

Phase III Evaluation Report – September 2006

Diabetes-Based Science Education Program For Tribal Schools



Prepared by Doug Coulson, Ph.D.
Doug@pscounts.com
(800) 950-9103





Phase III DETS Evaluation Report September 2006

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A Process Evaluation of a K-12 Diabetes-Based
Science Education Program for Tribal Schools
(DRAFT REPORT)

INTRODUCTION

The Diabetes-Based Science Education in Tribal Schools (DETS) program is a cooperative effort among the NIH's National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) and Office of Science Education (OSE) with the Centers for Disease Control and Prevention (CDC), the Indian Health Service (IHS), and eight Tribal Colleges and Universities (TCUs). The partners in this collaboration are developing a K-12 diabetes-based education program for use in tribal schools throughout the United States. Program development includes collaboration among multiple TCUs; integration of tribal cultures and science education within the context of diabetes; involvement of family and community; incorporation of the daily experience of American Indian and Alaska Native children with diabetes in their communities; inclusion of Tribal Elders and other significant community groups in program development within the schools; and dissemination of the program to schools throughout Indian Country.

The stated revised goals of the project are to:

1. help Tribal children to understand about diabetes, its complications and ways to reduce the risk for its onset [original goal 1: reduce the morbidity and mortality related to diabetes and its complications by helping tribal children understand and take more responsibility for controlling and managing their own diabetes];
2. enhance K-12 Tribal students' understanding and appreciation of direct and indirect effects of scientific discoveries on diagnosis, treatment, and control of diabetes [no change from original goal 2]; and
3. encourage Tribal children to enter health science professions [no change from original goal 3].

These goals were consensually revised and established during phase II of the project.

The three key questions addressed in this phase III study are:

1. Is the DETS program being developed as planned? Specifically, DETS planning will be examined relative to: a) the three goals including the science strand and community health strand; b) alignment of curriculum content to enduring understandings; and c) application of the 5E pedagogical model.



2. Are DETS program critical processes being implemented? Critical processes used by the DETS program include use of the 5E model and *understanding by design* curriculum development strategies. Furthermore, implementation of the curriculum in the classroom will be examined relative to fidelity to the 5E model, enduring understandings, and inquiry-based science principles. [For DETS *understanding by design*, which is curriculum development process, involved three basic steps using worksheet documents. The first document starts by stating the DETS goal that is to be written about in a lesson. This is then followed by a place to write out *understandings* ("students will understand that") and *essential questions*. Stage 2 of this worksheet requires that the developer write out *assessment evidence* (e.g., performance tasks) for desired understandings. The third stage of this worksheet asks the developer to write out the *learning activities* for the lesson. See Appendix D for more detail.]
3. Has the DETS curriculum been developed into the expected output (i.e., a replacement modularized curriculum) that meets its three general goals? The central DETS program metaphor of *health is life in balance* generates a curriculum approach that incorporates both science concepts and community health concepts for each of the three goals. This outcome evaluation question focuses on the extent of alignment of the curriculum to the central metaphor within each of the three goals. Furthermore, the replacement modularization of the curriculum will be examined within modules relative to the central metaphor and three goals. That is, is there evidence that the three goals and central metaphor are present and have had an impact (e.g., on achievement; on attitude) within specific modules?

The purpose of this phase III evaluation report is to provide process analysis of the DETS Curriculum Project relative to these three key questions, where the first two questions are process evaluation questions and the third question is an outcome evaluation question. In this regard there are five data sources used to analyze the three key questions: 1) lesson specific DETS Pilot Test Evaluation forms; 2) web-based DETS Pilot and Beta Test form generalized across several lessons; 3) discussions at quarterly DETS face-to-face meetings; 4) External Advisory Committee (EAC) meetings (December 2005 and September 2006); 5) site visits to 6 classrooms across three TCUs.

Lesson specific DETS Pilot Test Evaluation forms were distributed to Principal Investigators (PIs) via email and at quarterly meetings. This form was developed by the external evaluator in collaboration with the DETS Evaluation Subcommittee, consisting of representatives from the Federal agencies and the TCUs. The form covered the *clarity* of lesson goals, objectives, vocabulary, material lists, and local, state and national standards. There were overall questions about student participation, content, ease-of-use and lesson difficulty. A copy of this form may be found in Appendix A.



The web-based generalized DETS Pilot Test Teacher Web Survey asks for overall ratings about difficulty of content, ease-of-use, level of engagement as well as written responses regarding strengths and weaknesses of lessons used. This survey focused on *all* the pilot lessons that a teacher tested rather than a particular lesson. A copy of this form may be found in Appendix A.

Phase III of this project spanned the end of lesson-specific pilot testing into beta testing of several lessons at a time. In this regard a web-based generalized DETS Beta Test Web Survey asks a series of questions. The background questions relate to extent of participation in the beta test, the questions about the DETS lessons probe lesson difficulty, ease-of-use, level of engagement, role of standards, level of implementation, cultural content (new for fall '06 beta test) as well as written responses about strengths and weaknesses of lessons used. Appendix A has a copy of this form.

During phase III external evaluator Dr. Coulson has attended five quarterly DETS Steering committee meetings in Walker, Minnesota (May 2005), Baraga, Michigan (September 2005), Bellingham, Washington (January 2006), and Spirit Lake, North Dakota (June 2006). A fifth special Steering committee meeting was held in April 2006 in Albuquerque, New Mexico. Dr. Coulson presented evaluation material at each meeting as well as actively engaged in curriculum development discussions during these meetings. The evaluation presentation PowerPoints used at these meetings may be found in Appendix B.

In December of 2005 Dr. Coulson attended the External Advisory Committee meeting in Denver to present on the status of the evaluation work with Carolee Dodge Francis. Presentations were given to the EAC from the four DETS subcommittees: 1) K-4; 2) 5-8; 3) 9-12; 4) Evaluation. The EAC evaluation PowerPoint may be found in Appendix C. In September 2006 Dr. Coulson facilitated the K-4 curriculum review with EAC members at the second Denver meeting.

For site visits, classrooms were visited in schools associated with Leech Lake Tribal College, Minnesota (i.e., North School, Cass Lake and Bug-O-Nay-Ge-Shig), Keweenaw Bay Ojibwa Community College, Michigan (i.e., Barkell Elementary and L'Anse Middle), and Southwestern Indian Polytechnic Institute, New Mexico (i.e., Santa Clara Day School). Some classes were teaching a DETS lessons, others had completed teaching a DETS lesson and finally some classes were preparing to teach a DETS lesson.



BACKGROUND

This is the third evaluation report on the DETS project. The phase I report (February 2004) examined the feasibility of the three DETS curriculum goals first in the broad sense of *practicality, and political viability*, secondly in terms of group consensus about goal performance and thirdly from a resource and cost perspective. The four key questions addressed in the phase I study were:

1. Are the stated goals of the DETS program achievable and measurable, and if not, what goals would be more practical?
2. For each goal, what would be a reasonable standard of performance by a given year?
3. What are the limitations in human and material resources, classroom curricular and instructional constraints, budget, and other system capabilities that should be considered when designing the K-12 DETS curriculum?
4. What is the most cost-effective format (e.g., website, brochure, video, kit, handout, tip sheet, meal planner) for a DETS K-12 curriculum supplement or other tangible product aimed at achieving project goals?

Analyses in that phase I report were based on the four program evaluation standards presented by the Joint Committee on Standards for Educational Evaluation (i.e., practicality, utility, propriety, accuracy). The focus was on the standards of utility and feasibility. In addition analysis of estimated costs could be compared to available dollars to add to the feasibility of the current DETS effort. That is, the question could be asked: "how feasible is the DETS curriculum development program when the allocated dollars (i.e., grant budgets) are compared to the cost estimates in this paper?"

The conclusions of the phase I report were: 1) goals two and three (understanding science; health education and careers) are more practical and feasible than goal one (reducing morbidity - which might be considered as part of the mission of DETS); 2) subsequent discussion and revisions of DETS goals resulted in three goals that are *practical* and meet sufficient *performance standards*; 3) the cost-utility ratio is more favorable for classroom-based instruction than web-based instruction; 4) cost estimation methodology cross-validated within a reasonable ranges (i.e., 5% and 1%); 5) the empirically derived cost-utility ratios for the science strand and the health education strand were nearly identical; 6) future steering committee meetings might provide opportunities for separate stakeholder estimates of probabilities and utilities in order to generate comparative cost-utility ratios; 7) future steering committee meetings might provide opportunities to review **actual** curriculum content versus **desired** curriculum content as well as review the relative balance of curriculum priorities related to *enduring understandings, important to know or do, and worth being familiar with*.



By addressing all four key questions in the phase I report a foundation for phase II pilot-beta-field testing evaluation work was established. Practical goals lead directly to measurable objectives and assignable tasks. In turn, objectives and tasks provide a clear basis for planning and timeline development. Once timelines are agreed upon, attitude (teachers and students) and achievement (students) instrumentation can be planned and written. In addition, the establishment of content specifications and the 5E template provide standards against which an evaluation team would be able to measure the curriculum development process. Furthermore with an agreed upon set of curriculum priorities (i.e., *enduring understandings, important to know or do, and worth being familiar with*) the groundwork for development of assessments has been completed. From these priorities it is possible to balance assessment choices among traditional multiple choice tests and quizzes, open-ended constructivistic essays, and class projects and presentations (i.e., authentic assessment).

The phase II report provided process analysis of DETS lessons relative to: three program goals; use of 5E template; development of schedules and timelines for pilot, beta and field testing; implementation of changes based on pilot test data; assessment strategy; and overall impact of the curriculum. The six key questions addressed in the phase II study were:

1. Are lesson development efforts adequately aligned with the three program goals?
2. Are lesson development efforts following the 5E template for each of the three curriculum development subcommittees (K-4, 5-8, 9-12)?
3. Has a systematic Field Test Plan with timeline been developed and agreed upon?
4. Have pilot tests been conducted for each lesson, and have the changes called for by the pilot tests been made to the lessons?
5. Has an integrated, authentic assessment strategy been planned and implemented to measure the effectiveness of lessons?
6. What has been the overall impact of the pilot test of the curriculum on student achievement and attitude toward diabetes within the context of science and health education?

In the earlier stages of lesson development writers tended to focus on content independent of the three DETS goals. Moreover, the direction of lesson development shifted after the December 2004 EAC review toward building a comprehensive K-12 scope-and-sequence document (i.e., "*DETS - Diabetes Education in Tribal Schools: Mission, Purpose, Goals, Concepts, and Objectives*"). As a consequence of this shift, the lesson content reviewed



in the phase II report was based on curriculum CDs distributed at the September 2004 and January 2005 quarterly meetings. For K-4, it was appropriate that there would be less coverage of goal two, which focuses on the diabetes of science. The low percentages for K-4 for goals one and three may be due simply to the lack of explicit reference to a particular goal. For example, there were lessons within K-4 on the prevention of disease through traditional diet. While many of these lessons may have referred implicitly to diabetes, the lack of explicit reference to diabetes resulted in a check mark that indicated not present. The 9-12 low percentage (i.e., 43%) for goal two was unexpected, especially since the 9-12 curriculum plans to have a strong emphasis on the science of diabetes. However, because the reviewed lesson documents were in their early stages of development (i.e., September 2004 or before), it is also likely that KBOCC (i.e., health strand) had developed more of its lessons than NWIC (i.e., science strand).

It appears that in the earlier stages (i.e., before September 2004) of lesson development attention to goals was less critical than developing grade-level appropriate diabetes science and health content. Consequently the curriculum "spread-out" across content areas too much. The EAC review recommended that coherence be increased by focusing on a narrower content field driven by *enduring understandings*. For the most part this has been happening since the three curriculum teams have refocused their 2005 writing efforts not on lessons per se but on the *DETS - Diabetes Education in Tribal Schools: Mission, Purpose, Goals, Concepts, and Objectives* document. During phase II DETS has following a process development strategy characterized by coherence, focus and rigor (three known characteristics of effective science programs). The coherence and focus derive from mapping *enduring understandings* as they are derived from the three DETS project goals. Process rigor derives from the external review process and the content rigor derives from the DETS Scientific Review Committee, which has been reviewing all the content accuracy of lessons before they are tested in the classroom.

From the data in the phase II report, the use of the 5E model appeared to be successful. This finding contrasted somewhat with the finding of the AIM (Analyzing Instructional Materials) which found that the application of the 5E model was inconsistent and insufficient. However, the AIM process was only applied to *three* lessons (i.e., one for K-4; one for 5-8 and one for 9-12) during the December 2004 EAC review. On the other hand, by scanning all the lessons available on CDs, it seemed that most developers made full use of the 5E model (see Table 2). The possible exception would be the 5-8 lessons. It must be noted, however, that the 5-8 lessons which were available for review tended to be "older" (e.g., late 2003 and early 2004) and thereby developed before the DETS Project put a strong emphasis on using the 5E model as a lesson template.

During phase II a systematic field test plan was discussed and reviewed by the Evaluation Subcommittee during its monthly DETS conference calls. In addition the field test plan as well as the beta test plan had been presented and accepted at the May 2005 Steering Committee quarterly meeting at Leech Lake.



