Native education study: A statewide study of Alaska Native values and opinions regarding education in Alaska. (Report prepared for First Alaskans Foundation) Juneau, AK: Author. Retrieved from <http://files.eric.ed.gov/fulltext/ED466342.pdf>

**Abstract:** This document contains four reports detailing a four-phase research project on Alaska Natives' attitudes and values toward education. A literature review examines the history of Native education in Alaska, issues in research on American Indian and Alaska Native education, dropout studies, student assessment, language and culture, learning styles, teaching styles and teacher training, distance learning and technology-based education, parent and community involvement, and higher education. The other three reports present findings of interviews with

Alaska Native educational and cultural experts; a random telephone survey of 1,000 Alaska Native households; and focus groups with students, parents, and elders in Anchorage and rural Aniak and with business representatives and human services personnel. Common themes that arose across the four studies included barriers to education for Alaska Native students, the role of language and culture in education, family and community problems contributing to the high Native dropout rate, racism in urban schools, high teacher turnover and poor teacher quality in rural schools, and the need for parent and community involvement in schools. Appendices contain 147 references, a list of relevant educational Web sites, and breakdowns of focus group findings by group type. (SV)

**Excerpt, p. 30:** In recent years, many educators have challenged the appropriateness of using achievement, aptitude, and intelligence tests to measure minority students' abilities. Performance-based indicators are now preferred among many educational researchers. Bordeaux (1995) notes that assessments such as student portfolios, projects, interviews, teacher observations, and other performance measures are more culturally relevant to Native Americans. For example, in the Crow way:

As children grew up, adults observed them to determine their knowledge and skill development. Children exhibited different levels of knowledge and skill in tasks such as hunting, running, consensus building, healing, and spiritual leadership. Children who demonstrated superior performance were the ones who later led hunting parties, provided spiritual guidance, served as orators for the people, and performed other necessary tasks for the group. (Bordeaux, 1995).

Similarly, performance-based assessment directly examines student performance on specific tasks that are important for life (Worthen, 1993). The increased use of performance-based assessment may help give American Indian and Alaska Native students more legitimate evaluations of their knowledge and skills. Performance-based assessment is also considered a tool for schools using language and culture as integral parts of the total curriculum (Bordeaux, 1995).

7. Philpott, D. (2006). Identifying the learning needs of Innu students: Creating a model of culturally appropriate assessment. *Canadian Journal of Native Studies*, 26(2), 361-381. Retrieved from <http://www3.brandonu.ca/library/CJNS/26.2/07Philpott.pdf>

**Abstract:** This article discusses the methodology and findings of a major assessment project of Innu children in Labrador. The project was commissioned to identify the learning needs of these children so as to facilitate an enhanced school system, responsive to Innu language and culture. The researchers developed a methodology which carefully blends qualitative and quantitative approaches, within a paradigm of culturally defined inclusive schooling, to obtain a wealth of information on the learning needs of these children. Amidst the flurry of concern for culturally appropriate assessment, these researchers provide tangible, field-tested information on how schools can use assessment to enhance education.

8. Rameka, L. (2007). Māori Approaches to Assessment. *Canadian Journal of Native Education*, 30(1), 126-144.

**Abstract:** Kaupapa Māori theory serves as the overarching philosophical framework for two interrelated projects discussed in depth in this article: (a) the New Zealand Ministry of Education funded Kaupapa Māori Learning and Assessment Exemplar Project (KMLAE); and (b) the author's doctoral work, which chronicles the progress of participating Māori centers toward the development of Māori early childhood assessment approaches.

