

**Preliminary Study for Experimental Research on Culturally
Based Education for American Indian/Alaska Native Students**

RESEARCH SYMPOSIUM

**Institute of Education Sciences
U.S. Department of Education
Washington, D.C.**

May 10, 2005

Symposium Proceedings

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**Northwest Regional Educational Laboratory
101 SW Main Street, Suite 500
Portland, Oregon 97204
(503) 275-9500**

**Kim O. Yap, Ph.D.
Project Director**

A Preliminary Study for Experimental Research on Culturally Based Education for American Indian/Alaska Native Students

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Under a task order contract with the Institute of Education Sciences, a study team at the Northwest Regional Educational Laboratory (NWREL) conducted a critical review of the literature on culturally based education interventions, assessed the feasibility of conducting experimental research with such interventions, and developed a study design for conducting experimental research. The research symposium was convened to share and discuss results of the literature review, the feasibility study, and the experimental study report with prominent researchers, experts on Indian education, and selected staff from the U.S. Department of Education. Participants were identified and invited jointly by the NWREL study team and IES staff to attend the symposium. The symposium agenda and a listing of participants are provided in Appendices A and B, respectively. The sections to follow provide a description of key symposium activities and a summary of participant comments.

Morning Session

Following a round of introductions, Phoebe Cottingham, Commissioner for the National Center for Evaluation and Regional Assistance, provided an overview of the IES mission to achieve increased coherence and higher quality in educational research. She indicated that the symposium was to bring in some fresh eyes to review the work conducted by the NWREL team on the feasibility and design of experimental research on culturally based education (CBE). The participants brought together both evaluation expertise and content experts from universities and the Office of Indian Education. With respect to methodology, there may be more than just randomized controlled trials (RCTs) to consider. We want to look at all options for conducting the evaluation, including mixed methods. With limited resources we need to address research questions of interest to educators and community members, not just researchers.

Victoria Vasques, Director of the Office of Indian Education, also welcomed the group. She said that our job is to continue implementing NCLB through Indian Education, with the goal of improving the academic performance of all Indian populations (Native American, Alaska Native, and Native Hawaiian) and closing the achievement gap. This work is based on an Executive Order for Indian Education signed by President Clinton and renewed by President George W. Bush in which language was added about

implementing NCLB irrespective of culture, language, and traditions. We need to look at CBE as a way to close the achievement gap. The research and evaluation effort is a major component of the Executive Order.

In his introductory remarks, Ray Valdivieso, IES Project Officer, indicated that both executive orders, as well as the advisory panels to both Presidents Clinton and Bush, stressed the importance of CBE. IES is working in a partnership with the Office of Indian Education to strengthen the research on Indian education. Work conducted by the NWREL team under this task order is a part of the larger research agenda. We want to use the most rigorous methods to answer the question of causal influence of CBE on student achievement. He reviewed key components of the task order, including literature review, review and survey of CBE programs, the feasibility study, and the proposed experimental design.

Kim Yap, project director from NWREL, reviewed the symposium agenda and the symposium commenced with a review and discussion of the literature review.

Literature Review

William Demmert, a professor at Western Washington University and a member of the study team, provided a presentation on the literature review. The review began with more than 10,000 documents and ended with 120 research documents selected for a closer review. This yielded a small number of experimental or quasi-experimental studies: only four true experimental studies were found, along with two quasi-experimental studies. Additionally, eight non-experimental studies that support some of the findings of the other studies were identified. The synthesis identified three working theories (cultural compatibility theory, cognitive theory, and cultural history activity theory or CHAT) to explain how CBE can have a positive impact on student learning and other outcomes. The literature also pointed to six critical elements of CBE that are discussed in the review. There were assertions about the centrality of Native culture and language in shaping life and academic experiences of Native students, but there was little experimental evidence to directly support these assertions.

Review of CBE Programs

David Beaulieu, a professor at Arizona State University and a member of the study team, discussed his extensive review of existing CBE programs. He made the distinction between CBE as a whole-school approach and CBE interventions involving the teaching of Native language and culture. The CBE programs included those from the Indian Education Act, Administration for Native Americans (ANA) Native language programs, and other grants funded by the U.S. Department of Education. Five types of CBE were identified from this review: culturally-based instruction, Native language instruction, Native studies, Native cultural enrichment, and culturally relevant materials.