In phase II some evidence of authentic assessment was found among evaluate activities. Clearly the curriculum writers are striving to create evaluate activities that are authentic (i.e., hands-on, active, participatory, cooperative, inquiry-based). However, lesson assessments (i.e., evaluate activities) still seemed nascent. Finally in some cases pilot testing preceded the availability of materials which caused some frustration among the teachers that were teaching the lesson.

From the available phase II pre-post data it is clear that DETS was having an impact. All but one of the pre-post gains were statistically significant. Furthermore, the gains were stronger when the lesson was improved and taught a second time (to a different class).

Overall the phase II evidence showed that the development of the DETS curriculum during the pilot phase of this project has resulted in an improving set of curriculum lessons and attending supporting materials. Table 1 summarizes the number of lessons that have been piloted tested through May 2005 (i.e., through the end of phase II).

Table 1
Number of Pilot Test Lessons Taught and Evaluated
Through the End of Phase II (May 2005)

	K-4	5-8	9-12
Fort Peck	11	1	
SIPI		53	
Haskell	25		
Keweenaw Bay	2	1	
Leech Lake		4	
Stone Child		9	

Table 1 reflects the number of pilot test lessons that were actually evaluated during phase II with either the *DETS Pilot Test Lesson Evaluation Form* or the *DETS Pilot Test Teacher Web Survey*. An unknown number of additional lessons were tested but not evaluated with one of these forms.

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EAC review recommended that coherence be increased by focusing on a narrower content field driven by *enduring understandings*. For the most part this has been happening since the three curriculum teams have refocused their 2005 writing efforts not on lessons per se but on the *DETS - Diabetes Education in Tribal Schools: Mission, Purpose, Goals, Concepts, and Objectives* document. The success of this refocus on the conceptual framework of DETS is the subject of the Phase III evaluation work during the beta test and field test phases of the evaluation process. While successful in making improvements in phase II, during phase III the DETS curriculum development process must show conceptual focus around its central metaphor (*Health is Life in Balance*), and the *enduring understandings* associated with the three DETS goals.

The phase III focus will tighten a sprawling set of content materials, making it easier for prospective teachers and schools to navigate and select lessons to replace parts of their existing curriculum. Furthermore, during phase III attention will be given to length of lesson (i.e., not too long), vocabulary level (i.e., not too difficult), cultural relevance (currently often very appropriate), and consistent pedagogical formatting (i.e., the 5E model). The findings of this phase III report are considered next.



FINDINGS

The evaluation was divided into 12 major evaluation activities. The first six tasks focused on the beta test, whereas the final six tasks focused on the field test of the curriculum materials. Table 2 summarizes these 12 tasks and their status.

Table 2
Status Summary of Major Evaluation Activity

Major Evaluation Activity	Status
1. Recommend beta test evaluation design strategy	<i>Completed:</i> Reviewed and finalized beta test strategy with evaluation subcommittee August 2005
2. Present evaluation design strategy to steering committee	<i>Completed:</i> Initial beta test strategy presented at KBOCC steering committee meeting in September 2005; revised based on December 2005 EAC review; final beta test strategy presented and approved at January 2006 NWIC steering committee meeting.
3. Develop instrumentation binder for beta test	<i>Completed:</i> Reviewed instrumentation criteria with steering committee at January 2006 NWIC meeting. Presented expanded instrumentation binder at special April 2006 steering committee meeting in Albuquerque.
4. December 2005 EAC meeting	<i>Attended:</i> Presented status of evaluation work to EAC; established revised timeline for beta and field testing.
5. Conduct beta test site visits in spring 2006	<i>Completed:</i> Classrooms were visited in schools associated with Leech Lake Tribal College, Minnesota (i.e., North School, Cass Lake and Bug-O-Nay-Ge-Shig), Keweenaw Bay Ojibwa Community College, Michigan (i.e., Barkell Elementary and L'Anse Middle), and Southwestern Indian Polytechnic Institute, New Mexico (i.e., Santa Clara Day School). Some classes were teaching a DETS lessons, others had completed teaching a DETS lesson and finally some classes were preparing to teach a DETS lesson.
6. Generate beta test reports in spring and fall 2006	<i>Completed:</i> Three TCU-based beta reports completed and distributed at the June 2006 CCCC steering committee meeting. Three TCU-based beta reports completed and will be distributed at the October 2006 Fort Peck steering committee meeting.
7. Develop field test evaluation design	<i>Completed:</i> Worked with Evaluation Subcommittee and PIs to develop field test evaluation design with all prototype instrumentation including fidelity of implementation measures.



8. Develop instrumentation binder for field test	<i>In progress:</i> Collecting student achievement tests written by curriculum subcommittees during beta testing which is taking place through the fall 2006. Test items to be analyzed statistically and developed into standardized instrumentation.
9. Schedule field test assessments and site visits	<i>Pending</i> July 2007 when school participation lists with contact information have been finalized.
10. Conduct field test site visits	<i>Pending</i> September 2007.
11. Provide interim report of field test findings	<i>Pending</i> December 2007
12. Produce report based on field test data	<i>Pending</i> March 2008.

Overall, the DETS program has been developed as planned. Critical processes have been attended to via quarterly steering committee meetings, monthly conference calls as well as the December 2005 and September 2006 external advisory committee meetings in Denver. The curriculum output has closely followed the central DETS program metaphor of *health is life in balance*. While this planning process has taken longer than anticipated, overall the three DETS curriculum subcommittees (i.e., K-4; 5-8; 9-12) have aligned lesson development with the three program goals, focused on aligning curriculum content to enduring understandings, and applied the 5E pedagogical model. The main curriculum development delay was associated with the field test. That is, the December 2005 EAC committee recommended postponing the field test until September 2007. At this point it was agreed that the three DETS curriculum subcommittees (i.e., K-4; 5-8; 9-12) would have their lesson materials in final pre-production form. This was necessary in order to implement a standardized and systematic field test. Preceding the 2007-2008 academic year field test would be the beta test of these materials.

The main recommendation from the EAC when it met in December 2005 was to move the field testing of the curriculum materials to September 2007. This recommendation was based on the fact that some of the curriculum materials were not in final pre-production mode and that accomplishing this (i.e., ready final pre-production materials) was not feasible by the currently scheduled date for field testing in the 2005-2006 academic year. In order to run a fair field test it is critical that all the materials are in a format that is as close to production form as possible.

Since some of the DETS lessons and units were complete the design of the beta testing was revised and presented at the January 2006 steering committee meeting at Northwest Indian College in Bellingham, Washington. The revised beta test strategy incorporated the notion of “rolling mini-beta tests”. The word “rolling” indicates different starting times, and the word “mini” indicates that each TCU would conduct a smaller scale test of a DETS unit that was ready for beta testing. This strategy permitted TCUs to begin implementing a beta unit or series of DETS lessons in the classroom when they became ready. Ideally, to rule out time related



variables, one would implement the beta units at the same time. However, the rolling mini-beta test approach accommodated the differential development of the DETS units across the three curriculum subcommittees (i.e., K-4; 5-8; 9-12). Furthermore this revised design strategy did not hold up beta testing for schools that had classes in place to implement the lessons.

In order to maintain a rolling, smaller scale beta test responsive to TCU readiness, instrumentation was developed at the local level. Specifically, writing teams were responsible for developing pre and post content oriented achievement tests while the evaluator provided instrumentation templates for attitude surveys. This approach obviated the need for the evaluator to write content tests without knowing the content ahead of time (i.e., materials not available), and thereby slowing down the rolling mini-beta tests. Furthermore it insured that the content of the achievement tests was closely aligned with the lessons being taught. In contrast the main feature of the attitude surveys was the scaling of the items, which could be standardized through the use of a template. Thus the DETS coordinators would be able to create attitude surveys simply by plugging in lesson names and activity names in the appropriate places. Finally in order to reduce test anxiety, the achievement tests are referred to as “knowledge surveys”. This would not only reduce test anxiety, it would help when asking students to take a “pre test” before being introduced to the material: *“It is not a test, but a survey”*. Beta test instrumentation developed in the spring of 2006 has been incorporated into a revised and expanded *September 2006 Instrumentation Binder*.

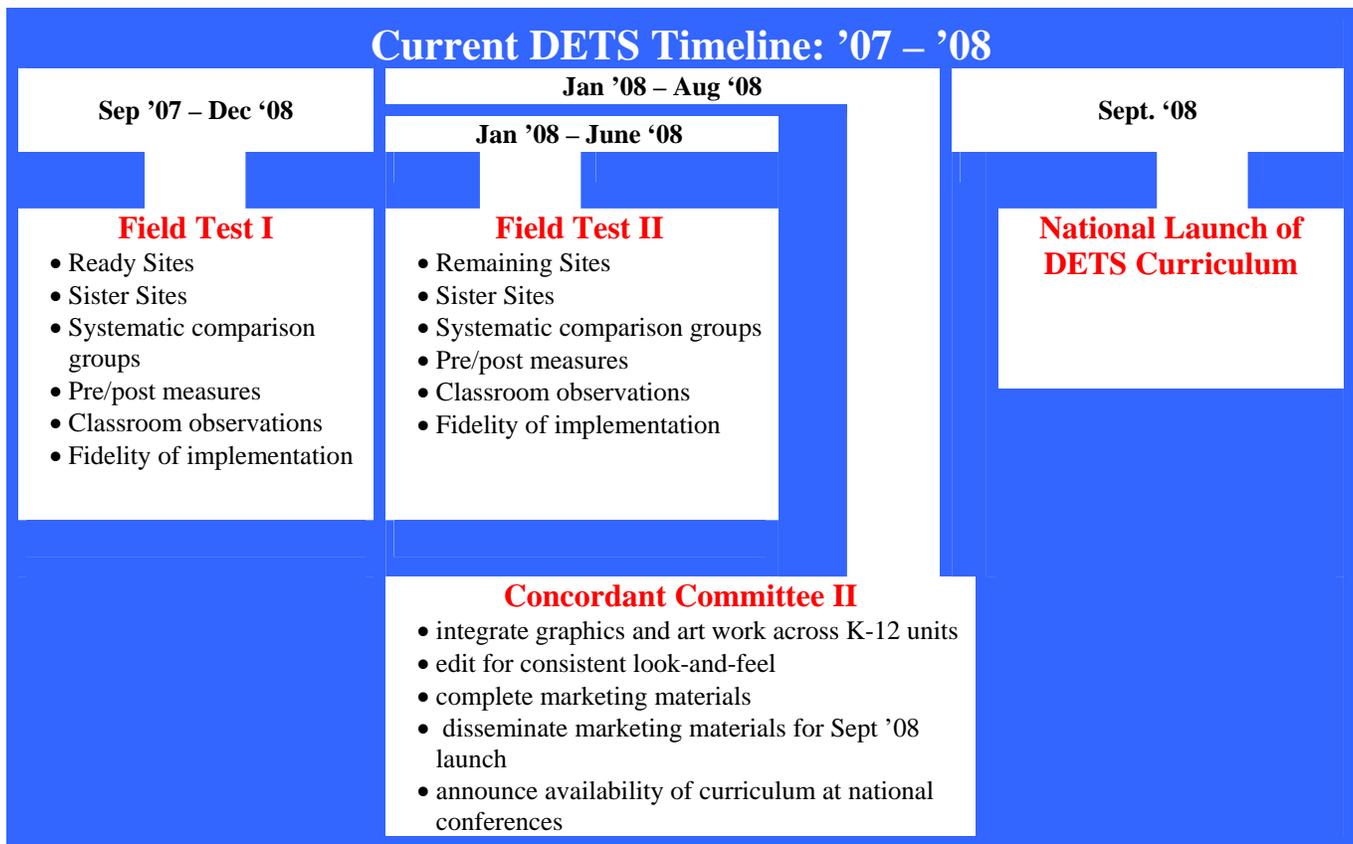
In order to reflect changes in curriculum development and subsequent beta testing and field testing, a new timeline was developed and presented at the January '06 steering committee meeting in Bellingham, WA. This timeline extended beta testing through the 2006 – 2007 academic year, with the field testing beginning in September 2007, and extending through June of 2008. Figure 1 below shows this revised timeline.



Figure 1: DETS Timeline
 (as presented at the June '06 Steering Committee meeting at Spirit Lake)

Current DETS TIMELINE: '06 – '07			
Jan '06 – June '06	July '06 – Aug '06	Sep '06 – Dec '06	Jan '07 – June '07
<p>Beta Testing</p> <ul style="list-style-type: none"> • pre/post achievement • pre/post attitude • implementation survey • classroom observations 	<p>Concordant Committee I</p> <ul style="list-style-type: none"> • align goals to key concepts • align key concepts to objectives • align objectives to unit titles • edit for consistent look-and-feel • fully integrate cultural and scientific components • Storyboard all marketing material 	<p>Beta Testing II</p> <ul style="list-style-type: none"> • pre/post achievement • pre/post attitude • implementation survey • classroom observations • Fidelity of implementation 	<p>Beta Testing III</p> <ul style="list-style-type: none"> • pre/post achievement • pre/post attitude • implementation survey • classroom observations • Sister Sites • Fidelity of implementation





Through January 2006 pilot test data was reported by teachers. For this phase III report there were three report dates for pilot data: May 19, 2005; September 21, 2005 and January 24, 2006. Pilot data focused on individual lessons. During these reporting dates there were eleven separate pilot reports associated with seven TCUs. Appendix E contains all the data from these reports.