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9. Shields, C. M. (1997). Learning about assessment from Native American schools: Advocacy and empowerment. *Theory Into Practice*, 36(2), 102. Retrieved from <http://www.tandfonline.com/doi/pdf/10.1080/00405849709543753>

**Abstract:** Examines the usefulness of accountability measures for student achievement as empowerment tools for all students, providing examples from Native American schools. The paper posits the need for understanding current standardized testing, demonstrates how content currently tested can help increase the utility of instructional programs, and advocates adoption of authentic assessment. (SM)

**Excerpt, pp. 107–108:** The lessons learned from these Native American Schools for empowering practices of educational assessment are complex and multifaceted. I have argued that while standardized tests are indeed culturally biased, and are frequently used for inappropriate comparisons—and even less appropriately for the allocation or withholding of funding—some trends and issues may be usefully identified from a careful examination of test scores. Extremely low test scores must not be dismissed by defensiveness and denial on the part of educators. An apathetic (and pathetic) acceptance of the status quo must indeed be addressed by educational practices that reject a model of cultural deficiency and affirm the value of cultural difference. Sharp declines in the scores of groups of students may be indicators of systemic or institutional barriers to their success.

Taking time to analyze the types of questions asked on standardized tests and using the information to understand and explore areas of cultural and linguistic difference has enhanced the understanding of both teachers and students. Increased understanding has led to enrichment activities and increasingly high expectations for student achievement. The teachers are not "teaching to the test"; rather, they have been using test concepts to extend their instructional and curricular practices.

Authentic instruction that involves culturally relevant activities, includes the wider community, and actively engages students in their own learning is closely linked to authentic demonstrations and indications of student learning. This point has clearly been made by examining some initiatives of two Navajo schools; however, the implications are valid for schools and students everywhere.

All students benefit when (a) educators take time to understand and probe the information from standardized tests—to carefully and appropriately interpret what the tests mean and do not mean and how they might best be used; (b) concepts from tests are connected to ongoing instruction rather than decontextualized and used only for purposes of legitimization or

delegitimization of current practice; and (c) authentic instruction is carefully linked to authentic assessment. The destructive models of defensiveness and denial, as well as the still too common practices of explanation and prediction, which locate blame in individual students, their families, or their home culture, can be overcome by practices that are culturally and pedagogically appropriate for all students.

*REL Pacific at McREL was unable to locate a free link to the full-text version of this resource. Although REL Pacific tries to provide publicly available resources whenever possible, it was determined that this resource may be of interest. It may be found through university or public library systems.*

10. Solano-Flores, G., Trumbull, E., & Nelson-Barber, S. (2002). Concurrent Development of Dual Language Assessments: An Alternative to Translating Tests for Linguistic Minorities. *International Journal of Testing*, 2(2), 107-29. Retrieved from [http://www.tandfonline.com/doi/abs/10.1207/S15327574IJT0202\\_2](http://www.tandfonline.com/doi/abs/10.1207/S15327574IJT0202_2)

**Abstract:** Developed a model for the concurrent development of assessments in two language versions and tested the model with classes of seven bilingual teachers who developed the assessments in English and Spanish. Results show that the model allows assessment developers to give deeper consideration to culture in test development. (SLD)

*REL Pacific at McREL was unable to locate a free link to the full-text version of this resource. Although REL Pacific tries to provide publicly available resources whenever possible, it was determined that this resource may be of interest. It may be found through university or public library systems.*

## Culture-Based Language Assessments

1. Dixon, S. (2013). Educational Failure or Success: Aboriginal Children & Non-Standard English Utterances. *Australian Review of Applied Linguistics*, 36(3), 302–315. Retrieved from <http://www.nla.gov.au/ojs/index.php/aral/article/viewFile/3228/3785>

**Abstract:** Within the Australian education system, Aboriginal students' use of non-standard English features is often viewed simplistically as evidence of non-attainment of literacy and oral-English milestones. One reason for this is the widespread use of assessment tools which fail to differentiate between native-English speakers and students who are learning English as a second language. In these assessments, non-standard English features are framed as "mistakes" and low scores taken as evidence of "poor" performance. This paper will contrast a mistake-oriented analysis with one that incorporates knowledge of the students' first language. It will clearly show that when consideration is given to the first language, a more nuanced picture of English proficiency emerges: one that is attuned to the specific second language learning pathway and thus far better placed to inform both assessment and classroom instruction.

