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NATIONAL PROFESSIONAL DEVELOPMENT PROGRAM
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Abstract
Name of the IHE: Northern Arizona University

Title of Project: The Diné Dual Language Teachers Professional Development Project

Consortia Partners:
The Navajo Nation, Chinle Unified School District, Ganado Unified School District, Tuba City Unified School District, Kayenta Unified School District, Window Rock Unified School District, Rock Point Community School, Flagstaff Unified School District and Little Singer Community School.

Project Description:

The Diné Dual Language Teachers Professional Development Project will assist 40 teachers with proficiency in the Diné language and high academic achievement to meet licensing requirements for teachers who work in language instruction education programs. The project will provide coursework leading to a Masters' degree in Bilingual Multicultural Education with a content emphasis in Bilingual Education, and an endorsement in Bilingual Education and English as a Second Language. In-service teachers will participate in courses online during the academic year. This course delivery mode will allow participants to continue to live and work in their communities. In-service teachers will participate in courses and in a workshop on the Flagstaff campus for 12 days during Summer Session II.

Over a period of five years, 40 Master's students will be linked with 10 dual language mentor teachers to provide challenging instruction in the content areas of mathematics and science. The coursework is aligned with TESOL NCATE Standards and with the Arizona Department of Teacher Education INTASC Teacher Proficiency standards. At Northern Arizona University, 36 units of professional coursework are required for the Master's.

Science and Mathematics Workshops provided at the participating schools each fall and spring and on the mountain campus each summer will further support the improvement of the ability of the teachers to support academic language acquisition skills in LEP students. Classroom teachers will create culturally relevant science and mathematics lessons which will improve achievement, creativity and motivation among talented bilingual students in participating districts.(Babco 2003), (Nelson-Barber, & Lipka, 2008)

Current research (Moir &Hanson, 2008) in professional learning communities demonstrates that social interactions, interpersonal relations, classroom communications and technology support the success of classroom teachers. Research (see e.g. Carnegie, 1986, Holmes, 1990, Wise & Darling Hammond, 1987) documents that effective preparation of good teachers includes practical experience under carefully supervised conditions in collaboration with experienced teachers. These studies show that an effective way to prepare teachers is through site-based partnerships between colleges of education and K-12 schools that allow students to immediately apply what they are learning in their college classes by working with K-12 students under the supervision of mentor teachers.

A. Project Design

The focus of this grant is to prepare teachers with a proficiency in Diné language and high academic achievement to teach in dual language programs. This focus furthers Diné Nation education policy, which states: "The Diné language is an essential element of the life [of] students and culture and identity of the Diné people. The Diné Nation recognizes the importance of preserving and perpetuating that language for the survival of the Nation. Instruction in the Diné language shall be made available for all grade levels in all schools serving the Diné Nation." (Navajo Tribe, 1988)

Since 1998, Northern Arizona University (NAU) has graduated 386 Native Americans with a Bachelors degree in Elementary Education. Many of these recent graduates of NAU are not fully endorsed in bilingual education and do not meet the Highly Qualified Teacher Requirements of the No Child Left Behind Act of 2001. Completion of the M. Ed. in Bilingual Multicultural Education in conjunction with mentoring from experienced bilingual teachers will fill this gap between the qualifications of recent graduates and the requirements for an Arizona Bilingual Endorsement and requirements for Highly Qualified Teachers.

There are 255,543 enrolled members of the Diné Nation (Diné Nation Vital Records Office, 2001). The per capita income on the Diné Nation is $6217 and the unemployment rate is 43.65% (Diné Nation Division of Economic Development). Of the 68,744 housing units on the Diné Nation, 12,279 homes or 31.9% lack complete plumbing, 13,477 homes or 28.1% lack a complete kitchen facility and 28,740 homes or 60.1% lack telephone service. (2000 census)

The Navajo Nation operates six different school systems within its boundaries. Student enrollment of 102,560 includes an Indian enrollment of 70,042 or 68% (Diné DOE, 2003). In

1999 in Arizona there were 2,758 certified elementary teachers in schools on the Navajo Reservation. Of these, 52% were Navajo. This percentage indicates a continuing need to train and certify new teachers especially as current teachers reach retirement age. A survey of Navajo teachers who entered the profession in the six years between 1992 and 1998 indicated that 75% were certified to teach and were teaching in schools on or near the Navajo Reservation. Of the remaining 25%, who were not certified to teach, 15% continued to seek certification. These statistics indicate a great need for support for recent graduates to increase percentages of fully certified and highly qualified teacher education graduates.