Survey of CBE Programs

Kim Yap presented the results of a national survey of 207 programs in 24 states. A total of 105 CBE programs completed a questionnaire (51 percent). About 18 percent felt that randomized assignment of students to treatment and control conditions was possible, while about 37 percent thought randomization was feasible under condition of a waiting list. The results were based on responses from school and program administrators. Additionally, 35 percent thought comparison of classrooms was feasible. Another 42 percent thought comparison of schools was feasible. Thus, randomization of schools was perceived to be more feasible than randomization of students. This is consistent with the fact that a majority of CBE programs are schoolwide programs.

Survey respondents commented on the importance of involving the Native community, not just in endorsing randomized experiments but in having a say in how they may be conducted in a way that benefits the students and the community. There is a perception that CBE is inherently a good thing, so it may be difficult to deny CBE to one group as a condition of an experiment. The study team visited potential study sites to explain what is meant by random assignment. When RCT was explained, there were some reservations and a sense that it will be challenging to do this in many communities.

Some of the potential obstacles to conducting experimental research are as follows:

- Perception that CBE in and of itself is beneficial. So why do we need to do an experiment?
- Construct validity—the extent to which interventions have incorporated CBE elements is largely unknown and probably needs to be measured.
- Difficulty in conducting experimental research with existing programs. They are schoolwide, so selection of students within schools is not feasible; the school as the unit of analysis poses difficulties (such as sample size).

Proposed Study Designs

Kim Yap discussed four design options:

- Randomized controlled trials (RCTs) appear feasible for two interventions (Sacred Places and the Northwest Native American Reading Curriculum).
- Matched comparison group design—a quasi-experimental design (QED)—appears feasible for another six CBE interventions.
- Both RCTs and QED should include longitudinal cohort analysis over three years.
- A meta-analysis may be conducted to assess overall effect size.

The Northwest reading curriculum was developed by the Washington Office of Superintendent of Public Instruction and Evergreen College. This program and Sacred Places, developed by the National Indian School Board Association, can be implemented in a large number of schools (Sacred Places) or classrooms (Northwest reading curriculum) in multiple states.

Participant Comments

Following the three formal presentations, participants provided the following comments:

CBE intervention as we define it (the six-component model) is not a simple thing to measure in an experimental or any kind of study. The definition requires some measures of teacher-student and student-student interactions, which are very labor intensive. You need to measure the kinds of discourse that go on in classrooms and the home because this is an important part of CBE. There is an issue of depth versus breadth. You don't just want to capture generic instruction, but you would want to do some time-intensive classroom observations around the elements of CBE.

The Barbara Foorman study on reading instruction and the instruments she has developed can perhaps be adapted. It is no simple task to measure CBE. We can develop a rubric of the six essential features and create an ordinal scale. The six dimensions are not independent, so the rubric can probably be reduced to four elements. There is a published rubric on pedagogy and teacher-student interaction with good psychometric qualities.

The six principles are not decomposable. For this to work, you need a comprehensive approach. But some of these dimensions are known and perhaps the research should focus on those that are less well understood.

Expert Critique

Lee Sechrest of the University of Arizona provided a critique of the proposed experimental research.

He suggested that we need to be clear about the questions and audience we really need to focus on for this research. Does the "equipoise" justify a randomized controlled trial (RCT)? (Equipoise is a term used in medical research to reflect the degree of uncertainty about a treatment; an RCT is only justified if there is sufficient uncertainty by key stakeholders.)

Is an RCT what we need? There is confusion around the real research question. The literature review seems to confirm a widespread belief that CBE works. From the community's point of view, the question is answered. They are not in a state of equipoise. Or, is the correct question about what form of CBE works? But there are other audiences, including the practitioners and other researchers. In any case, it is important to ask who the audience is. Who must be persuaded?

"Preference trials" from the medical field may be one approach to think about. Patients are given good information about two treatment options and are then asked to choose one. Those who cannot make up their mind (usually about half) are assigned randomly to one of the treatments. Can we apply this in communities with CBE interventions?