During the first round of beta testing (i.e., January '06 through June '06) data was received from three TCUs. These three beta test reports were provided to the three principal investigators (PIs) at the June 2006 steering committee meeting in Spirit Lake, North Dakota. Three additional beta test reports will be distributed at the October 2006 steering committee meeting in Billings, Montana. Appendix E also contains this data.

To further implement the beta test design strategy, in August 2006 checklists were developed and distributed to each TCU. One beta test checklist was designed for PIs, while a second checklist was designed for teachers. The purpose of these checklists was to provide both



PIs and teachers with a succinct (i.e., one page) list of discrete tasks to be performed *before*, *during* and *after* beta testing. Before beta testing PIs are responsible for providing teachers via their DETS coordinators with: a) pre-knowledge surveys (produced by writers); and b) pre-attitude surveys based on the template available in the Instrumentation Binder or directly from the external evaluator. Also PIs were responsible for reminding teachers to set up a system for matching (i.e., linking) pre-surveys to post-surveys on a student-by-student basis and to review all lessons thoroughly in order to implement the DETS lessons as written. During the beta test PIs are expected to check that pre-surveys have been properly administered and remind teachers of the matching task. After the beta test PIs are expected to collect all pre and post lesson surveys (knowledge and attitude), mail copies to the external evaluator with an answer key and to remind teachers to complete the online teacher web survey designed by the external evaluator. For their part teachers before the beta test are expected to obtain the pre-knowledge surveys and pre-attitude surveys, set up a system for linking or matching pre and post surveys, and review all DETS lessons thoroughly. During the beta test teachers are expected to note how closely they were able to follow the DETS lessons as written, administer the pre-surveys before teaching the lessons, administer the post-surveys within one week of completing the lesson and finally physically match pre and post surveys on a student-by-student basis. After teaching the DETS lessons teachers are to return all surveys to the DETS coordinator as well as complete the online teacher web survey posted by the external evaluator. These checklists may be found in the September 2006 Revised and Expanded Instrumentation Binder included in Appendix F.

The *September 2006 Revised and Expanded Instrumentation Binder* is a comprehensive document that contains all the forms used for pilot testing and beta testing. A future edition will also include all the assessment instruments to be used for the field testing that will start in September 2007. In addition to assessment instrumentation this Instrumentation Binder contains the in-class observation protocol, example letter of commitment for teachers, photo permission slips, and the beta test check lists for teachers and principal investigators discussed above. This Instrumentation Binder is a dynamic document in that material is added to it as the DETS evaluation progresses. It was distributed at the January 2006 steering committee meeting at Northwest Indian College, Washington, and distributed again at the special steering committee meeting in Albuquerque, New Mexico, in April 2006. Appendix F contains the September 2006 revised and expanded version of the Instrumentation Binder which will be distributed to the steering committee in Billings, Montana, in October 2006. Eventually this binder will contain all the standardized attitude and achievement assessment instruments to be used for the September 2007 field testing. Electronic versions of all forms are available to PIs in PDF or Word format.

During the phase III report period site visits to six separate schools were conducted. Classrooms were visited in schools associated with Leech Lake Tribal College, Minnesota (i.e., North School, Cass Lake and Bug-O-Nay-Ge-Shig), Keweenaw Bay Ojibwa Community College, Michigan (i.e., Barkell Elementary and L'Anse Middle), and Southwestern Indian Polytechnic Institute, New Mexico (i.e., Santa Clara Day School). Some classes were teaching a DETS lesson (i.e., pilot testing), others had completed teaching a DETS lesson and finally some



classes were preparing to teach a DETS lesson. Only Bug-O-Nay-Ge-Shig, Minnesota and the Santa Clara Day School in New Mexico were conducting beta tests (i.e., multiple DETS lessons). These visits occurred in the spring of 2006. The other site visits were completed during 2005 while pilot testing was going on. Finally in the spring of 2006, three Montana schools (i.e., Rocky Boy Junior High, Box Elder Junior High and Crossroads Alternative High School) were conducting beta tests although time did not permit them to be part of the site visit schedule. Table 3 below summarizes the extended pilot testing that led up to the beta testing and associated site visits.

Table 3
Summary of Extended Pilot Tests

School	Alignment with National Science Standards	Use & Participation	Engagement
Fort Peck Community College (5/05)	67% yes on alignment with National Science Standards	100% easy to use	67% engaging 33% very engaging
Southwestern Indian Polytechnic Institute (5/05)	93% yes on alignment with National Science Standards	60% high student participation	72% lessons were just right (neither too difficult nor too easy)
Haskell Indian Nations University (5/05)	100% yes on alignment to National Science Standards	100% easy to use	6% unengaging 81% engaging 13% very engaging
Woodlands Wisdom Leech Lake (5/05)	100% yes on alignment to National Science Standards	75% high student participation	75% teacher friendly
Fort Peck Community College (9/05)	100% yes on alignment to National Science Standards	67% easy to use 33% very easy to use	67% engaging 33% very engaging
Keweenaw Bay Ojibwa Community College (1/06)	100% yes on alignment to National Science Standards	100% high student participation	100% teacher friendly

The extended pilot testing ended in December 2005. The rolling mini beta tests followed the extended pilot testing and began in January 2006. The concept of “rolling mini” betas accommodated the circumstances that some parts of the curriculum were ready to beta test while other parts were not yet ready for the classroom. Data from rolling mini beta testing consisted of teacher web surveys and site visits. During the Santa Clara Day School site visit in April 2006 the 6th grade students were being introduced to the DETS lessons via the pre-knowledge survey. The substitute teacher took the entire class period (50 minutes) to administer and review this pre-



knowledge survey. Unfortunately when the pre-knowledge survey was reviewed it was observed that the students were adjusting their answers to the correct answers. While this was not inappropriate in any way (it was simply a discussion of the “test”), it did “taint” the pre-test and render it unusable in any future pre-post comparisons. This problem of “tainting” was discussed during the June 2006 evaluation presentation at Spirit Lake, North Dakota. Furthermore, when the regular classroom teacher returned there was not a follow-up “post-test”. Nonetheless, the regular teacher said that she was successful in implementing the DETS beta test lessons, and that the curriculum was easy to use. There were no components (e.g., goal statements, standards, materials list, vocabulary, cultural content, science content, assessments) of the DETS lessons that were particularly ineffective or difficult to use. The teacher considered the materials appropriate for their students as well as very engaging for their students. The second beta test teacher at Santa Clara Day School in New Mexico also felt that the DETS material was age appropriate and that the students were very engaged by the materials. The content seemed just right (neither too difficult nor too easy) and the students liked the materials. Like her counterpart, Ms. Brewer said that the DETS materials were very aligned to the National Science Standards. She described her implementation as successful and that the materials were very easy to use. Finally Ms Brewer said that the DETS curriculum was engaging when compared to other science curricula that she had used.

The May 2006 Bug-O-Nay-Ge-Shig School site visit in Minnesota was to John Parmeter’s seventh grade class. Mr. Parmeter worked through the engage exercise in a natural and effortless manner. While the students were definitely engaged by the teacher, during the brief student interviews they exhibited a neutral attitude toward the topic of diabetes. On the other hand, when asked what they remembered about earlier lessons, all the students were responsive and mentioned things relating to diet and exercise. For this particular class no pre and post knowledge and attitude surveys were given. Mr. Parmeter felt that the materials were very appropriate for his students and that the students were very engaged by the lessons. Furthermore Mr. Parmeter said that the content was just right for his students, adding that it could have been a bit more hands-on. The lessons were described by this teacher as engaging for his students, easy to use for the teacher and very successful in its implementation. From an observer’s perspective the implementation was enthusiastic although the sequence of the lessons was changed from the original curriculum. In future beta and field testing the importance of following lesson sequences will be emphasized. The lessons were viewed as much aligned with the National Science Standards. The second Minnesota teacher, Mr. Peter Bahr, described his students as somewhat engaged by the materials, although they did not seem to like the work. Nevertheless he saw the content as just right for his students (neither too difficult nor too easy). Mr. Bahr was not sure how the materials aligned with the National Science Standards. Finally, although he felt that the materials were easy to use, he felt unsuccessful in his implementation. Mr. Bahr embarked on the beta test quickly, without any professional development opportunities. More familiarization with the DETS curriculum would have helped reduce some of his implementation difficulties.



While there were no beta test site visits to Montana during the spring 2006 school semester, three schools (Rocky Boy Junior High; Box Elder; Crossroads Alternative HS) beta tested the Grades 5-8 DETS material. Ms. Teresa Olson at Rocky Boy Junior High described the DETS materials as age appropriate for her students. She said that her students seemed to like the lessons and were somewhat engaged. The content was seen as just right (neither too difficult, nor too easy). Ms. Teresa Olson felt that the DETS materials were very aligned with the National Science Standards. She described her implementation as successful. The materials were easy to use and she considered this curriculum as engaging compared to other science curricula that she had used. Ms. Temina Olson at Box Elder Junior High also described the DETS materials as age appropriate for her students. She said that her students seemed to like the lessons and were somewhat engaged. The content was seen as just right (neither too difficult, nor too easy). Ms. Temina Olson felt that the DETS materials were very aligned with the National Science Standards. She described her implementation as successful. Ms. Temina Olson considered this curriculum as engaging compared to other science curricula that she had used but, unlike her counterpart at Rocky Boy, she said that the materials were difficult to use. Mr. Richard Jones at Crossroads Alternative High School said that the DETS materials were age appropriate for his students. However, unlike his counterparts at Rocky Boy and Box Elder, Mr. Jones said that the content was too difficult for his students, adding that his students seemed to dislike the DETS lessons. He attributed this to a vocabulary and reading level that was somewhat higher than his students were ready for. Nonetheless Mr. Jones felt that the DETS materials were very aligned with the National Science Standards. He described his implementation as successful. Although Mr. Jones felt that the materials were less engaging than other science curricula he had used, the materials were easy to use.

At Rocky Boy 93% of the students said that the beta test lessons were “just right”, with the remaining 7% saying that they were too easy. Student perception of the effectiveness of the five beta test lessons was high. On average 75% of the students said that they learned some things or a lot of things from these lessons. Table 4 summarizes student perceived learning.



Table 4
Student Perceived Learning: Rocky Boy Junior High

Lesson Title	I learned nothing 1	I learned a little bit 2	I learned some things 3	I learned a lot 4
LESSON ONE: History in the Making	3.5%	34.5%	37.9%	24.1%
LESSON TWO: Focus on Diabetes	3.5%	17.2%	44.8%	34.5%
LESSON THREE: Health is Life in Balance	0%	23.3%	43.3%	33.3%
LESSON FOUR: The Community Care Clinic	10.3%	10.3%	27.6%	51.7%
LESSON FIVE: Taking the Message Home	3.6%	21.4%	46.4%	28.6%

At Box Elder 94% of the students said that the beta test lessons were “just right”, with the remaining 6% saying that they were too easy. Student perception of the effectiveness of the five beta test lessons was high. On average 69% of the students said that they learned some things or a lot of things from these lessons. Table 5 on the next page summarizes student perceived learning for Box Elder. There was no perceived learning data from Crossroads Alternative High School.