In a survey of 242 schools on the Navajo Nation in which 1,222 Navajo classroom aides and 2,474 aides of all types responded, the Diné Division of Education found that 1) Navajo language and education courses are a legitimate part of a teacher education program, 2) students preferred courses delivered on-site, and 3) local schools reported a need to retain and graduate teacher education candidates. (DDOE, 2003) The College of Education at NAU will continue to work with a Consortium of rural reservation schools. Apache County, where the Chinle Unified School District, the Window Rock Unified School District, and the Ganado Unified School District are located, is one of only 38 county-level census divisions in the United States where the most spoken language is not English and one of only three divisions where it is neither English nor Spanish. In Apache County 58% of the population speaks Navajo at home followed by English at 38% and Spanish at 3% (2000 census). Participating schools are:

Rock Point Community School

Rock Point Community School, a PL 93-638 contract school, implements a coordinated Diné education program which recognizes both the Diné and English language as equals and emphasizes maintenance and developmental aspects of both cultures. Rock Point Community

School has exemplified community involvement in education. Rock Point School has developed and implemented culturally and linguistically authentic Diné curriculum units that are representative of local traditions such as clan affiliations. Rock Point Community School serves 419 students in grades K-12. Of these, 385 students are LEP. In 2010, 28.5% of the students were proficient or advanced in language arts and 32.06% of the students were proficient or advanced in mathematics. (OIEP 2009-10 Report Card)

Chinle Unified School District

The Chinle Unified School District serves 3,702 students in grades K-12 (ADOE 2011). The US Census reported that the Chinle Unified School District has the highest percent of families below poverty level: 47% of any school district in the U.S. with a population of 20,000 or more (2000 census). In 2007 this poverty rate increased to 49.96% (2007 Poverty data by LEA). In 2010 students were assessed in reading and mathematics using the Arizona Instrument to Measure Standards (AIMS). The percentage of all district students passing AIMS standards in Grade 3 Mathematics was 31%, 16% for LEP students; Grade 3 Reading was 45%, 20% for LEP; Grade 5 Mathematics was 40%, 26% 9% for LEP; Grade 5 Reading was 38%, 5% for LEP; Grade 8 Mathematics was 26%, 3% for LEP; Grade 8 Reading was 41%, 50.3% for LEP; High School Mathematics was 26%, 12% for LEP; High School Reading was 51%, 15% for LEP. (ADOE, 2010) There are seven schools in the district.

Window Rock Unified School District

The Window Rock Unified School District serves 2,907 AIAN students in grades K-12, 99% of the total enrollment (ADOE 2/9/09). The poverty rate is 30%. (2007 Census) The district implements a Diné Language Immersion Program that serves 300 students a year. In this program students receive content area instruction in the Diné language and are required to

communicate only in the Diné language. Parents sign a contract to reinforce the use of Diné language in the home. In 2010 the percentage of all district students passing AIMS standards in Grade 3 Mathematics was 32%, 40% for LEP students; Grade 3 Reading was 51%, 40% for LEP; Grade 5 Mathematics was 39%; Grade 5 Reading was 51%; Grade 8 Mathematics was 24%; Grade 8 Reading was 55%; High School Mathematics was 36%; and High School Reading was 41%. (ADOE 2011)