2. Rau, C. (2013). Assessing Māori Indigenous Language Learners Assessment Around the World Part 18. *Current Practices in Assessing Languages in Australia and New Zealand*.

**Abstract:** In Aotearoa/New Zealand, educational policy and ensuing initiatives have increasingly focused on accelerating student achievement in literacy and numeracy, particularly for Māori learners in both English medium and Māori medium settings, creating a tension with broader expectations on how (Māori) linguistic and cultural regeneration should be achieved. In 2010, national standards were introduced for year 1 to 8 students in English medium amidst (lingering) controversy and in 2011 for students in Māori medium classrooms. Unlike international examples where national standards exist, the Aotearoa/New Zealand example requires teachers to make judgments about student achievement in relation to national expectations based on multiple sources of information (as opposed to performance on a single test). This creates both challenge and opportunity for educators in Māori medium settings where, to date, the development and promulgation of assessments (and assessment practices) has been largely ad hoc and spasmodic.

This chapter describes and comments on the various Māori language schooling options catering for year 1 to 8 students in Aotearoa/New Zealand's educational landscape; how the Māori medium sector has responded to the increasing need for standardized assessments; Ministry of Education policy that emphasizes and gives expression to the right of Māori to enjoy educational success as Māori; the development of national standards for Māori medium settings; challenges and opportunities created for Māori medium education by the current environment; and considerations for continuing improvement to meet achievement expectations and challenge pervading deficit theorizing about Māori learners. The chapter also profiles two well-established Māori language schools whose students are experiencing success as Māori in their second language (i.e., Māori) as well as in the English language, despite the fact that, compared to their counterparts in English medium classrooms, formal English language instruction occurs in the later years of schooling.

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3. Rau, C. (2005) Literacy Acquisition, Assessment and Achievement of Year Two Students in Total Immersion in Māori Programmes. *International Journal of Bilingual Education and Bilingualism*, 8(5), 404-432. Retrieved from <http://www.tandfonline.com/doi/pdf/10.1080/13670050508668622>

**Abstract:** One of the aims of Māori-medium education is to address Māori language loss. One of the challenges facing Māori-medium educators is to identify configurations that acknowledge the substantive importance of English language instruction without detracting from the priority that must be given to the regeneration of the Māori language. Issues relating to Māori/English bilingualism and assessment development in the New Zealand context are introduced and discussed in the light of local and international literature on language acquisition and other related fields. This paper also presents and compares the results of testing from 1995 and 2002–2003 using a reconstructed standardised assessment in literacy for Year 2 students in 80–100% immersion in Māori as a measure of literacy and Māori language acquisition.

4. Sims, C. (2008). Assessing the language proficiency of tribal heritage language learners: Issues and concerns for American Indian Pueblo languages. *Current Issues in Language Planning*, 9(3), 327-343. Retrieved from <http://www.tandfonline.com/doi/abs/10.1080/14664200802139588>

Among American Indian Pueblo tribes, community-based language revitalisation initiatives have been established in response to a growing language shift towards English. This has been most prominent among school age children, prompting some tribes to extend tribal language programmes into local public schools. For centuries, the transmission of Pueblo Indian languages has depended solely on oral language traditions. This continues to be the foundation for tribal language initiatives with the primary goal being that of maintaining language and culture. The socio-cultural aspects of language use in family and community provide the context for language instruction in these programmes. Several of these programmes, recently established in schools, receive supplemental funding provided through state bilingual education funds. However, this has also ushered in new requirements for assessing the native language proficiency of students participating in these programmes, thereby creating new challenges for Pueblo communities who have focused their efforts on oral language maintenance. One issue this has raised concerns the purpose for language proficiency assessments and how such practices differ with respect to tribal goals for language instruction. This paper describes several of these issues from the perspective of Pueblo language communities and the potential social impact of language assessment practices on tribal language programmes.