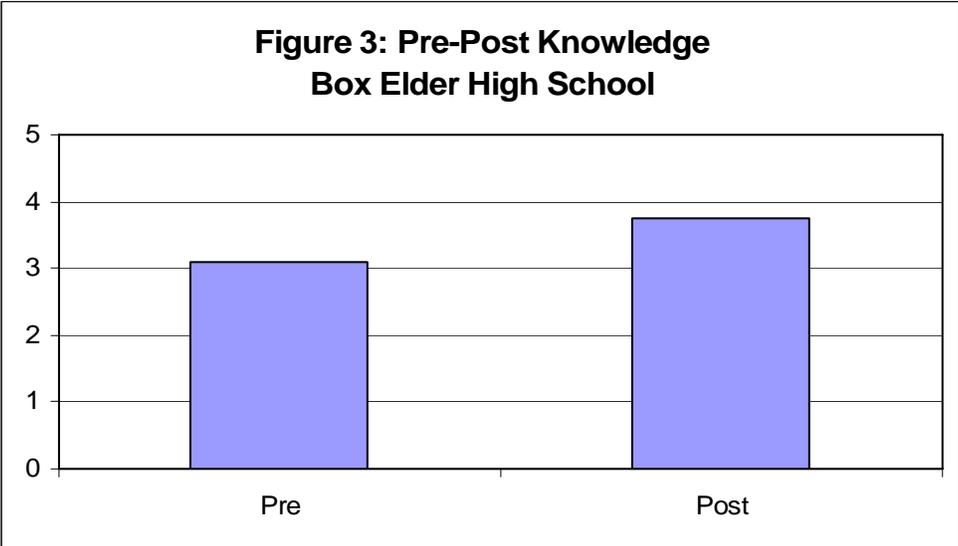
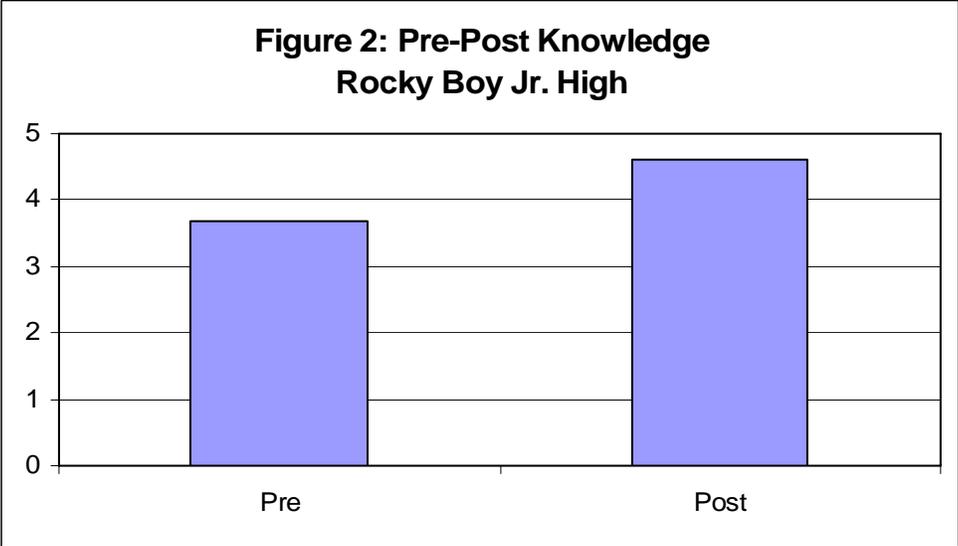


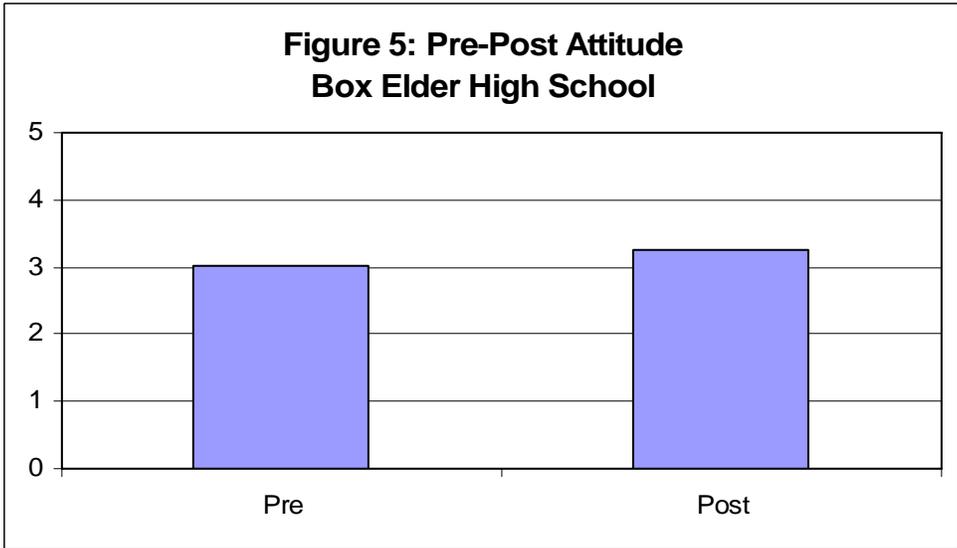
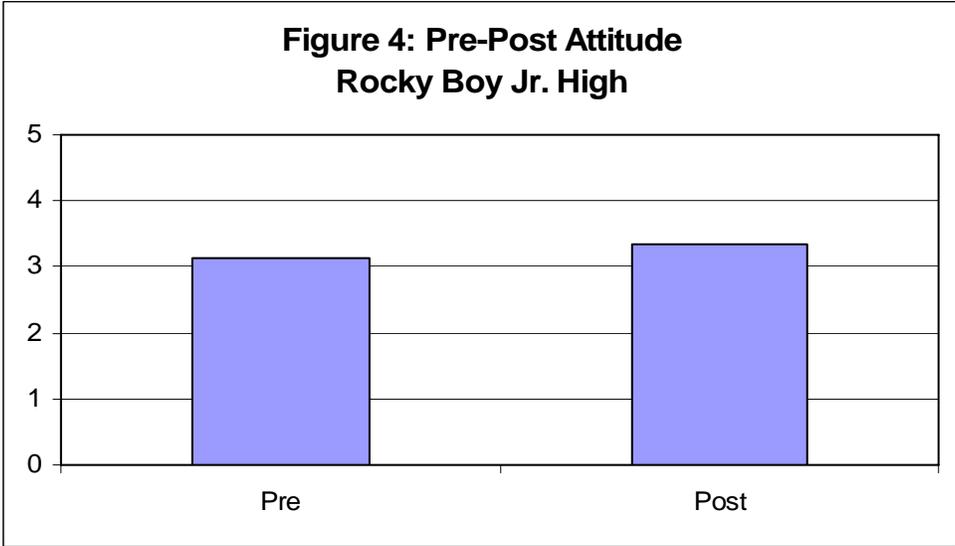
Table 5
Student Perceived Learning: Box Elder High

Lesson Title	I learned nothing 1	I learned a little bit 2	I learned some things 3	I learned a lot 4
LESSON ONE: History in the Making	0 %	41.2 %	35.3 %	23.5 %
LESSON TWO: Focus on Diabetes	0 %	25.0 %	50.0 %	25.0 %
LESSON THREE: Health is Life in Balance	0 %	22.2 %	55.6 %	22.2 %
LESSON FOUR: The Community Care Clinic	0 %	35.3 %	41.2 %	23.5 %
LESSON FIVE: Taking the Message Home	11.1 %	22.2 %	38.9 %	27.8 %

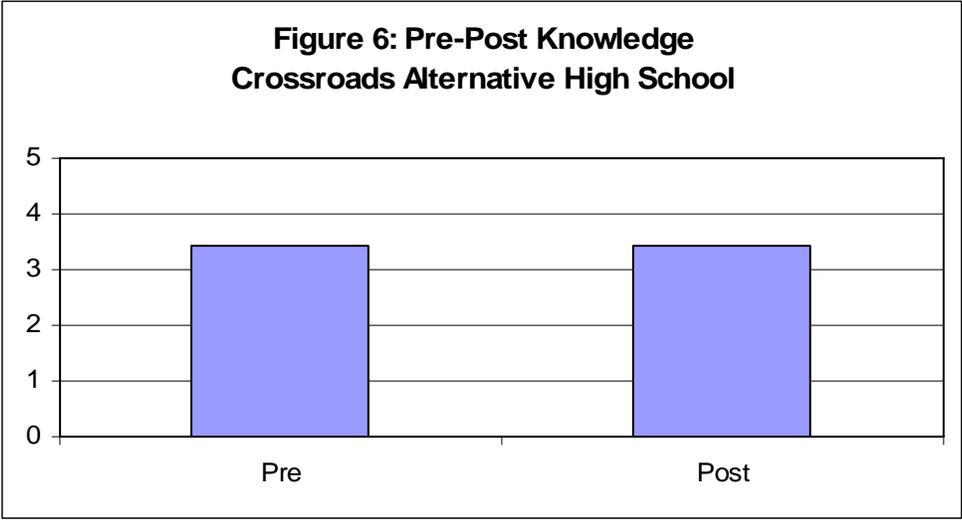
The three Montana beta test sites provided pre-post knowledge survey data and pre-post attitude survey. This provided the opportunity to do six pre-post survey comparisons. Although not statistically significant, all four comparisons showed improvement from the pre survey to the post survey. The two statistically strongest improvements were for the Box Elder knowledge survey ($t = 1.58$; $p = .061$) and the Rocky Boy attitude survey ($t = 1.47$; $p = .073$). Figures 6 and 7 for Crossroads Alternative High School show absolutely no change from pre survey to post survey for both knowledge and attitude. Crossroads is a new implementing school relative to Box Elder and Rocky Boy. In this regard the lack of shift from pre to post may be related to a lower level of implementation relative to the other two Montana schools. These results are illustrated in Figures 2 through 7 below. Additional data tables may be found in Appendix E.



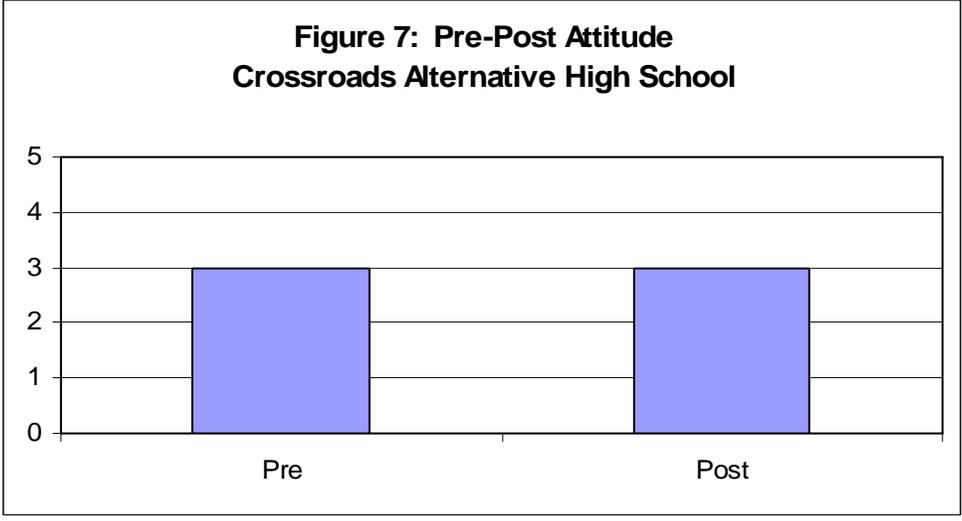




**Figure 6: Pre-Post Knowledge
Crossroads Alternative High School**



**Figure 7: Pre-Post Attitude
Crossroads Alternative High School**



The extended pilot test data as well as the rolling mini beta test data was reported back to the principal investigators at the quarterly steering committee meetings. This timely reporting ensured that critical processes (e.g., lesson and unit revisions) were attended to. Although the planning schedule had slipped from the original timetables, extending both pilot testing and beta testing provided useful data that kept the curriculum development on track relative to goals, key concepts (i.e., enduring understandings) and pedagogical strategy (i.e., the application of the 5E model).

In addition to the evidence reported above (see Appendix E for the complete data record), the September 2006 External Advisory Committee meeting in Denver further corroborates these findings. In particular, the materials reviewed at the 2006 Denver EAC meeting concluded that the curriculum materials are solidly rooted in the 5E model and closely connected to key diabetes concepts (i.e., enduring understandings). While there are important and non-trivial organizational, formatting and graphic design issues to be resolved and implemented for these materials, the expected output of a diabetes curriculum for Native Americans that focuses on *health is life in balance* is happening despite the schedule setbacks. Furthermore there is good evidence as reported above that these materials are well aligned with National Science Standards, generally liked by the students, and generally perceived as engaging and easy to use. Also, two reviews (June 2006 and September 2006) of the curriculum materials show adherence to key concepts. The three curriculum goals are clearly stated at the outset, and the 5E pedagogical model is visible and consistently applied throughout the K-12 curriculum. Finally, earlier pre-post evidence of impact (see Phase II Evaluation Report) has been positive. Also EAC members expressed some concern about time estimates given for lesson and units. Questions of impact and details about lesson time will be further addressed in the September 2007 field test.

The September 2006 Instrumentation Binder was revised and expanded to reflect new instrumentation. Knowledge surveys from the 5-8 curriculum subcommittee were added as was a K-4 attitude survey. Once the final part of the beta testing is complete by December 2006 there will be a full binder of all the instrumentation associated with DETS lessons that have been taught during the rolling mini beta tests. Items from these instruments will be examined statistically (e.g., item discrimination indices; item reliability via Cronbach's alpha). Dr. Coulson, the external evaluator whose background is in psychometrics, will develop a standardized subset of knowledge survey items for all grade level assessments. These standardized DETS assessment packets will consist of content related items as well as more general age-appropriate science knowledge items. During the early part of 2007 Dr. Coulson will work closely on the standardized assessment packet with BSCS who are producing the final pre-production materials to be field tested in September 2007.

The field test evaluation research design will combine sites associated with the eight TCUs, as well as recently contacted sister sites. The sister sites allow the researcher to study variations in level of implementation as well as establish more generalizable results from a wider geographic distribution that will include sister sites from the northeast and southeast. Final field



test sampling will be planned in the spring of 2007. This planning process will involve the distribution of field test packets (based on the current beta test packet) and will include standardized knowledge surveys and attitude surveys. In coordination with PIs at the TCUs school participation lists will be developed, where schools will be assigned (whenever possible) DETS lessons to teach. While formal control groups would not be possible, comparison sites will be designated by level of implementation data. In the field test design the presence of comparison sites will allow for impact assessment when separated out by level of implementation measures (e.g., amount of professional development; familiarity with DETS curriculum; amount of time with the curriculum). Furthermore, because the attitude measures during the beta test have been standardized in format and with general items from the TOSRA (Test of Science Related Attitude) scale, baseline data from the beta test will be available during the field test analyses.