Kayenta Unified School District

The Kayenta Unified School District enrolls 2,446 AIAN students in grades K-12, 99% of the total enrollment (ADOE 2/9/09). The district is recognized for innovation in technology-based instruction and has implemented a "learning on demand" interactive curriculum allowing students to use their prior knowledge as a springboard for further investigation into community issues. The poverty rate in the district is 36.46%. (2007 Census) In 2010, achievement in content areas of reading, and mathematics and language arts was measured by the AIMS with the following results: Grade 3 Mathematics was 48%, 22% for LEP students; Grade 3 Reading was 63%, 36% for LEP; Grade 5 Mathematics was 39%, 7% for LEP; Grade 5 Reading was 60%, 29% for LEP; Grade 8 Mathematics was 28%, 0% for LEP; Grade 8 Reading was 51%, 0% for LEP; High School Mathematics was 35%, 7% for LEP; High School Reading was 62%, 13% for LEP. (ADOE 2011) There are four schools in the District.

Tuba City Unified School District

The Tuba City Unified School District implements a Diné culturally integrated curriculum based on the Diné Philosophy of Learning/Beauty Way which has four components: respect for nature, standards (positive attributes) for life, social competence, and making a living. The district is engaged in a successful partnership with local businesses and employers through

its school-to-work program. It enrolls 2,307 AIAN students, 96.8% of the total enrollment (ADOE 2/9/09). The poverty rate is 30.90 %. (2007 Census) In 2010, achievement in content areas of reading, and mathematics and language arts was measured by the AIMS with the following results: Grade 3 Mathematics - 58% met AIMS standards, 34% of LEP students met AIMS standards; Grade 3 Reading - 63% of all students and 46% of LEP met AIMS standards; Grade 5 Mathematics - 33% of all students and 0% of LEP met AIMS standards; Grade 5 Reading 46% and 4% of EL met AIMS standards; Grade 8 Mathematics - 26% and 8% of LEP met AIMS standards; Grade 8 Reading - 48% and 15% of LEP students met AIMS standards; High School Mathematics - 6% and 0% of LEPs met AIMS standards; High School Reading 61% and 8% of LEPs met AIMS standards. There are five schools in the District.

Ganado Unified School District

The Ganado Unified School district serves 1,965 AIAN students in grades K-12, 99.2% of the total enrollment (ADOE 2/9/09). Ganado Primary School received national recognition for its innovative educational program where students create and learn on their own with guidance from their teachers, parents, and community citizens. For example, children publish their own newsletters, operate a post office, write letters to each other and to the principal, and have produced a video bulletin board using puppets. Ganado Primary School offers Diné Language and culture as a part of the school curriculum. The poverty rate is 38%. (2007 Census) In 2010, achievement in content areas of reading, and mathematics and language arts was measured by the AIMS with the following results: Grade 3 Mathematics - 49%, 14% LEP students met standards; Grade 3 Reading - 67%, and 50% LEP met AIMS standards; Grade 5 Mathematics - 34%; Grade 5 Reading - 49%; Grade 8 Mathematics -23%; Grade 8 Reading - 48%; High School Mathematics - 30%; and High School Reading – 38%. There are four schools in the district.

Flagstaff Unified School District

The Flagstaff Unified School District serves 2,815 American Indian students in grades K-12, or 27% of the total enrollment. The poverty rate is 41%. (2007 Census) In 2001, the district created a Puente de Hozho Tri-lingual School, which includes a Diné Language Immersion Program that currently serves 128 students a year. In this program students receive content area instruction in the Diné language for 85% of the day in kindergarten, 75% of the day in 1st grade, and 50% of the day in grades 2-5. On the Spring 2009 AIMS Reading test, students in the Dine immersion program at Puente de Hozho outperformed their Native American peers who were taught in "English only" schools in 4th grade (80% as compared to 56% passing), 5th grade (63% as compared to 55% passing), and 6th grade (67% as compared to 59% passing). On the 2009 AIMS Math test, students in the Diné immersion program outscored their Native American counterparts in "English only" programs in 5th grade (63% as compared to 54% passing), and 6th grade (67% as compared to 53% passing). English language learners in the Diné immersion program also outperformed their peers in "English only" programs in 3rd, 4th, and 5th grades in Reading and in 5th and 6th grades in Mathematics.