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5. Wigglesworth, G. & Keegan, P. (Oct, 2013). Assessing Australian and New Zealand Indigenous Languages. *The companion to language assessment IV*, 18(27), 1949–1960. Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/9781118411360.wbcla103/full>

**Abstract:** The assessment of children's indigenous language has, in general, received very little attention despite the fact that it is a worldwide issue with children in every continent growing up in multilingual situations. In this chapter we focus on approaches to assessing children's indigenous language knowledge in two very different contexts—Australia and New Zealand.

Indigenous languages in Australia are in rapid decline. At the time of European settlement there were in the region of 250 languages, many of which were spoken by only a small number of people. However, there are now few indigenous communities where children are growing up learning their traditional indigenous language, and it is predicted that at the current rate of loss there will be no indigenous languages by 2050. The situation in New Zealand is quite different, with Māori being the single indigenous language. However, it is spoken by less than 25% of the Māori population (approximately 15% of New Zealand's population of 4 million are Māori) and is also in decline.

In these different contexts, therefore, approaches to assessment are necessarily different. In Australia the limited amount of research that has been undertaken has focused on receptive skills, arguing that these measures can provide a useful picture of children's current language knowledge.

In New Zealand, all Māori children are exposed to both English and Māori while growing up, but given the prevalence of English in New Zealand society it is difficult to determine how many Māori children truly are first language speakers of Māori or Māori dominant. Almost all Māori-speaking children attend *kōhanga reo* (early childhood education centers based on Māori culture and using Māori as the medium of communication) and some form of Māori bilingual/immersion education in the compulsory school sector. Assessment tools developed for the Māori-medium sector have focused on numeracy and literacy, although recent research has attempted to develop measures to assess students' proficiency of spoken Māori.

6. Wilson, W. H. (2013). Assessing Hawaiian. *The companion to language assessment IV*, 15(108), 1748–1758. Retrieved from <http://onlinelibrary.wiley.com/doi/10.1002/9781118411360.wbcla093/abstract>

**Abstract:** Over a period of 30 years, Hawaiian has moved from being a nearly extinct and forgotten language receiving almost no attention to being the single non-English language most embedded as an official language of education and academic assessments in any of the 50 states within the USA. This change is highly related to the post-World War II movement for equality for previously colonized peoples. It is also built upon inertia from government language use patterns and community identity factors in the small 19th-century multiracial kingdom of Hawaii.

Hawaii is the only one of the 50 states in the USA with two official languages recognized in its constitution. The gradual expansion of use of Hawaiian by the state of Hawaii has become a role model for other indigenous governments of the USA including American Indian tribes, Alaska Native villages, and Pacific Island territories. Assessments of Hawaiian language fluency and of

academic knowledge through the Hawaiian language range from the private sector through to graduate school.

While locally distinct historical factors have played a major role in the current attention to the use of Hawaiian, Hawaiian has also been weakened by shared American historical factors relative to restrictions of language diversity, and on indigenous languages in particular. Hawaiian was nearly exterminated by the elimination of public Hawaiian medium education in 1896, and a subsequent ban on its use as a medium of education in schools that only ended in 1986. Continuing into the present are perspectives on Hawaiian that undervalue high fluency in it compared to foreign languages and which run counter to other trends that place high value on Hawaiian for symbolic purposes.

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## Culture-Based Science and Math Assessments

1. Chigeza, P. (2008). Language negotiations indigenous students navigate when learning science. *Australian Journal of Indigenous Education*, 37, 91-97. Retrieved from [http://researchonline.jcu.edu.au/16436/3/16436\\_Chigeza\\_2008.pdf](http://researchonline.jcu.edu.au/16436/3/16436_Chigeza_2008.pdf)

**Abstract:** This paper reports on implications of a research study with a group of 44 Indigenous middle school students learning the science concepts of energy and force. We found the concepts of energy and force need to be taught in English as we failed to find common comparable abstract concepts in the students' diverse Indigenous languages. Three categories of describing the concepts were identified: nine students who used scientific genre to explain and demonstrate the concepts (20%); 15 students who used limited scientific genre to explain and demonstrate the concepts in terms of direct action (35%); and 20 students who did not use scientific genre to either describe or display by direct action their knowledge of the concepts (45%). Indigenous students learning school science navigate language negotiations before negotiating the language challenges in science learning. School science achievement is measured using Standard Australian English concept descriptors. These assessment instruments are designed to measure the student's negotiations from Standard Australian English into science. It is possible that these instruments do not adequately measure the Indigenous student's negotiations from their vernacular language into science. Developing a Creole science could empower Indigenous students learning school science to develop the capacity to successfully negotiate the language systems.