Main evaluation design features of the field test include: 1) standardized pre and post surveys; 2) level of implementation measure; and 3) comparison groups. The pre and post measures will look at student gain as a function of level of implementation. An *implementation composite* is being developed. This composite measure will consist of data from site visits from the external evaluator, reports from the principal investigators at each of the TCUs and an end-of-semester survey distributed to teachers through the PIs via the web. The implementation measure will permit the sample to be divided into *high* implementers and *low* implementers such that a two way analysis of variance (i.e., one within subject variable, and one between subject variable) would look at gain and its interaction with implementation. Where comparison groups (voluntary by TCU site and sister sites) are available, additional two way ANOVAs will be conducted using the implementation composite as a covariate (i.e., two way ANCOVA).

The relationship between achievement and attitude will be examined with a multiple regression framework. Achievement will function as a dependent measure with attitude, implementation level as well as school characteristics (e.g., percent Native American; size of school) serving as independent variables.

Where non-commensurate variables need to be compared for high vs. low levels of implementation effect sizes will be calculated and graphed. Effect sizes are standardized scores and in this regard are scale independent.

Finally data patterns will be studied using a variety of graphical techniques. For example, box-and-whisker plots which show the median, interquartile range, range and outliers can effectively be used to visually describe the differences between DETS classes and comparison classes, or between low implementing classes and high implementing classes.

Scheduling site visits and distribution of instrumentation can be problematic for a large national curriculum project. In that regard scheduling sign-up and status sheets are included in the September 2006 Instrumentation Binder. These forms contain useful information for PIs



regarding data requests from the external evaluator as well as a project data timeline to assist PIs in anticipating and managing these data requests. In addition the revised and expanded September 2006 *Instrumentation Binder* contains checklists for teachers and PIs that will be participating in field testing as well as status matrix to help track names of participating schools, number of students involved, when DETS lessons are being taught, and whether or not pre-tests and post-tests have been administered.

The phase III evaluation timeline has run for 16 months from May 1, 2005 through September 30, 2006. While the external evaluator has contributed time to other DETS related activities such as overseeing video development, Table 6 below summarizes expenses for only evaluation related activities.

Table 6
Cost Summary of DETS Evaluation Related Activities
(From May 1, 2005 through September 30, 2006)

Cost Category	Expenditures
<u>Direct Labor</u>	
Consultant	\$60,000 (600 hours)
Staff	\$7,200 (240 hours)
Data Entry	\$5,200 (260 hours)
<u>Travel</u>	
Transportation/per diem	\$6,800 (5 trips)
<u>Miscellaneous</u>	
Supplies/services	\$1,700
<u>Indirect Costs</u>	
Fringe, overhead, G&A	\$20,225
Total	\$101,125



SUMMARY and RECOMMENDATIONS

The phase III evaluation work began in May, 2005 and concluded in September 2006. The beta test and field test components of this phase were designed to track the critical processes of the DETS curriculum development project. Throughout the beta test phase which included five national level steering committee meetings, 16 steering committee conference calls, 14 evaluation subcommittee conference calls and two EAC meetings in Denver, progress was shown on the three phase III questions: 1) Is the DETS program being developed as planned? 2) Are DETS program critical processes being implemented? 3) Has the DETS curriculum been developed into the expected output?

Throughout phase III the DETS program has attended to a general focus and its three main goals. Beta test data, conference calls and documents (e.g., Instrumentation Binder in Appendix F) distributed at quarterly steering committee meetings insured that the general focus of *health is life in balance* and the three DETS goals relating to community health, the science of diabetes and science careers remained explicit parts of the curriculum. The key concepts document jointly produced by the three curriculum subcommittees (i.e., K-4; 5-8 and 9-12) was derived from the three goals. The key concepts, or enduring understandings, led directly to the development of evaluate activities and the associated lessons. Furthermore by standardizing lesson pedagogy on the 5E model it ensured that a “backwards design” approach was used based on the enduring understandings. The data record during phase III is very strong that the 5E model constituted the guiding foundation for developing the curriculum as planned relative to overall mission (i.e., *health is life in balance*) and three overarching goals (i.e., community health, science of diabetes, careers in science).

Classroom site visits and teacher interviews provided data on whether the DETS program critical processes were being implemented. Specifically, site visit classroom observational data and teacher web surveys resulted in eleven separate pilot test reports and five separate beta test reports to the PIs at the TCUs. This data shows that the curriculum material is aligned with the National Science Standards, follows the 5E format and for the most part is engaging to the students. Four curriculum reviews (June 2006 and September 2006) show that the materials are in fact following closely the 5E pedagogical model, and linking lesson activities to the key concepts of enduring understandings. The data record is clear that the processes (e.g., National Science Standards, use of the 5Es) critical to implementing DETS have been followed.

While the DETS curriculum is not yet in final form due to schedule delays discussed earlier in this report, the evidence is positive that it is moving toward its expected output of a national level replacement modularized curriculum. As beta testing has progressed lesson time estimates have gotten more accurate and realistic. This permits potential users the opportunity to plan the fit of the DETS materials into their existing curriculum. Format improvements have better aligned the central metaphor (i.e., *health is life in balance*) with specific content. Throughout the curriculum reviews, the role of this central metaphor and the presence of the



three DETS goals has been evident. Indeed this has been both the most difficult aspect and the most rewarding aspect of the DETS curriculum development program. That is, the original development effort in 2004 contained more than 100 unit/lessons that were un-unified relative to the central theme and three goals. Furthermore these numerous unit/lessons represented the intellectual efforts of eight Tribal Colleges and Universities (TCUs) not accustomed to working collaboratively. The fundamental success thus far is that since 2004, through careful and sometimes painstaking collaborations the eight TCUs have managed to focus all the disparate unit/lessons into 15 or so unit/lessons. These efforts have resulted in a curriculum that is not only focused but coherent relative to central theme, three goals and the enduring understandings (i.e., key concepts). Finally the DETS scientific review committee (SRC) has reviewed all the material for accuracy. Consequently from where the DETS curriculum development started in late 2003 and early 2004 it has come a tremendous distance toward its expected output, generating a curriculum that is focused, coherent and rigorous.

In summary, the data in this report is based on the completion of six specific phase III beta test tasks (see Table 2): 1) recommend beta test evaluation design strategy; 2) present evaluation design strategy to steering committee (including a practical timeline); 3) develop an instrumentation binder for the beta test; 4) participate in the December 2005 EAC meeting; 5) conduct beta test site visits (spring 2006); 6) generate beta test reports (spring 2006 and Fall 2006). The differential pace of lesson development across the eight TCUs resulted in an extended pilot test period and schedule delays for starting the beta testing. At the December 2005 External Advisory Committee meeting it was recommended that field testing not begin until September 2007. In its place rolling mini betas were designed to run from January 2006 through June of 2007. This schedule was further modified at the September 2006 EAC meeting, where the Spring 2007 beta testing was cancelled. In its place, BSCS will use final revisions based on the fall 2006 beta testing and September 2006 EAC review recommendations to produce final pre-production materials for the September 2007 field tests. At the October 2006 steering committee meeting the September 2006 EAC schedule revisions will be presented, discussed, adjusted (if needed) and approved.

At this stage the following recommendations are made:

1. Add a nationally focused teacher professional development component;
2. Task the external evaluator to work with BSCS to develop a standardized assessment packet that would be part of the final product;
3. Develop a unified strategy for generalizing cultural components and at the same time elicit and apply specific cultural components from within Native American communities where the DETS curriculum will be taught;
4. Unify lessons via graphic design elements (e.g., DETS logo; K-12 pagination);



5. Write a short teacher oriented “navigation” section for the entire K-12 curriculum;
6. Plan and obtain commitments from all school field test commitments by early June 2007 for September 2007 field test;
7. Integrate data from ethnographic component into curriculum materials;
8. Maintain a simple, clean, concise appearance to the materials (i.e., keep it teacher friendly and practical for teachers to use).





Appendix A

For Phase III DETS Evaluation Report
September 2006

Data Forms

Pilot Test survey form (paper-based)
Pilot Test survey form (web-based)
Beta Test survey form (web-based)

Page A-1
Page A-2
Page A-4

DETS Pilot Test Lesson Evaluation Form for Lesson: _____

How did it go? Please take a moment to complete this rating form on the main elements of the DETS lesson that you have recently test taught to your students. The survey is quick-and-easy to complete, and will provide the curriculum developers with a good sense of what is working and what needs to be improved.

Name: _____ School: _____ Grade: ____ Date of lesson: _____

Listed duration of lesson in minutes: _____

Actual duration of lesson in minutes: _____

The lesson components below were:	very clear	clear	unclear	very unclear
1. Lesson Goal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Lesson Objectives	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Vocabulary	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Material List	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. National Science Standards	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. American Indian Content Standards	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. State Standards	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Assessment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Overall

9. Student participation was: low average high
10. Diabetes awareness content was: insufficient adequate excessive
11. Science content was: insufficient adequate excessive
12. For teachers lesson was: teacher friendly confusing too complicated
13. For students lesson was: too easy just right too difficult
14. Lesson length was: too long just right too short
15. Also, lesson was: other: _____

16. This lesson needs more: supporting materials inservice assessments
 other: _____

17. Briefly comment on lesson strengths:

18. Briefly comment on areas that need improvement:

Thanks!

DETS Pilot Test Teacher Web Survey



Introduction: This survey should take about 10 minutes. The purpose of the survey is to document your perception of the DETS curriculum pilot test lessons you have taught thus far. Your confidential responses will help provide candid feedback on this development phase of the DETS curriculum - thanks!

Teacher Name:

Grade Level:

School:

State:

Background Data

A. How many DETS lessons have you taught during the Pilot Test Phase?

- 1 2 3 4 5 more than 5

B. About how many of your students participated in the DETS pilot lessons?

- 1 to 10 11 to 20 21 to 30 31 to 40 More than 40

C. Briefly list the *topics* and *names* of the DETS lessons that you taught.

Survey Questions

1. Overall, how would you rate the content of these lessons for your students?

- too easy just right too difficult

2. Overall, which lesson components (e.g., goal statements, standards, materials list, vocabulary, cultural content, science content, assessments, etc.) were particularly effective and easy to use?

3. Overall, which lesson components (e.g., goal statements, standards, materials list, vocabulary, cultural content, science content, assessments, etc.) were particularly ineffective and difficult to use?

use?

4. From your perspective were the lessons that you taught from the DETS curriculum adequately aligned with the National Science Standards?

yes no

Please briefly elaborate.

5. In general what have been the strengths of the DETS lessons thus far?

6. In general what areas of the DETS lessons that you taught need improvement?

7. Please take a final moment to provide us with a couple of overall ratings on your experiences with the DETS curriculum thus far.

a. From a teacher's perspective how easy-to-use is the DETS curriculum?

very difficult to use difficult to use easy to use very easy to use

b. Compared to other science curriculum that you have taught, how engaging for your students was the DETS curriculum?

very unengaging unengaging engaging very engaging

8. Please describe what kind of support or assistance you would need to fully implement the DETS curriculum.

Thanks for your help!

DETS Beta Test Teacher Web Survey



Introduction: This Beta survey should take about 15 minutes. The purpose of the survey is to document your perception of the DETS curriculum beta test lessons you have taught in '06 (i.e.: from January '06 through June '06). Your confidential responses will help provide candid feedback on this development phase of the DETS curriculum - thanks!

Teacher Name:

Grade Level:

School:

State:

Background Data

A. How did you get involved teaching DETS lessons?

- volunteered word-of-mouth mandate from principal/superintendent

other:

B. What DETS-related professional development opportunities have you had since September '05?

- none introductory inservice on diabetes advanced inservice on diabetes

teacher training on DETS curriculum

other:

C. Approximately how many hours of DETS-related professional development opportunities have you had since May '05?

D. How many DETS lessons have you taught during this Phase (i.e.: January '06 through June '06)?

- 1 2 3 4 5 more than 5

E. About how many of your students participated in the DETS beta lessons?

- 1 to 10 11 to 20 21 to 30 31 to 40 More than 40

F. Approximately what percentage (number only) of your DETS students were Native American?

G. Approximately how many classroom hours (number only) have you spent teaching DETS lessons since January '06?

H. Briefly list the *topics* and *names* of the DETS lessons that you taught.

I. Briefly tell us approximately how many minutes you took to teach each lesson. Generally, was this longer, shorter or about the time that was indicated in the curriculum materials?

Survey Questions

1. How age appropriate were the DETS materials for your students?

- very inappropriate inappropriate appropriate very appropriate

2. Please rate the level of engagement of your students while you were teaching these lessons.

- not engaged somewhat engaged very engaged

3. Overall, how would you rate the content of these lessons for your students?

- too easy just right too difficult

Please briefly explain your rating. That is, which aspects were too easy or too difficult? What made a lesson "just right" (e.g., content, format, vocabulary, etc.)?

4. How well did your students like the DETS lessons?

- Really disliked them Disliked them Liked them Really liked them

5. Please list which lesson components (e.g., goal statements, standards, materials list, vocabulary, cultural content, science content, assessments, etc.) were particularly effective and easy to use?

6. Please list which lesson components (e.g., goal statements, standards, materials list, vocabulary, cultural content, science content, assessments, etc.) were particularly ineffective and difficult to use?

7. From your perspective were the lessons that you taught from the DETS curriculum adequately aligned with the National Science Standards?