Little Singer Community School

Little Singer Community School is operated as a community-controlled school in grant status with an enrollment in grades K-8 of 92 students. Of these, 77 students are LEP. In 2010, 40.74% of the students were proficient or advanced in language arts and 5% of the students were proficient or advanced in mathematics. (OIEP 2009-10 Report Card) Little Singer Community School implements a successful Parent Model Program, which allows 25-30 parents to work in classrooms assisting with instruction. Parents attend training workshops and conferences. This program has increased parental support for learning.

The Learn in Beauty project was initiated as an Annenberg Rural Challenge Grant from 1998-2001. In her evaluation of this project in a book titled *Engaged Institutions; Impacting the Lives of Vulnerable Youth through place-based education*, Sandra Wilson reflects on the need for place-based learning to overcome cultural and historical biases on the Navajo Nation. She writes, "Proponents of place-based learning recognize that community ownership is an essential component of a successful Navajo school." (Wilson, 2003) The project is based on the success of the Rural Systemic Initiative that supports teacher leadership, promotes community engagement and makes place-based learning the foundation of the curriculum. "Place-based education reflects a deep respect for rural life and honors the determination of resident to sustain rural communities…The global community is, in the end, an amalgam of local communities and efforts to strengthen the former by ignoring the latter is counterproductive." (Boyer, 2006) The OELA Title VII Learn in Beauty Project worked with this consortium from 1998-2003. When the Title VII Learn in Beauty Professional Development Project ended in 2003, 100 Diné classroom teachers and curriculum specialists had received an M.Ed. in Bilingual Multicultural Education and a Bilingual or ESL endorsement. (Lockard, deGroat, Bedonie 2002)

Each school in the consortium has been identified as seeking to implement the Diné language and culture teaching perspective, a perspective based on the premises that 1) education is best when it reflects a sense of place; 2) education should be based on the philosophy and values of those being educated; and 3) preparation of teachers/mentors should reflect the Diné perspective of education. At each of these sites there is a reciprocal relationship between the schools and the community, involving the community in the identification of themes/issues to be explored in the teaching process and involving students in field research. In each site a series of

relational learning opportunities have been developed in which the values of "place" and culture are reinforced.

From 1993-1997, as a member of a consortium of five institutions of teacher education sponsored by the Ford Foundation, NAU offered courses leading to an undergraduate degree in Elementary Education to Diné paraprofessionals in Kayenta, Chinle and Tuba City. When funding for this consortium was phased out, NAU continued to offer undergraduate courses to these cohorts of paraprofessionals. Since 1998, NAU has graduated 386 American Indians with a Bachelors degree in Elementary Education and 882 American Indians with a Master's in Education. In Fall 2010, the College of Education at NAU enrolled 256 American Indian students. (nau.edu/pair)

Completion of a Master's in Bilingual Multicultural Education degree at NAU, an Arizona bilingual endorsement, and participation in workshops developed by project faculty and led by a Diné mentor teacher, will empower a Diné teacher to provide high quality dual language instruction in the content areas of science and mathematics to Diné students.

The Project Director, Project Coordinator, and mentor teachers have worked with the Diné Scholarship Office since 1998 to identify qualified applicants who are enrolled tribal members and to assist applicants with the application and admissions process. Mentor teachers have also assisted prospective students with the process.

There is continuing need for Diné dual language teachers in each of the consortium districts. Former Window Rock Superintendent Gloria Hale-Showalter writes, "There are so many diverse needs to address that it is difficult to keep up, especially with a certified staff turnover that averages over 20%. Over the past two decades, using whatever funds were available we have been able to assist over 25 Diné teacher aides in obtaining their college

degrees and becoming classroom teachers. We have several others presently attempting to complete their degrees, but we have been able to provide very limited assistance and they have to juggle jobs, families and studies."