2. Friesen, J. B., & Ezeife, A. N. (2009). Making science assessment culturally valid for aboriginal students. *Canadian Journal of Native Education*, 32(2), 24-37,118.

**Abstract:** Developing visible and meaningful connections between Western school science and Aboriginal science will bring school science closer to home experiences for Aboriginal students, giving them greater confidence, increased self-esteem, more initiative, and creativity (Cajete, 1994; Shizha, 2007). Developing these connections is achieved in part through creating culturally responsive assessment practices in science classrooms from a sociocultural perspective. Such a perspective sees knowledge and learning in terms of the relationship between an individual and his or her environment (Gee, 2008; Mislavy, 2006). It is imperative that science assessments reflect the idea that culture and society play a critical role in cognitive development (Solano-Flores & Nelson-Barber, 2001). Science assessments related to Aboriginal experiences and developed in collaboration with Aboriginal community members will have greater cultural validity and develop the connections between Western and Aboriginal science. Attaining greater cultural validity in science assessments occurs when the focus of school science changes from a positivistic, assimilative perspective to a more sociocultural perspective.

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- Grootenboer, P., & Sullivan, P. (2013). Remote indigenous students' understandings of measurement. *International Journal of Science and Mathematics Education*, 11(1), 169-189. Retrieved from [http://www98.griffith.edu.au/dspace/bitstream/handle/10072/55307/84518\\_1.pdf?sequence=1](http://www98.griffith.edu.au/dspace/bitstream/handle/10072/55307/84518_1.pdf?sequence=1)

**Abstract:** It is widely accepted that mathematical learning builds upon students' prior knowledge and understandings, and their identities. In this study, this phenomenon is explored with indigenous students in remote community schools in outback Australia. Through one-on-one task-based interviews, it was found that these students had some clear understandings of the measurement concepts involved, although these understandings were often idiosyncratic to these students in this context. The task-based one-on-one interview gave better insights into students' knowledge than the written form of the National Assessment Program-Literacy and Numeracy assessment. Nevertheless, the students' conceptions provide a useful basis upon which to build subsequent knowledge, understanding and skills in the forms required by the formal mathematics curriculum.

**Excerpt, p. 21:** The results of this study have shown that many of the students did have mathematical understandings and skills that could engender success if they experienced mathematical pedagogy that builds on from their existing conceptions and knowledge. To this end, teachers need to have an appreciation of the mathematical identities, conceptions and strengths of their students, and therefore, processes like task-based interviews may well be useful (Battista, 2004). This would enable teachers to provide mathematical pedagogy that promotes deep and robust mathematical knowledge that can be revealed in a range of formats, including national pencil-and-paper testing (Sullivan, 2009).

- Ward, E. M. G., Semken, S., & Libarkin, J. C. (2014). The design of place-based, culturally informed geoscience assessment. *Journal of Geoscience Education*, 62(1), 86-103.