- not aligned somewhat aligned very aligned not sure

Please briefly elaborate.

8. In general what have been the strengths of the DETS lessons thus far?

9. In general what areas of the DETS lessons that you taught need improvement?

10. Please take a final moment to provide us with a few more overall ratings on your experiences with the DETS curriculum thus far.

a. How successful were you in implementing the DETS lessons?

- very unsuccessful unsuccessful successful very successful

b. From a teacher's perspective how easy-to-use is the DETS curriculum?

- very difficult to use difficult to use easy to use very easy to use

c. Compared to other science curriculum that you have taught, how engaging for your students was the DETS curriculum?

- very unengaging unengaging engaging very engaging

d. Overall how strong was the Native American cultural framework (e.g. Native American examples, links to Native American culture.)?

- very strong strong weak very weak

Please elaborate:

11. Please describe what kind of support or assistance you would need to fully implement the DETS curriculum.

Thanks for your help!

Submit Reset



Appendix B

For Phase III DETS Evaluation Report
September 2006

Steering Committee Evaluation PowerPoints

May '05 (Leech Lake)	Page B-1
September '05 (Keweenaw Bay)	Page B-5
January '06 (Bellingham)	Page B-8
April '06 (Albuquerque)	Page B-11
June '06 (Spirit Lake)	Page B-13



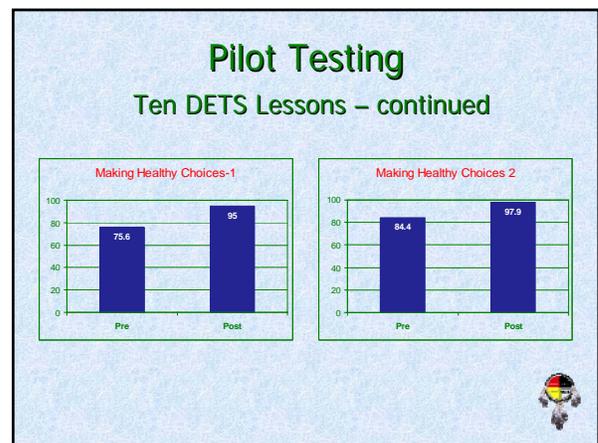
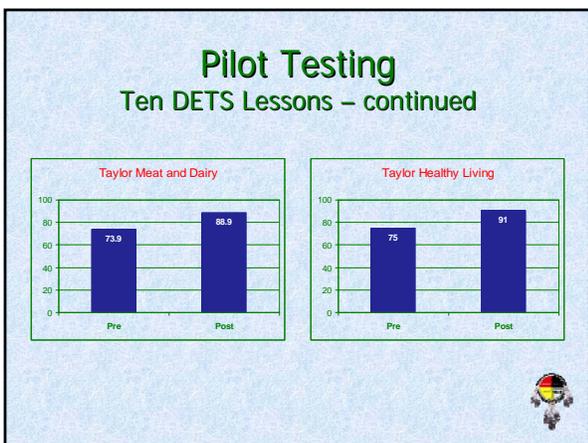
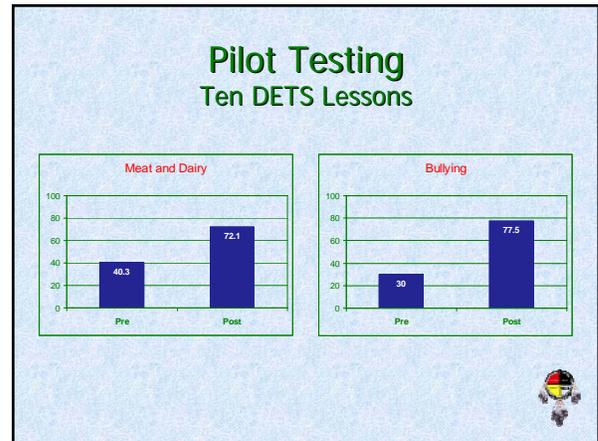
Overview

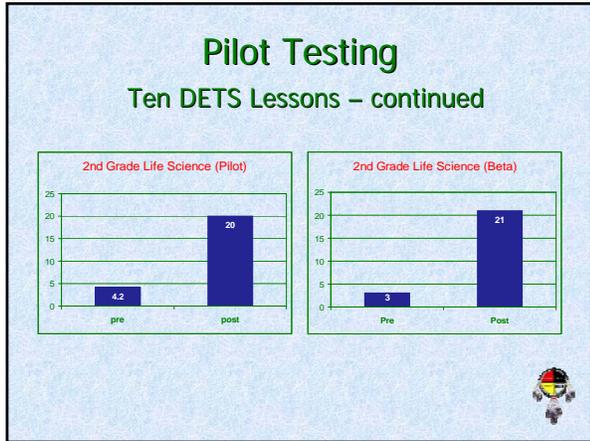
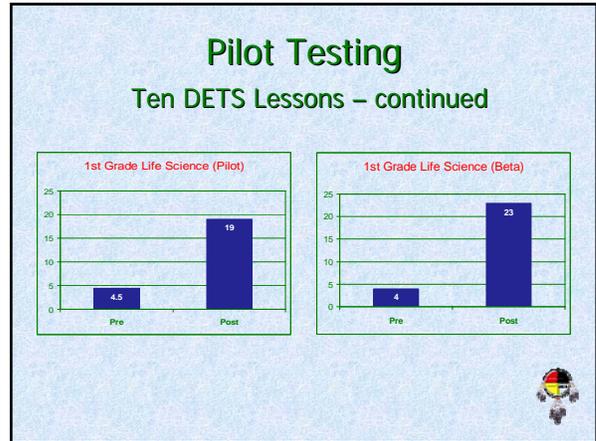
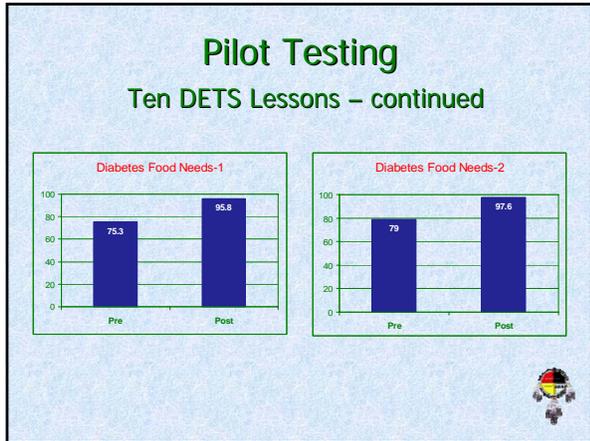
- Pilot Test Data
- Beta Test Data
- Field Test Design Considerations
- Assistance from Curriculum Subcommittees
- What I Need
- Summary: Scheduling and Timeline Binder
- Ethnographic Update
- Presentation update from Lemyra



Pilot Data

- May: 4 reporting sites (9 total reports)
- Strong pre-post findings (at lesson level)
- Reports on lessons have been excellent
- Review data



- ### Beta Data
- Very preliminary
 - Lesson Level
 - Lessons that are tested for a second time

- ### Thus Far
- 9 pilot reports issued (some Beta data)
 - All pre-posts statistically significant
 - Writers & Teachers using pilot web survey (i.e. 26 responses)
 - Gaps:
 - Test items
 - Content outlines

9 Pilot Data Reports Thus Far

	Jan-19-05	May-19-05
Stone Child	✓	
Fort Peck	✓	✓
KBOCC	✓	
SIPI	✓	✓
Haskell	✓	✓
Candeska		
NWIC		
Leech Lake		✓

Test Items Thus Far

	Topics	Author
K - 4	Everybody's Lunch (7 MC; 3 SA)	Mary Hindelang
	Traditional Diet & Exercise (8MC; 4 SA)	Kenan Metzger
	Life Science (10 MC; 36 SA)	
	Making Healthy Choices (10 MC; 6 SA)	
	Meat & Dairy (8 MC; 8 SA)	
	Food Needs of Humans (8 MC; 8 SA)	
5 - 8	Art and Diabetes (12 MC)	Malinda Pekarcik
	Fit and Sit Check (6 MC)	Janet Belcourt's Team
	Diabetes Pre/Post Test (9 MC; 1 SA)	
	Body Systems (15 MC; 4 SA)	
9 - 12		



Wanted: Test Items

- 3 per lesson (2 MC & 1 SA)
- Balanced across health & science content
- Touchstone: Health is Life in Balance



Field Test Design Considerations

- Data – 4 data elements
 - Achievement
 - Attitude
 - Teacher web survey
 - Classroom observations
- Timing
- Basic design
 - Pre/post by levels of implementation with limited control classrooms



Assistance from Curriculum Subcommittees

- Receiving multiple choice and short answer questions for each curriculum unit
- Receiving unit outlines and lesson activities to create specificity for attitude questions
- Working with Lynn (K-4), Janet (5-8) and Bill (9-12) to coordinate evaluation needs



What I Need – Soon (*"...a little help from my friends..."*)

Items & Content Outlines

- Help from Lynn, Janet, and Bill: achievement test items and unit/lesson outlines
- Help from PIs and their staff
 - Coordinating matrix: School-x-Teacher-x-Grade-x-Class matrix
 - Distribution of pre/post tests with implementation of DETS lessons
 - Teacher commitment to provide data
 - Site visits during DETS lessons



What I Need -- Eventually (*"...a little help from my friends..." -- continued*)

The 4 Data Elements

- Pre-post achievement tests (at unit level)
- Pre-post attitude tests (at unit level)
- Completed teacher web surveys on implementation for each DETS classroom
- Site visit data



Summary

"Scheduling and Timeline Binder"

- Sampling classes, printing tests
- Coordinating pre- and post- tests (attitude and achievement) with units
- End-of-semester Online web implementation survey for teachers
- Being flexible yet systematic



Ethnographic Update (Michelle)



Presentation Update (Lemyra)



Evaluation Subcommittee

Larry
Janet
Michelle
Doug
Lemyra



Carolee (C)
Bill
Sandy
Bonnie
Kelly
Lynn



September 21, 2005



Overview – from A to B

- Pilot Testing Update
- Beta Testing
- Pre-post testing
- Implementation measurement
- Beta Test Summary
- Comparative poster exercise
- Presentation survey
- Ethnographic update



Pilot Testing Update

- September: 6 more site reports
(15 pilot reports total)
- Two more strong pre-post findings
(at lesson level)
- 128 paper surveys completed
- 39 web surveys completed



14 Pilot Data Reports

	Jan-19-05	May-19-05	Sept-21-05
Stone Child	✓		✓
Fort Peck	✓	✓	✓
KBOCC	✓		✓
SIPI	✓	✓	✓
Haskell	✓	✓	✓
Cankdeska			✓
NWIC			
Leech Lake		✓	



Summary of Pilot Reports

Report Dates>	January 19, 2005		May 19, 2005		September 21, 2005	
	Feedback Form	Web Survey	Feedback Form	Web Survey	Feedback Form	Web Survey
(1) Stone Child	3 (gr. 7)				3 (gr. K) 2 (gr. 1) 2 (gr. 2) 1 (gr. 3) 1 (gr. 4)	(pre-post)
(2) Fort Peck	1 (gr. 4-6)				2 (gr. K) 1 (gr. 5)	
(3) KBOC	2 (gr. 1-4) 1 (gr. 6)				5 (gr. 1B) 1 (gr. 1) 1 (gr. 8-10)	
(4) SIPI	4 (gr. 8)		7 (gr. 5) 23 (gr. 6) 4 (gr. 6-7) 3 (gr. 7) 12 (gr. 8) 14 (Interviews)		17 (gr. 8) 1 (gr. 6-7) 2 (gr. 6-7-8) 3 (gr. 7) 14 (gr. 7-8) 4 (gr. 8) 1 (Special Needs) 14 (Interviews)	
(5) Haskell	2 (gr. 1) 3 (gr. 2) 2 (gr. 3) 2 (gr. 4)		(pre-post)		1 (gr. K) 5 (gr. 1) 3 (gr. 2) 4 (gr. 3) 2 (gr. 4)	(pre-post)
(6) Cankdeska Cikina						4 (gr. K) 2 (gr. 1) 1 (gr. 2)
(7) Northwest Indian College						2 (gr. 9)
(8) Leech Lake			2 (gr. 4-5) 2 (gr. 5-6)			
TOTAL	26	0	53	25	49	14



Beta Testing

- More systematic
- Identifiable duration
- Specific unit(s) covered
- Apply pre-post testing to units (not lessons)
- Align with curriculum development



WANTED: **Achievement and Attitude**

- 3 achievement items/lesson
- Content outlines for attitude survey
- Balance across health and science
- Touchstone: Health is Life in Balance



Pre-post testing (Achievement)

- Sufficient content to span
- Measure achievement at unit level
- Items sampled from lessons for content coverage
- Keep response burden low
- About 15 multiple choice items
- About 3 short answer items



Pre-post testing (Attitude)

- Based on lesson level and unit level topic outlines
- Measure attitude at unit level
- Topic outlines provide Doug with curriculum language
- Keep response burden low



Implementation measurement

- Fidelity of Implementation – a concomitant variable
- A composite variable
- Measured via web survey
- Measured via site visits
- Measured via classroom reports on DETS materials