The project will assist teachers in completing coursework and in providing continued support as they "juggle jobs, families and studies." American Indian teacher educator Steve Pavel writes, "A considerable number of American Indian and Alaska Native students can be found concentrated in a relatively small number of publicly funded schools." He continues "There was and still remains a shortage of Native American people who can serve as positive role models in administrative and teaching positions." (Pavel, 1999)

The Diné Dual Language Teachers Professional Development Project will help to meet the need for highly qualified teachers by providing coursework leading to a M.Ed. in Bilingual Multicultural Education and an Arizona Bilingual endorsement for 40 teachers in Diné dual language classrooms. The project will also continue to work with the Diné Division of Education to strengthen dual language programs by participating in the mentor teacher workshops.

Goal 1: Recruitment and retention of highly qualified and fully certified Diné dual language teachers

Objective 1.1 Number of fully certified Diné dual language teachers will increase at each site by 10%.

Objective 1.2.100% of program graduates will meet NCLB Highly Qualified requirements.

Objective 1.3 Retention rate of teachers who meet NCLB Highly Qualified requirements will increase by 5% at each site.

Goal 2: Improve the ability of teachers to support academic language acquisition skills in LEP students

Objective 2.1 100% of program graduates will be placed in instructional settings serving LEP students within one year of graduation.

Objective 2.2 LEP students of teachers in the project will demonstrate improvement in reading, mathematics and writing as measured by the district achievement test.

Objective 2.3 Program graduates will demonstrate improvement in effectiveness of supporting language acquisition skills in LEP students as measured by the graduates TESOL NCATE Portfolio.

Goal 3: Substantially improve education at LEA and IHE levels

Objective 3.1. IHE faculty will revise coursework to reflect tDiné Philosophy of Education framework.

Objective 3.2. IHE faculty will work with mentor teachers to design dual language workshops in mathematics and science which are aligned with NCATE/TESOL standards, Arizona ELD standards, and Diné Division of Education Language and Culture Standards.

Objective 3.3. IHE faculty will assess program participants' effect on student learning using the TESOL NCATE online portfolio and continue to revise this assessment to support the needs of the students.

Master's in BME

An initial cohort of 20 students from the consortium districts will be identified. District Superintendents will nominate candidates on the basis of:

1. Academic proficiency: a GPA of 3.0 and completion of a B.S. or B.A. from an accredited teacher education program.
2. Residency in the nominating school district.
3. Completion of the Diné Language (NAV 211, 212, 350, 351, 301) or Diné Culture

Content Emphasis at Diné College or the equivalent at an accredited University.
4. Proficiency in the English language as demonstrated by completion of English 105 or the equivalent with a grade of B or better.
5. Commitment to professionalism based on participation in college, community and professional organizations.

The Project Director will work with the Superintendent and the mentor teachers at each consortium site to identify candidates for the project who meet the requirements and who demonstrate a commitment to perform work related to the training received that will benefit the dual language program at each participating site. Applicants will be asked to submit an essay which addresses the student's career goals, life experiences and personal and family expectations that will enhance the applicant's career. The Project Director will evaluate the student's transcripts and develop a program of studies which allows each student to participate in cohort classes while fulfilling academic deficiencies.

At NAU, 36 units of professional coursework are required for the Master's. The College of Education is accredited by NCATE and by the North Central Association which guarantees high quality preparation of teachers in alignment with the Arizona Department of Education approved INTASC Standards. These courses will be offered online during the academic year. Additional courses will be offered during Summer Session II on the Flagstaff campus. These courses will allow students to enroll on a part-time basis in professional coursework, while they continue to live and work in their local communities.

Course offerings leading to a Bilingual/ESL Endorsement and M. Ed.