**Abstract:** We present a mixed-methods approach to community-based assessment design that engages tribal college and university faculty, students, and science educators, as well as experts in cultural knowledge from the Blackfeet and Dine (Navajo) nations. Information from cultural experts, gathered through a combination of sequential surveys and focus group sessions, was analyzed to identify important themes with regard to assessment and geoscience content within the context of these communities. While experts use a variety of assessment approaches in their classrooms, only pre- and post-testing and portfolios were found to be most valuable. Experts indicated that the primary role of assessment was to monitor student progress, steer instruction, and prepare students for success; thus, assessment should be tied to the course goals. Experts differed on their views regarding sources of bias in testing, but overall they agreed that test language and content were both strong sources of bias. They indicated that input on assessment would help to incorporate local context and provide a mechanism for combating bias. Surveys completed by tribal college faculty and Native American students from Blackfeet Community College (BCC) and Arizona State University (ASU) provided information on the themes of geoscience, native science, place, and culture. Participants provided a variety of examples of important geoscience concepts that focused on (1) traditional geoscience concepts (e.g., the composition of Earth materials), (2) Earth system concepts (e.g., the environment and ecosystems), and (3) interactions between native culture and geoscience (e.g., incorporation of native language in science curriculum). Combined, these data offer the basis for developing

place-based and culturally informed geoscience assessments by revealing geoscience content that is important to the local community. To aid in assessment design, one-on-one interviews with tribal college faculty and science educators, as well as students from BCC and ASU, provided specific feedback on the question validity of select items from an existing instrument: the Geoscience Concept Inventory (GCI). Emergent themes from the interview transcripts address assessment content, language, and format and reference school science, cultural knowledge, physical places, and connections to the local landscape (e.g., sense of place). Together, these data (1) address the validity of the GCI as a standardized assessment measure in these student populations and (2) provide the basis for developing open-ended assessment questions and concept inventory-like questions that incorporate this feedback.

*REL Pacific at McREL was unable to locate a free link to the full-text version of this resource. Although REL Pacific tries to provide publicly available resources whenever possible, it was determined that this resource may be of interest. It may be found through university or public library systems.*

## Other Subject-Specific Culture-Based Assessments

1. Ogata, V. F., Sheehy, P. H., & Noonan, M. J. (2006). Rural native Hawaiian perspectives on special education. *Rural Special Education Quarterly*, 25(1), 7-15.

**Abstract:** Native Hawaiians are an involuntary minority group who became Americans through an overthrow of their monarchy and colonization in the late 1800s. They have a history of separate and substandard schooling, and political and economic oppression. Currently, Native Hawaiians are overrepresented in special education, due in large part to the mismatch between western schooling and Hawaiian culture and speaking Pidgin English as their first language. In addition to overrepresentation, special education issues for Native Hawaiians include conducting unbiased assessment, providing culturally-relevant instruction and behavior management, and supporting families of students with disabilities. These issues overlap significantly with higher education challenges of recruiting and retaining Native Hawaiians in special education teacher preparation programs and developing culturally competent special educators.

**Excerpt:** There are cultural, language, and environmental differences that may impact the performance of Hawaiian students on norm-referenced tests, such as the Woodcock-Johnson Tests of Achievement. For example, Hawaii has no seasonal changes. Hawaiian students learn about changes of the seasons by reading, watching videos, and listening to other's experiences. Also, Native Hawaiian children show respect by referring to adults as "uncle" or "auntie" even though the individual is of no relation to the child. This and other cultural and language differences may affect students' understanding of test items and possible answers; thus introducing bias into the test results.

Behavior scales and adaptive behavior instruments, may also be inappropriate for Native Hawaiians. Students whose accepted cultural practices include overlapping speech, group interdependence, and punitive punishment may not score well on assessment standards which focus on independence and nonphysical dispute resolution. In addition, Native Hawaiian family members who complete the behavior surveys may not fully understand the questions due to differences in language and perception of teacher as an authority.

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2. Verwoord, R., Mitchell, A., & Machado, J. (2011). Supporting indigenous students through a culturally relevant assessment model based on the medicine wheel. *Canadian Journal of Native Education*, 34(1), 49-66,103-104.