Beta Test Summary

- Align Beta Testing schedule with curriculum development
- Base unit achievement tests on sample of lesson items (content)
- Base attitude surveys on lesson and unit topic outlines (language)
- K-4: performance items
 - (e.g., Pre: How many miles did you walk last week?
Post: How many miles did you walk last week?)
- 5-8: written items
 - (~15 per unit of instruction)
- 9-12: written items
 - (~15 per unit of instruction)



Beta Test Summary (continued)

- Run mini-Beta Tests with sites that are implementing at least 4 weeks of DETS lessons
- Produce Interim analyses on the mini-Betas
- Work with Lynn (K-4), Janet (5-8), Bill (9-12):
 - To obtain test items and content outlines
 - To coordinate the *when* and *where* of curriculum implementation (i.e., at least a 4 week chunk)
 - To coordinate site visits to coincide with "4 week chunks" of DETS lessons
- Evaluation group (i.e., Doug) to post implementation survey for teachers on his website



Comparative Poster Exercise

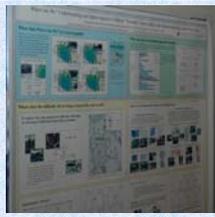
- DETS will be presented at conferences and professional society meetings
- DETS will be innovative and unique as a replacement curriculum
- How have other innovative curriculum developers presented their curriculums?
- Look at 8 photos of NSF innovative curriculum displays
- Some good, some bad, some ugly



Poster 1



Poster 2



Poster 3



Poster 4



Poster 5



Poster 6

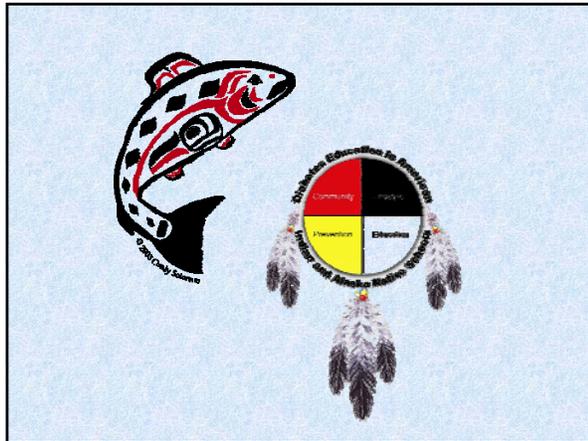


Poster 7



Poster 8





**DIABETES EDUCATION IN TRIBAL SCHOOLS PROJECT
K-12 CURRICULUM MAP
NOVEMBER 2005**

Unit Title (Titles of Units to be BETA Tested)	# Class Periods	Supplement Replacement	Substitution	First Grade	Second Grade	Third Grade	Fourth Grade	Fifth Grade	Sixth Grade	Seventh Grade	Eighth Grade	Ninth Grade	Tenth Grade	Eleventh Grade	Twelfth Grade
K-4 SUBCOMMITTEE															
The Round Dance, A Circle of Balance															
1. Introduction to the Round Dance -- "The Round Dance Food Model"	1	RS	X	X	X	X	X								
2. Importance of Water	5														
3. (K-2) Earth's Soil -- Sprout yourself or (3-4) Earth's Soil Composition	5														
4. Vegetables and Fruit	5														
5. Dairy and Meat Foods	5														
6. (K-2) Grains and Fats or (3-4) Grains, Fats, and Food Advertising	5														
7. (K-2) Everyday and Sometimes Foods or (3-4) Harvest from Our Mother Earth, Traditional Native American Diet & Exercise	5														
8. (K-2) What is Diabetes? Or (3-4) Exploring Type 1 & Type 2 Diabetes	5														
The Round Dance Shows the Circle of Life All Animals Need to Make Healthy Choices:	5	RS		X	X	X									
All Things to Nature are Linked	5	RS					X	X							
Everybody's Somebody's Family, Everybody Lives Where Lunch is Available	6														
The Round Dance is a Friendship Dance: Balancing Self and Others	7	RS													
Kindergarten Lessons: Setting Goals for Good Health	6		X												
Meal and Fitness Planning Conflicts	6		X												
The Body's Needs: Balancing Food, Water, Rest, and Physical Activity	5	RS		X	X	X									
Grade 1 & 2 Lessons: Healthy Friendships	5/4	RS		X	X										
Understanding and Handling Bullying	5/4														
Grade 3 & 4 Lessons: Making Healthy Choices -- Third Grade	2/1	RS				X	X								
Setting Goals for Good Health -- Third Grade	1														

**DIABETES EDUCATION IN TRIBAL SCHOOLS PROJECT
K-12 CURRICULUM MAP
NOVEMBER 2005**

Unit Title (Titles of Units to be BETA Tested)	# Class Periods	Supplement Replacement	Kindergarten	First Grade	Second Grade	Third Grade	Fourth Grade	Fifth Grade	Sixth Grade	Seventh Grade	Eighth Grade	Ninth Grade	Tenth Grade	Eleventh Grade	Twelfth Grade
5-8 SUBCOMMITTEE															
Science Unit: #1 History in the Making #2 Focus on Diabetes #3 It's all about balance #4 The [insert name of school] Community Care Clinic #5 Taking the Message Home	8	S								X	X				
Social Studies Unit: 5-6 section #1 Letter from Down Under #2 Change and Choices #3 Anna's Questions about Diabetes #4 Connections	6	S					X	X							
7-8 unit section #1 Lifestyles in Focus #2 Environment and the Circle of Balance #3 The Balancing Act #4 Choice is Power #5 The Balancing Act, Part II	7	S							X	X					

**DIABETES EDUCATION IN TRIBAL SCHOOLS PROJECT
K-12 CURRICULUM MAP
NOVEMBER 2005**

Unit Title (Titles of Units to be BETA Tested)	# Class Periods	Supplement Replacement	Substitution	First Grade	Second Grade	Third Grade	Fourth Grade	Fifth Grade	Sixth Grade	Seventh Grade	Eighth Grade	Ninth Grade	Tenth Grade	Eleventh Grade	Twelfth Grade
9-12 SUBCOMMITTEE															
Science Unit: The Cell	2	S													
Careers	2	S													
Science Unit: Circulation, Respiration, Digestion, Stress and Diabetes	4	S									X				
Health Education Unit: Culture and History	5	S									X				
Science Unit: Energy Production and Utilization	2	S									X				
Science Unit: Diabetes in the Community: Introduction to Qualitative Research Methods	6	S									X	X	X		
Civics and Government Unit: Lobbying for the Health of It	5	S									X	X	X		
Science Unit: Diabetes in Life Science 1: Prevention #1 Life in balance and type 2 diabetes #2 Dynamic feedback systems, insulin resistance, and type 2 diabetes #3 Risk factors for type 2 diabetes #4 Prevention of type 2 diabetes	7-9	S or R									X	X	X	X	X
General Unit (science, health ed, PE, etc.) Using SMART Goals	2	S									X	X	X	X	X

Evaluation Subcommittee

Larry		Carolee
Janet		Bill
Michelle		Sandy
Doug (C)		Bonnie
Lemyra		Kelly
		Lynn

January 24, 2006 Northwest Indian College

Overview

- Timeline at EAC
- Mini Beta Testing
- Available Beta Testing Forms
- When-and-where of these assessment forms
- Update on ethnographic study
- How-when-where of the ethnographic interviews

Concordant Committee

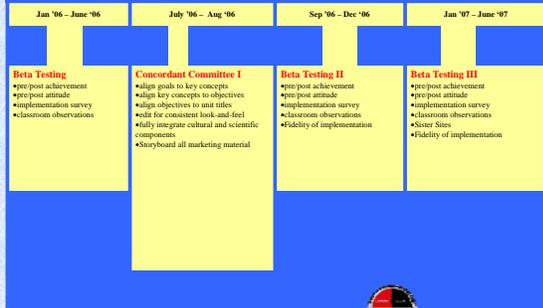
- Harmonizing the Curriculum parts
- Seeking a unified look-and-feel
- Membership
 - 3 to 4 DETS folks
 - 1 to 2 External folks
- Establish operating change and budget by July '06



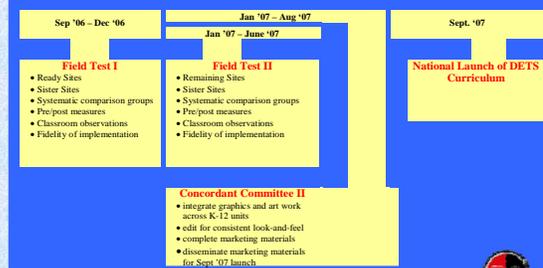
Current DETS Timeline: '06 – '07



Probable DETS Timeline: '06 – '07



Probable DETS Timeline: '07 – '08



Mini Beta Testing

- January 06 through June 06
- clumps of DETS lessons
- self-initiated pre-post assessments
- send assessment items and data to Doug
- implementation suggestions



Available Beta Forms

- **Teacher Web Survey** (for clumps of DETS lessons); developed by Doug and Carolee; available at pscounts.com/detsbeta
- **K-2 Attitude Survey** – A read-out-loud form on general attitude toward science; developed by Doug and Mary; available via email
- **Teacher Participation Survey** for the end of the '06 semester; developed by Doug and the Evaluation Subcommittee; available on the web by March '06
- **Needed:** pre-post achievement assessments; content linked attitude questions (prototypes available in *Instrumentation Binder*)



When and Where of Beta Forms

- Throughout current academic semester
- Available via email or online submissions at Doug's web location
- Self initiated pre-post assessments (e.g., Carolee's "pre-post journals" and Kenan's pre-post classroom tests)



Update on Ethnographic Study

- Michelle Chino and LeMyra DeBruyn





Evaluation Subcommittee

Larry Janet Michelle Doug (C) Lemyra		Carolee Bill Sandy Bonnie Kelly Lynn
--	--	---

April 11, 2006 Southwest Indian Polytechnic Institute

Overview

- Current Timeline
- Mini Beta Testing Update
- Available Beta Testing Forms
- Beta Data Flow
- Fall Field Test Components
- Presentations Catalogue
- Update on ethnographic study

Current DETS Timeline: '06 – '07

Jan '06 – June '06	July '06 – Aug '06	Sep '06 – Dec '06	Jan '07 – June '07
Beta Testing • pre-post achievement • pre-post attitude • implementation survey • classroom observations	Concordant Committee I • align goals to key concepts • align key concepts to objectives • align objectives to unit titles • edit for consistent look-and-feel • fully integrate cultural and scientific components • Storyboard all marketing material	Beta Testing II • pre-post achievement • pre-post attitude • implementation survey • classroom observations • fidelity of implementation	Beta Testing III • pre-post achievement • pre-post attitude • implementation survey • classroom observations • Sister Sites • fidelity of implementation

Current DETS Timeline: '07 – '08

Sep '07 – Dec '07	Jan '08 – Aug '08	Sept. '08
Field Test I • Ready Sites • Sister Sites • Systematic comparison groups • Pre/post measures • Classroom observations • Fidelity of implementation	Field Test II • Remaining Sites • Sister Sites • Systematic comparison groups • Pre/post measures • Classroom observations • Fidelity of implementation	National Launch of DETS Curriculum
Concordant Committee II • integrate graphics and art work across K-12 units • edit for consistent look-and-feel • complete marketing materials • disseminate marketing materials for Sept '07 launch • announce availability of curriculum at national conferences		

Mini Beta Testing Update

- January 06 through June 06
- clumps of DETS lessons (i.e., Units)
- self-initiated pre-post assessments
- Pls send assessment items and data to Doug
- The "What and Why" document by Doug and Carolee

3 Available Beta Forms (see handout)

- **Teacher Web Survey:** (for clumps of DETS lessons – i.e., Units); developed by Doug and Carolee; available at pscounts.com/detsbeta
- **Knowledge Surveys:** pre-post achievement classroom assessments; teacher written
- **Attitude Surveys:** – Read-out-loud survey for K-2; paper survey for older students



Beta Data Flow

- Teachers collect student Beta Data (i.e., knowledge surveys and attitude surveys), and complete web survey
- Teachers give PIs knowledge surveys and attitude surveys
- PIs send Doug Beta Data for analysis



Fall Field Test Components

- Teacher web survey
- Standardized Knowledge Survey (pre/post)
- Standardized Attitude Survey (pre/post)
- Classroom Observational Protocol
- Systematic comparison groups
- Systematic start dates



Presentations Catalogue (The DETS Resume – see handout)

- Documenting DETS considerable public effort
- Database on articles, poster sessions, presentations, professional development workshops, etc
- Send Doug news of your efforts
- Via email, snail mail, survey form or website form at: www.pscounts.com/detspresentations



Update on Ethnographic Study

- Michelle Chino and LeMyra DeBruyn





Evaluation Subcommittee

Larry
Janet
Michelle
Doug (C)
Lemyra



Carolee
Bill
Sandy
Bonnie
Kelly
Lynn

June 20, 2006 Cankdeska Cikana

Overview

- Current Timeline
- Mini Beta Testing Update
- Available Beta Testing Forms
- Beta Data Flow
- Fall Field Test Components
- Presentations Catalogue (DETS Resume)
- Improved DETS Video
- Getting acknowledgment data
- Update on ethnographic study