Another thing to consider: What if the effect size were zero on achievement? Is CBE still worthwhile because it has other benefits (self-esteem, community goals)? Should CBE be shown to be *as* effective as other approaches (rather than *more* effective) given that it has other benefits?

We need to consider the strength of the treatment (CBE as an independent variable). We need to parse the causes through careful observations in the classroom so we really understand the nature and strength of the intervention. We also need broad measures of the outcomes.

RCT as an option has serious limitations. In the medical field, it is difficult to carry out over a long period of time. Attrition is always a threat: the study you end up with in the end is not always the good, randomized experiment you started with. “Poor research is very expensive.”

RCT is not the only answer. Good theory is important, it can compensate for a lot of methodological weaknesses. The literature review does not incorporate a lot of the more basic research on the basic science of cognitive development, language development, feelings of worth in the community, motivation, and so on. We can learn a lot from other kinds of research (e.g., “shoe leather” designs, or just examining what is going on) and from theory and basic research.

Participant Comments

Sacred Places reads a lot like the effective schools research. How is CBE different from generic good practice? In an effective school, it is really difficult to understand all that is going on and what works and why. It is difficult to export that somewhere else. There is evidence on the effects of CBE on things like discourse, but not much on outcomes. There may be changes in interaction patterns between students and teachers, but what is the effect on student outcomes? The research needs to look at both questions.

The research might address the contribution of using native language. What is different about CBE? What is different about the Washington reading curriculum from other Native curricular approaches? What is the value added to this approach? Further, you need to document the overall context of these CBE approaches to figure out what is going on.

While some participants argued for a research design that would “tease out” or parse out the unique contribution of CBE over other “good practice” such as effective schools variables, others maintained that we cannot expect CBE to have achievement effects in the absence of a larger program of good academic practice. We need a fair test of CBE, that is, a study of its efficacy under ideal conditions (e.g., good academic program, stable students and school staff). This is not the same as evaluating “effectiveness” or how CBE programs fare as they occur under many conditions in the field.

Perhaps we should not view CBE as a model to be evaluated (like a comprehensive school reform model), but as a set of principles that are adapted to local conditions. A rubric that represents these principles makes sense, but even so the principles will be highly localized to a specific community. However, the use of native language is a key feature; the aspects of language need to be pulled out and looked at carefully in the research. A large part of the research should focus on the language component.

Afternoon Session

Expert Critique

Gary Ritter of the University of Arkansas talked about the goals of experimental research as developing the most credible evidence of effectiveness for programs that can be replicated. It should focus on outcomes that are important and universal. A key question is whether some of these CBE approaches are replicable. If not, it is not worth conducting an experimental evaluation.

Some previous experiments and quasi-experiments on CBE used different input and outcome measures than what we are interested in. One intervention (KEEP) had a large effect size (2.0). If we are confident that it is due to the program and not teacher effects, this is one worth looking at more closely. Overall, the literature review gives us hints but no strong evidence.

We don't really know if CBE works, except through observation and personal belief. Good things are happening with CBE, but are the things that we want to see happen (large achievement gains) happening? Is CBE the cause? We don't know without experimental research. CBE may have many benefits, but we want to know if it produces a strong academic benefit.

Are we at equipoise? Yes, and it is not just the scientific researchers who are uncertain. The U.S. Department of Education (USED) is interested in the answer and the communities are interested in knowing if CBE improves academic achievement, other benefits aside.

The feasibility study may have some selection bias. Most (85 percent) of the CBE programs are implemented in schools with a majority of Native American students. Are there many schools out there without CBE? These provide opportunities to implement CBE in a controlled experiment. We asked practitioners about the feasibility of experimental and matched comparison group studies, but they may not have understood the implications. There was some backing off during the site visits once they understood what is involved.

We need to find programs with evidence of minimizing the achievement gap. Studies should include common outcome variables, possibility for replication, and allow for meta-analysis. We should focus on random assignment. We can do random assignment

when there is choice or a waiting list. If the intervention is schoolwide, we would want to sample schools as the unit of analysis. The community involvement piece, because it is so localized, may not be replicable.

The study should focus on randomized experiments with the two programs (Washington program and Sacred Places). The six interventions for quasi-experimental research may not be the best place to put emphasis. A school-level analysis would require a large number of schools.