Cohort I	F2011	Sp2012	SuII2012	F2012	Sp2013	SuII2013	F2014

8/11- 12/13	BME 530 637	BME 631 420	BME 531	EDR610 ESE 520	BME 634 608	BME 538	EPS 596 BME 698
Cohort II 8/13- 12/15	F2013 BME 530 637	Sp2014 BME 631 420	SuII2014 BME 531	F 2014 EDR610 ESE 520	Sp 2015 BME 634 608	SuII2015 BME 538	F2015 BME698 EPS596

In the initial year of the project a cohort of 20 Master's students will begin their participation with enrollment in BME 530 - Foundations of Bilingual Multicultural Education and BME 637 - The Cultural Component of Bilingual and ESL Instruction during the fall semester. These courses will be taught online. They will enroll in BME 631 and 420 during the Spring semester. In July, during Summer Session II 2012, students will enroll in BME 531 - Bilingual and Second Language Methodology. This completes coursework for the Bilingual/ESL endorsement. They will enroll in BME 634 - Testing and Evaluation of Language Minority Students and BME 608 - Fieldwork Experience during Spring 2013. They will return to the Flagstaff campus for Summer Session II 2014 to enroll in BME 538 - Linguistics in Educational Contexts. In Fall 2014 Cohort I students will enroll in the capstone course BME 698 and EPS 596 - Multicultural Perspectives of Human Diversity. They will graduate with a Masters' in Bilingual Multicultural Education with a content emphasis in bilingual education in December 2014.

A new cohort of 20 students will begin in year three of the project. Cohort II will graduate in December 2015. Participants from Cohorts I and II will be invited to attend the Summer 2016 Institute to share their use of Diné dual language curriculum in the classroom and plan to assume the role of mentors with new dual language teachers. The Director will work with mentor teachers and with students during the final year of the project to assure that all students complete their M.Ed. degrees. Because the demands of work, family, and study additional time is often required to complete degree requirements; the Director will meet with individuals to discuss options for completing coursework and obtaining financial support when the project has ended. Assistance will be provided to members of cohorts I, II, and III in Year 5 of the project to assure that all students complete the M.Ed.

The following graduate courses in BME will be offered online and adapted by participating project faculty to meet the needs of the local community and the Diné Language and Culture Standards based on ongoing assessment with the TESOL NCATE Portfolio.

BME 531 - Bilingual and Second Language Methodology includes theories and practices that are related to using two languages in teaching minority students.

*BME 637 - The Cultural Component of Bilingual and ESL Instruction includes h*ow to develop and implement programs and practices relevant to local cultures and subcultures to promote parental and community involvement.

BME 530 - Foundations in Bilingual and ESL Instruction includes the theoretical, historical, and legal background of bilingual and ESL instruction, including an overview of current models.

BME 634 - *Testing and Evaluation of Minorities* is a course that provides an in-depth study of assessment policies, practices and equity issues; the use of alternative assessment methods such

as portfolios and authentic assessment, and the development and implementation of assessment in students' native languages.

All coursework will lead to the completion of a M.Ed. in Bilingual Multicultural Education within three years of enrollment in the project. Students who have been admitted to the graduate college on a provisional basis or who have not completed the required Diné language and culture coursework must satisfy all academic deficiencies within this three year period in addition to completing the cohort coursework. Project staff will work with students to identify deficiencies and identify Diné College courses in Navajo Language which will meet these deficiencies during the period of enrollment. This requirement ensures that students will infuse their heritage language and culture into the curriculum and pedagogy of their future classrooms.

In addition to courses and fieldwork experiences with NAU faculty, students will receive individual support from the Project Director, Project Coordinator, and Local Area Coordinators at the NAU Distributed Learning sites. This ongoing mentoring will address academic, financial and family issues. HeavyRunner and DeCelles (2002) write, "A close examination of the retention factors for Indian students reveals that replicating extended family structure within the college culture enhances the student's sense of belonging and leads to higher retention rates." Project activities are designed to guarantee the appropriateness and quality of this design.

Mentor Teachers

Two Mentor teachers at each site will be nominated by the District Superintendent. Mentors will be selected on the basis of:

1. Academic excellence: completion of a M.Ed. in Bilingual education or curriculum and instruction with a GPA of at least 3.0.