Current DETS Timeline: '06 – '07

Jan '06 – June '06	July '06 – Aug '06	Sep '06 – Dec '06	Jan '07 – June '07
<p>Beta Testing</p> <ul style="list-style-type: none"> • pre/post achievement • pre/post attitude • implementation survey • classroom observations 	<p>Concordant Committee I</p> <ul style="list-style-type: none"> • align goals to key concepts • align key concepts to objectives • align objectives to unit files • edit for consistent look-and-feel • fully integrate cultural and scientific components • storyboard all marketing material 	<p>Beta Testing II</p> <ul style="list-style-type: none"> • pre/post achievement • pre/post attitude • implementation survey • classroom observations • fidelity of implementation 	<p>Beta Testing III</p> <ul style="list-style-type: none"> • pre/post achievement • pre/post attitude • implementation survey • classroom observations • Sister Sites • fidelity of implementation




Current DETS Timeline: '07 – '08

Sep '07 – Dec '07	Jan '08 – Aug '08	Sept. '08
<p>Field Test I</p> <ul style="list-style-type: none"> ○ Ready Sites ○ Sister Sites ○ Systematic comparison groups ○ Pre/post measures ○ Classroom observations ○ Fidelity of implementation 	<p>Field Test II</p> <ul style="list-style-type: none"> ○ Remaining Sites ○ Sister Sites ○ Systematic comparison groups ○ Pre/post measures ○ Classroom observations ○ Fidelity of implementation 	<p>National Launch of DETS Curriculum</p>
<p>Concordant Committee II</p> <ul style="list-style-type: none"> ○ integrate graphics and art work across K-12 units ○ edit for consistent look-and-feel ○ complete marketing materials ○ disseminate marketing materials for Sept '07 launch ○ announce availability of curriculum at national conferences 		




Mini Beta Testing Update

- Continuing through June 2007
- Beta Data in from:
 - SIPI
 - Stone Child
 - Leech Lake
- Denver 7/06: Doug to review "What and Why" of Beta Testing with teachers




3 Available Beta Forms

- **Teacher Web Survey:** (for clumps of DETS lessons – i.e., Units); developed by Doug and Carolee; available at pscounts.com/detsbeta
- **Knowledge Surveys:** pre-post achievement classroom assessments; teacher written
- **Attitude Surveys:** – Read-out-loud survey for K-2; paper survey for older students



Beta Data Flow

- Teachers collect student Beta Data (i.e., knowledge surveys and attitude surveys), and complete web survey
- Teachers give PIs knowledge surveys and attitude surveys
- PIs send Doug Beta Data for analysis



Fall 07 Beta Test Components

- Teacher web survey
- Teacher-made Knowledge Survey (pre/post)
- Doug-made Attitude Survey (pre/post)
- Site visits by Doug
- Participation by sister sites when possible
- Data to PIs, then to Doug for analysis



Teacher Components

- Administer untainted pre/post tests
- Keep student motivation high
- Put pre/post data into Excel
- Include answer key
- Complete web survey
- Give DETS coordinator (or PI) Beta Data



Presentations Catalogue

(The DETS Resume – see [handout](#))

- Documenting DETS considerable public effort
- Database on articles, poster sessions, presentations, professional development workshops, etc
- Send Doug news of your efforts
- Via email, snail mail, survey form or website form at: www.pscounts.com/detspresentations



DETS Video

- New and improved
- Greater emphasis on children
- Inaccurate content cut
- Irrelevant content cut
- Additional shots & interviews
- All 8 TCUs represented
- Kudos to Bill Curtis



DETS Acknowledgements

- Writers
- Artists
- Pilot-Beta-Field test teachers
- EAC
- PIs, coordinators
- NIH folks



Update on Ethnographic Study

- LeMyra DeBruyn and Michelle Chino





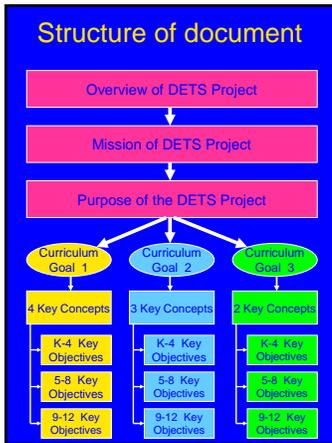
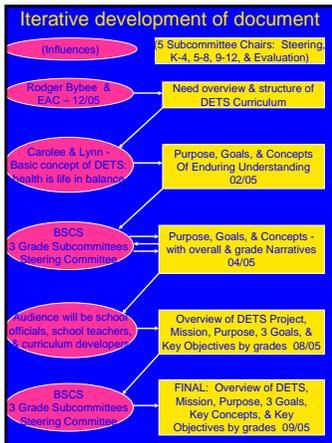
Appendix C

For Phase III DETS Evaluation Report
September 2006

External Advisory Committee Evaluation Power Point

Denver '05 PowerPoint
2006-2007 Timeline Slide

Page C-1
Page C-3



Overview of DETS Project

The DETS Project is part of a national effort to decrease the incidence and improve the care of type 2 diabetes among American Indian and Alaska Native children. The DETS Project is a K-12 curriculum that has a multidisciplinary approach. The DETS curriculum consists of units that incorporate national education standards, inquiry learning, and American Indian / Alaska Native cultural and community knowledge.

- ### Mission of DETS Project
- Increase the understanding of health, diabetes, and maintaining life in balance among American Indian / Alaska Native children, families, and communities.
 - Increase the number of American Indian / Alaska Native people in science or health careers.

Purpose of DETS Project

Develop and implement a school-based diabetes curriculum that supports the integration of American Indian / Alaska Native cultural and community knowledge with diabetes-related scientific knowledge.

Curriculum Goal 1

Increase the understanding of health, diabetes, and maintaining life in balance among American Indian / Alaska Native students.

- **Key Concepts for Goal 1:**

- Positive health is a continual process of maintaining life in balance.
- Diabetes is an imbalance of health at many levels.
- Some risk factors and imbalances contribute to the likelihood of diabetes.
- Individuals, families, and communities can maintain health and balance and prevent type 2 diabetes.

Curriculum Goal 2

Increase American Indian / Alaska Native students' understanding and application of scientific and community knowledge about health, diabetes, and maintaining balance, and of the processes of development of that knowledge.

- **Key Concepts for Goal 2:**

- Health, preventing and treating diabetes, and maintaining balance and enhancing health require both scientific and community knowledge.
- Individuals, families, and communities can effectively apply scientific and community knowledge to maintain health and prevent type 2 diabetes.
- Both scientific and community knowledge develop over time.

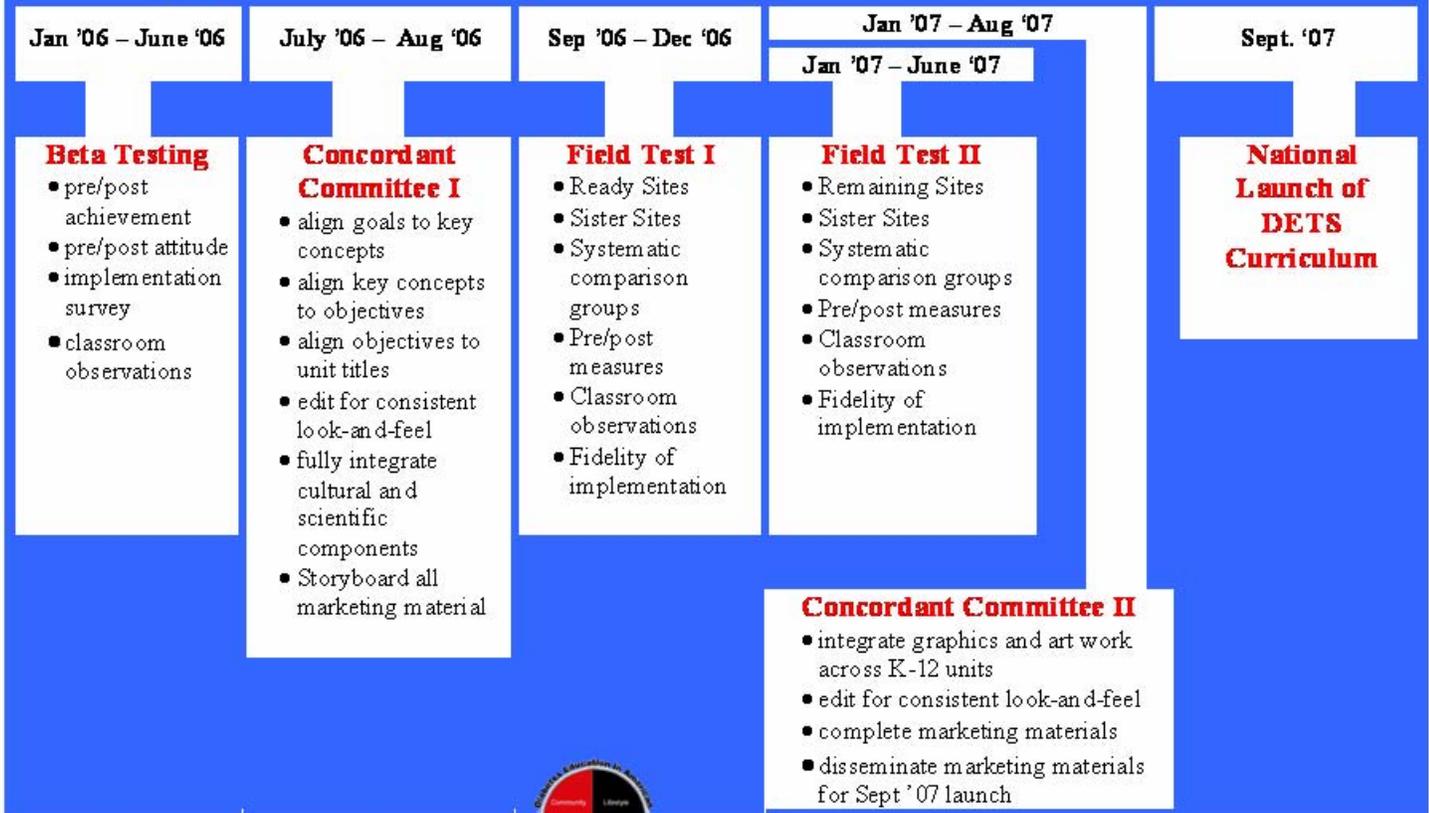
Curriculum Goal 3

Increase interest in science and health professions among American Indian / Alaska Native youth.

- **Key Concepts for Goal 3:**

- Science and health professionals can work with people and communities to prevent and care for type 2 diabetes.
- American Indian / Alaska Native students can and do have future careers in science and health.

Suggested DETS Timeline: '06 – '07





Appendix D

For Phase III DETS Evaluation Report
September 2006

Pedagogical Design Material

The 5Es Worksheet

Page D-1

Understanding by Design Powerpoint

Page D-2

Stage 1 – Desired Results

Established Goal(s):

G

Understanding(s):

Students will understand that...

U

Essential Question(s):

Q

Students will know...

K

Students will be able to...

S

Stage 2 – Assessment Evidence

Performance Task(s):

Complex performance

T

Other Evidence:

Homework

OE

Stage 3 – Learning Plan

Learning Activities:

L

5E and UbD

Engage

<ul style="list-style-type: none">▪ 5E<ul style="list-style-type: none">▪ Pique curiosity▪ Informal pre-assessment▪ Develop questions	<ul style="list-style-type: none">▪ UbD<ul style="list-style-type: none">▪ "hook" in Stage 3▪ Pre-assessment in Stage 2▪ Also in Stage 3:<ul style="list-style-type: none">▪ "hold"▪ "where"
---	---

Explore

<ul style="list-style-type: none">▪ 5E<ul style="list-style-type: none">▪ Constructivist discovery of important ideas▪ Emphasis on experiences	<ul style="list-style-type: none">▪ UbD<ul style="list-style-type: none">▪ Constructivist discovery of important ideas▪ Emphasis on making sense of experience by design▪ Also in Stage 3:<ul style="list-style-type: none">▪ "equip"▪ "rethink"
---	---

Explain

<ul style="list-style-type: none">▪ 5E<ul style="list-style-type: none">▪ make sense of learning experiences▪ Reconcile competing ideas▪ Revise conclusions	<ul style="list-style-type: none">▪ UbD<ul style="list-style-type: none">▪ Make sense of learning experiences▪ "Rethink" and "revise"▪ "Explain" one of six facets through which understanding is revealed
---	--

Elaborate

<ul style="list-style-type: none">▪ 5E<ul style="list-style-type: none">▪ Connect ideas, solve new problems▪ Use terminology▪ Draw conclusions▪ Communicate understanding	<ul style="list-style-type: none">▪ UbD<ul style="list-style-type: none">▪ Connect ideas through overarching essential questions▪ Use terminology▪ Draw conclusions during learning activities (Stage 3), communicate them in assessment (Stage 2)
--	--

Evaluate

<ul style="list-style-type: none">▪ 5E<ul style="list-style-type: none">▪ Demonstrate and share understanding▪ Assess their own progress	<ul style="list-style-type: none">▪ UbD<ul style="list-style-type: none">▪ Demonstrate understanding through complex transfer task▪ Many routes to assessment▪ Assess their own progress
---	--