

## Chapter 6

# Culturally Responsive Instruction as Computer-Based Reading Engagement and Literacy Among Native American Students

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### ABSTRACT

*The chapter presents a review of the literature on Native American education and the use of culturally responsive instruction to guide the implementation of a computer-based reading program to increase engagement and reading levels for Native American secondary students for a quantitative single-case study on the effects of using Achieve3000 while using a culturally responsive model for selecting reading samples. Study findings noted though student reading levels increased and reading engagement improved in some key areas, no significant difference was found between groups. The implications of these findings are that use of a culturally responsive pedagogy to select self-relevant materials for a computer-based reading program may help Native American students to increase their reading levels and reading engagement scores, but not at a significant rate. Future research should consider whether these pedagogies and other strategies may improve Native American reading literacy.*

### INTRODUCTION

In 1971, American students in grades 4, 8, and 12 began taking the National Assessment of Educational Progress (NAEP) test to measure their growth in reading and math (National Center for Education Statistics [NCES], 2014). Longitudinal studies revealed NAEP reading scores for high school seniors have remained stagnant since NAEP testing began in the 1970s (NCES, 2014). In response to these and other concerns, federal and state governments have passed legislation to reform educational practices

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(Ametepee et al., 2014; Harris, 2012; Kessinger, 2012). These reforms included the No Child Left Behind Act (NCLB), Race to the Top (RTT), and most recently the adoption of the Common Core State Standards (CCSS) (Ametepee et al., 2014; Harris, 2012; Kessinger, 2012). Despite these many attempts to improve reading and math scores, NAEP results suggested these reforms had no significant impact on improving reading scores (NCES, 2014).

The National Indian Education Study (NIES) used NAEP data to study Alaska Native and American Indian students (hereafter referred to as Native Americans) and the study found Native American students scored lower in reading than other culture groups (NCES, 2012). Native American students in Arizona specifically have graduated high school at a lower rate than other culture groups (Stillwell & Sable, 2013). These findings suggested current educational practices are failing to bridge the gap between Native American students and other culture groups in Arizona. To bridge the performance gap in reading scores between Native American students and other culture groups, it was necessary to identify best practices for improving Native American student reading scores.

In 2014, Arizona introduced Arizona's Measurement of Educational Readiness to Inform Teaching (AzMERIT), a new standardized test for English Language Arts and Mathematics (ADE, 2015c). The purpose of AzMERIT was to create a computer-based test that aligned to the Arizona College and Career Ready Standards (Arizona's branding of the Common Core State Standards) (ADE, 2014). In the first year of testing, 65% of students failed AzMERIT for English Language Arts (ADE, 2015d). Of Native American 9th grade students, 92% of students failed the English Language Arts portion of AzMERIT (ADE, 2015d). These findings further supported the need to find appropriate solutions for improving Native American students' reading scores in Arizona.

Researchers have suggested culturally-responsive instruction (CRI) can be an effective model for teaching diverse racial and cultural groups (Adkins, 2012; Cramer et al., 2014). For example, Lopez et al. (2013) called specifically for qualitative research on culturally-responsive instruction for Native Americans. In addition, Adkins (2012) defined culturally responsive English instruction as the use of students' cultural backgrounds as a foundation to build student literacy. Further, Cramer et al. (2014) proposed even deeper implementation with their Integrated Learning Model (ILM). ILM combines elements from previous models to promote equality and cultural awareness with the intention of correcting systemic bias against minority students. The use of CRI and ILM may include the use of self-relevant texts that depict characteristics of students' backgrounds and the intentional connection of textual elements to students' lives (Adkins, 2012; Covarrubias & Fryberg, 2015). In particular, CRI can be used as a model for reading instruction (Adkins, 2012). One aspect of CRI includes the use of self-relevant subject matter for students. Covarrubias and Fryberg (2015) have called for the development of self-relevant models for Native American students. Because the NIES only evaluated quantitative data from the NAEP test, Lopez, Heilig, and Schram (2013) and Richardson and McLeod (2011) called for large-scale qualitative studies on Native American students. Richardson and McLeod (2011) have called for culturally-responsive e-learning strategies for Native American students.

Computer-based devices can be used to support reading instruction to improve student engagement and motivation (Laverick, 2014). Such programs have been used to provide differentiated reading solutions for students with varying reading levels (Turgut, 2012). One such example is Achieve3000. As a differentiated e-reading solution, Achieve3000 is an e-learning tool designed to adapt informational texts to students' identified reading levels (Erguvan, 2015). Achieve3000 tracks the progression of student reading levels in Lexiles, a measure of text complexity and student comprehension of complex texts (Achieve3000, 2016d; MetaMetrics, 2016). In addition to targeting skills and concepts necessary

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