2. Holding a valid Arizona Standard teaching certificate with a Bilingual endorsement.
3 At least three years of classroom experience in a dual language setting.
4. Excellence in the Diné language as demonstrated by Diné Tribal language certification.
5. Excellence in English communications skills as demonstrated by oral presentations, publications, and community service.
6 Excellence in classroom performance documented on the current district observation measure.
7. Commitment to professionalism based on participation in community and professional organizations.

Mentor teachers provide support with classroom problems and other issues related to technology and academics. Mentors serve as cheerleaders, tutors, and staff developers. Their role is complex and consists of being an advocate, catalyst, collaborator, data collector, demonstrator, facilitator, instructor, leader, learner, problem-solver, resource provider, and trusted listener. The literature on mentoring strongly supports its value in helping new teachers and preventing them from leaving the profession owing to what has been called "praxis shock." (see e.g., Reyhner, 2003; Kelchtermans & Ballet, 2001; Veenman, 1984)

The project will develop Navajo dual language mentor teachers who 1) employ a variety of formative assessment tools and strategies; 2) accelerate project teachers' practice as defined by the Arizona Professional Teacher Standards; 3) Build project teachers' capacity to analyze student work to improve student achievement; 4) Assist project teachers in demonstrating ongoing self-assessment and reflection; 5) Develop a professional learning community among project teachers and mentors; 6) Increase teacher retention rate.

The mentor teacher will increase student achievement by developing a community of professional educators that utilize formative assessment to accelerate practice. Project teachers will receive mentoring and will be encouraged to reflect on their teaching practices. The Research Agenda Working Group for American Indian and Alaska Native Education Federal Interagency Task Force found that "According to much of the literature, the central issue underlying the educational disparity [between American Indians and Alaska Natives and "Mainstream" Americans] is the poor fit of culturally derived behaviors and expectations between Native American students and school systems. This pervades many aspects of education, and can include culturally biased curriculum, teaching methods, and assessment." (Pavel et al, 2003) Research in schools within rural reservation communities documents the success of culturally contextualized curriculum and pedagogy as measured on standardized assessments of student academic performance in English. (Deyhle,1992; Rosier & Holm,1980; Willetto,1999)

Dual Language Math and Science Workshop

In each year of the project, the director and the project faculty will design three Diné Dual Language Math and Science Workshops to provide students and classroom teachers at participating sites with opportunities to strengthen the community of learners. These workshops will be conducted by the Mentor teachers who are Diné dual language teachers and who will provide lesson plans, materials and teaching strategies appropriate to the interests of the Master's students in the content areas of science and mathematics. The Diné Division of Education will participate in these workshops. Lesson plans and online resources will be added to the online database of materials on the project web page. Mentor teachers will guide project teachers and classroom teachers as they a) align curriculum/assessment/instruction to state and national

academic standards; b) study achievement data and classroom indicators to identify achievement gaps; c) research curriculum, instruction ad assessment resources that target these needs; d) participate in professional development focused on content instruction in the dual language classroom; and e) reflect on improved teaching and learning in these content areas and share findings with colleagues. All workshop curriculum will be aligned with the Arizona English language proficiency standards and with the Diné Language and Culture Standards. LEAs will provide release time and travel for the mentor teachers, project teachers and for non-project teachers to participate in these workshops.

The external evaluator will work with project staff to support mentor teachers and project teachers as they include the assessment of STEM skills in workshop curriculum and online lesson plans. (Nelson-Barber, 1991, Nelson-Barber & Lipka 2008, Carr, Sexton & Langunoff, 2006) In "Trends in African American and Native American Participation in STEM Higher Education" Babco (2003) writes, "We as a nation cannot afford to educate only those who can afford college and the associated perks that influence decisions about admissions (notably standardized tests)." The workshops will include project and non project teachers in supporting the talent of their K 12 students and supporting opportunities for their students to enter post-secondary programs in science and mathematics.