Another strategy is to work with schools wanting to develop CBE and provide technical assistance to them around the six principles. We can put people on a waiting list, select randomly, and promise the others a delayed implementation. We can also include slightly different implementations of CBE in different sites and look at the effect of the variations. Offering a technical assistance package would increase the attractiveness. This helps develop the local support you will need to do experimental research.

There are ways of addressing the challenges. For the challenge, “we know CBE is good,” the answer is that it can be better if designed to address the achievement gap. For the challenge, “why should we experiment?” CBE may go by the wayside if it is not proven to close the achievement gap because of NCLB. To the issue, “why should my school do it?” we can offer technical assistance with the research. On the concern that “we can’t measure our programs with test scores,” we can point out that achievement gaps are a policy priority and they are measured by test scores—test scores matter.

Participant Comments

One participant shared her perspective from a grassroots, teacher training perspective and as the director of a language immersion program. She indicated that many visitors come to her program to learn about the components so they can take them back to develop their own CBE program. From a practitioner’s perspective we would like to see more substantial CBE study, more understanding of the components and how they work. CBE is very holistic. It is based on a legacy model of the school and community. We study and celebrate strengths that have allowed us to be resilient. Being successful in meeting NCLB requirements is the end the community has in mind, but there are also other outcomes.

The participant offered four “Rs” on how we should conduct a study of CBE:

- Relationships—outsiders offering technical assistance need to have a relationship with the community.
- Respect for each other’s expertise (researchers, practitioners, community members).
- Reciprocity—who does the study serve? This must be negotiated among stakeholders.
- Rigor of the research.

We need to understand the components of CBE and the rubrics would be very helpful, something that other Native American communities can use. The research needs to give us tools and knowledge (like the rubrics) that other communities can use.

Participants commented on the effects of CBE, including school success and postsecondary success. We know some schools are not successful with Indian populations; some are failing. We know of a small number of schools and districts that do well. To bring them into an experimental design, you need to change the culture of the community, stabilize the students and teachers (high mobility in many schools). There are many factors that contribute to the success of exemplary programs.

There is a need to conduct research of exemplary sites and compare them with matched schools. Do the exemplary schools do better on outcomes? We can study the schools qualitatively to find out what is going on, then determine which principles are generalizable. For instance, what kinds of teacher-student-community interactions distinguish the exemplary schools?

In the scope of work the study team was asked to determine what we can do with RCTs. We talked about a purpose-built intervention, but it is more than offering a little bit of technical assistance to help schools implement CBE as part of an experiment. It would require very deep professional development. It would probably take at least two years to get teachers to understand and implement CBE with some fidelity.

We need good systematic studies of CBE approaches in terms of language development, English acquisition, and reading achievement.

We need to learn more from the exemplary sites before launching into experimental studies. We need to look at the exemplary sites and determine if they are effective and how they are effective. We need more teasing out of the achievement data to validate the six principles. Are they present in the exemplary sites? Are they implemented? This may require two years before you launch into RCTs. This would be the first phase. In a second phase, you would have schools without CBE, schools that have “traditional” CBE (not the cream-of-the-crop sites), and a third sample of schools that have an enhanced CBE through intervention and based on what we know from the most exemplary sites. And then, finally, a third phase is RCTs if the earlier results are promising, which might not come until year 5.

The model programs we identified are in one tribal area. How does this replicate to schools with multiple tribes? There is a problem for replication. A third of our students are in rural areas (where these programs tend to reside), but what about the one-third in urban and one-third in suburban areas that are in large school systems with multiple tribes?

Large-scale RCTs may not be the best strategy at this time. Gearing up to do these intervention studies would be very difficult and expensive. A comparison group design may be the best possibility. You should be encouraged that you know there are some

really good programs, because they are probably robust programs (large effect sizes) that can withstand methodological error.

“As if” randomization is another possibility—comparison groups with different levels of the intervention. We should probably try to do more with non-randomized studies.

Final Observations From Participants

There is very high interest in CBE in the Indian communities throughout the country. They want to know, how can I do this? The bottom line is that we want to know that it works. The audience here is the U.S. Department of Education. The interest came top-down through an executive order but also bottom-up from Indian tribes, practitioners, and community members. A lot of other schools want to know what works in these programs, what happens, and what can be transferred to other communities. The CBE communities are part of the audience also.