**Abstract:** We describe the development of a student assessment model based on the medicine wheel for implementation in the Child Welfare course (FCC 240) as part of the Family and Community Counselling Program at the Native Education College (NEC), a private Aboriginal post-secondary institution in Vancouver, BC. We discuss the process of developing the model from our own social locations: Roselynn is a female Caucasian instructor with European and Indonesian heritage; Jair is a male adult learner with Mestizo/Indigenous heritage from South America; and Ashley is a female Indigenous learner with Wet'sewet'en Carrier heritage. Drawing

from theory on culturally relevant assessment, we present an assessment model that privileges students' many ways of knowing in the context of a course on child welfare. The framework for assessing students takes into account the institutional aims and objectives of NEC, the specific course goals and learning objectives of FCC 240, and supports the diverse perspectives and experiences of the Indigenous learners who are studying to be social workers. By emphasizing these perspectives, the students can focus on their strengths as Indigenous youth, make their learning more meaningful, and place learning within a context that may be more culturally relevant.

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## Projects and Additional Resources

- Culturally-Based Assessments in New Zealand
  - Results from *Ngā Whanaketanga Rumaki Māori* –
    - <http://www.educationcounts.govt.nz/statistics/schooling/nga-whanaketanga-rumaki-maori-achievement-results>
  - Te Marautanga o Aotearoa (Māori medium curriculum) & *Ngā Whanaketanga Rumaki Māori* -
  - <http://tmoa.tki.org.nz/Nga-Whanaketanga-Rumaki-Maori>
  - <http://tmoa.tki.org.nz/Nga-Whanaketanga-Rumaki-Maori/He-Aratohu-ma-te-Pouako>
  - NZQA – New Zealand Qualifications Authority (National Certificate of Educational Achievement info) - <http://www.nzqa.govt.nz/qualifications-standards/qualifications/ncea/understanding-ncea/how-ncea-works/>
  - National Certificate of Educational Achievement Māori medium achievement standards - <http://tmoa.tki.org.nz/Taumata-Matauranga-a-Motu-Ka-Taea>
  - Pathways to bicultural assessment (He huarahi ki te aromatawai ahurea rua) - <http://www.education.govt.nz/early-childhood/teaching-and-learning/kei-tua-o-te-pae-2/bicultural-assessment-he-aromatawai-ahurea-rua/pathways-to-bicultural-assessment-he-huarahi-ki-te-aromatawai-ahurea-rua/>
- Journal article on accountability measures in tribal colleges:  
<http://www.tribalcollegejournal.org/archives/5899>
- Cultural Pathways for Culturally Healthy and Responsive Learning Environments - Nā Honua Maui Ola: <http://www.olelo.hawaii.edu/olelo/nhmo.php>
- A Native Hawaiian Philosophy Educational Statement - Kumu Honua Maui Ola  
<http://www.olelo.hawaii.edu/olelo/khmo.php>
- Weinstein, G. L. I. (2014). From Alaska: A 21st Century Story of Indigenous Self-Determination in Urban American Public Education. *Diaspora, Indigenous, and Minority Education*, 8(4), 223-236. Retrieved from  
<http://www.tandfonline.com/doi/abs/10.1080/15595692.2014.952405>



## Appendix A: Process for Conducting a Search for Informational Resources

### Keywords and Search Terms Used in the Search

- "outcome" or "assessment" AND "indigenous" NOT "Dissertations & Theses"
- "outcome" or "assessment" AND "native" NOT "Dissertations & Theses"
- "outcome" or "assessment" AND "Indian" NOT "Dissertations & Theses"
- "test" or "standard" AND "indigenous" NOT "Dissertations & Theses"
- "test" or "standard" AND "native" NOT "Dissertations & Theses"
- "test" or "standard" AND "Indian" NOT "Dissertations & Theses"

### Search of Databases and Websites

Google/Google Scholar, ERIC, ProQuest Education Journals, QuestionPoint

### Criteria for Inclusion

The web search sought research studies that were published in peer-reviewed research journals within the last 15 years. Some articles that fell outside of the prioritized date range were included due to their particular relevance to the search. REL Pacific searched for documents that are freely available online, but not all sources included are publically available. Resources included also had to be in English. Resources included in this document were last accessed in September 2015. URLs, descriptions, and content included in this document were current at that time.