Another need is appropriate tools to measure student progress in Indian communities because what we have is inadequate.

At some level you could do some random assignment, but that should not be all you do. We need more intensive, indepth study of the successful programs (with comparisons) and then pull out the components you can test experimentally. The National Institutes of Health (NIH) would be interested in studies of linguistic development and English acquisition.

The research should start by focusing on exemplary programs and the inner workings.

There are both short-term and long-term outcomes of CBE. We need to understand the mediating and moderating variables to understand the effects on achievement. And there are lots of measurement issues. How do we measure native language development? How do we measure sense of community? We need a lot of work on the proximate outcome variables.

In developing the research model, we need to infuse community partnering strategies.

The perfect can be the enemy of the good. There are good replicable components of CBE; we need to study those that are effective and replicable

CBE is a critical question in Native American education. Communities want programs that are meaningful and effective. Effectiveness should be measured as student success in life. It is more than just reading scores. Indian people are listening. The research needs to be done very well and thoughtfully.

Appendix A

AGENDA

8:30 a.m.	Continental Breakfast	
9:00 a.m.	Welcome	Phoebe Cottingham Victoria Vasques
9:15 a.m.	Introductions	Kim Yap
9:30 a.m.	Background & Overview	Ray Valdivieso
9:45 a.m.	Literature Review	William Demmert
10:00 a.m.	Review of CBE Programs	David Beaulieu
10:15 a.m.	Survey of CBE Programs	Kim Yap
10:30 a.m.	BREAK	
10:45 a.m.	Research Design	Kim Yap
11:00 a.m.	Critique/Comments	Lee Sechrest
11:15 a.m.	Group Discussion on Critique/Comments	All Participants
12:15 p.m.	LUNCH	
1:30 p.m.	Critique/Comments	Gary Ritter
1:45 p.m.	Group Discussion on Critique/Comments	All Participants
2:45 p.m.	Summary/Wrap-Up	Kim Yap/Jim Kushman
3:00 p.m.	Adjourn	

Appendix B

Symposium Participants

Elizabeth Albro
Research Analyst, Institute of Education Sciences
U.S. Department of Education
(Elizabeth.albro@ed.gov)

Diane August
Senior Research Scientist
Center for Applied Linguistics
(daugust@msn.com)

David Beaulieu
Director, Center for Indian Education
Arizona State University
(david.beaulieu@asu.edu)

Donna Christian
Executive Director
Center for Applied Linguistics
(donna@cal.org)

Phoebe Cottingham
Commissioner, Institute of Education Sciences
U.S. Department of Education
(phoebe.cottinham@ed.gov)

William Demmert
Professor of Education
Western Washington University
(wm.demmert@wwu.edu)

Gil Garcia
Research Analyst, Institute of Education Sciences
U.S. Department of Education
(gil.garcia@ed.gov)

Laura Goe
Associate Research Scientist
Educational Testing Service
(lgoe@ets.org)

Jeffrey Johnson
Education Program Specialist, Office of Indian Education
U.S. Department of Education
(jeff.johnson@ed.gov)

Keiki Kawaiaea
Program Director
University of Hawaii
(keiki@leoki.uhh.hawaii.edu)

Jim Kushman
Senior Program Director
Northwest Regional Educational Laboratory
(kushmanj@nwrel.org)

Peggy McCardle
Acting Branch Chief, Child Development and Behavior
National Institutes of Health
(mccardlp@mail.nih.gov)

Ken Pugh
Research Scientist
Yale University
(pugh@haskins.yale.edu)

Gary Ritter
Associate Professor of Education
University of Arkansas
(garyr@uark.edu)

Lee Sechrest
Professor Emeritus
University of Arizona
(sechrest@email.arizona.edu)

Roland Tharp
Research Professor
University of California, Berkeley
(tharp@ucsc.edu)

Ray Valdivieso
Senior Research Associate, Institute of Education Sciences
U.S. Department of Education
(Rafael.valdivieso@ed.gov)

Victoria Vasques

Director, Office of Indian Education
U.S. Department of Education
(Victoria.vasques@ed.gov)

Kim Yap
Senior Program Director
Northwest Regional Educational Laboratory
(yapk@nwrel.org)