During Summer Session II, the workshop will be conducted on the Flagstaff Campus as a continuation of the five Learn in Beauty conferences which were held from 1998-2003 and the two American Indian Teacher Education Conferences which were held in 2009, and 2010. (Reyhner, Lockard 2009, Reyhner, Gilbert, Lockard 2011) STEM presentations at the 2010 workshop included "Developing a Sense of Place and an Environmental Ethic: A transformative role for Hawaiian indigenous science in teacher education;" "Developing Culturally Based

Science Curriculum for Native American Classrooms;" and "Problem-Based Learning Valuing Cultural Diversity in Science Education with Native Students."

Current research (Moir & Hanson, 2008) in professional learning communities demonstrates that social interactions, interpersonal relations, classroom communications and technology support the success of classroom teachers. The research of Carnegie,1986, Holmes, 1990, Wise & Darling Hammond,1987documents that effective preparation of good teachers includes practical experience under carefully supervised conditions in collaboration with experienced teachers. These studies show that an effective way to prepare teachers is through site-based partnerships between colleges of education and K-12 schools that allow students to immediately apply what they are learning in their college classes by working with K-12 students under the supervision of mentor teachers. Furthermore, the importance of having Navajo students have a culturally appropriate education is well documented. (see e.g. Beaulieu & Figueria, 2006; Rhodes, 1991)

Project Director and Mentor teachers will meet with Master's students during the five years of the project to continue to support the community of learners in participating schools. This willingness to discuss curriculum and pedagogy within the context of the school is part of the ongoing teacher education program at NAU. Marilyn Begay, a Diné Dual Language teacher in grades 6-8 and a May 2003 graduate of NAU, writes "Having gone through the traditional way of teaching myself, I had initially thought that is how I was teaching my classes. For example, I teach Diné language and I was using the translation method. Then, due to these Bilingual Education classes, I changed my teaching methods. Also readings and the research about other language programs help me immensely in understanding how to teach two languages. I appreciate the College of Education for offering a new dimension for those of us

who teach students with a heritage language. I feel much stronger in promoting the significant values of Diné students."

Esther Peaches, a June 2002 graduate described her transformation as a teacher, "I have changed my teaching style 180 degrees, my students have thrived both socially and academically. Due to my shift in teaching strategies and the messages that I have communicated to my students regarding their identities, I was able to empower my students to "go for it" without feeling shameful about their cultural background. My students have learned being bilingual and bicultural is a very powerful tool and they having the power to make changes in their lives and their environment both at school and outside the school."

This project will empower teachers to make instructional choices that honor their professionalism and their language background. Knowledge learned in one language paves the way for knowledge acquisition in a second language. Cummins writes, "In social situations where there is likely to be serious erosion of the first (minority) language there is a need for the development and maintenance of the language if intellectual performance is not to suffer." (Cummins, 1989) Curriculum is contextualized on the knowledge, skills and experiences the students bring to class. Diné language curriculum will extend through experiential learning in a community setting in which the values of "place" and culture will be reinforced. (Deloria & Wildcat, 2001)

The Diné Dual Language Teachers Professional Development Project will lead to an increased capacity of the consortium sites to provide dual language education to Diné students and to provide continual support to new teachers. The capacity of NAU to provide teacher education programs onsite will be strengthened during the five years of the project. This project also serves as a model of long-term collaboration between an IHE, a tribal education department,

public, and tribal schools to serve language minority students in dual language classrooms. NAU will provide work space for the project staff and classrooms and support services for students. The facilities of the participating school districts will be available for workshops and study groups with mentor teachers and project staff. Adequacy of resources are assured due to the integration of project purposes with district goals.

B. Project Personnel

Project Director (25%)

The Project Director will coordinate efforts of the University, consortium sites and the Division of Diné Education, meet with mentor teachers three times a year, and meet with Mentor Teachers and students at each site once each semester. The Project Director will advise students and manage the project budget. The Project Director will work with the External Evaluator to support Project Faculty, to assess the goals of the project, and to adapt course syllabi to meet the needs of challenging dual language content instruction.

Dr. Louise Lockard, Clinical Associate Professor of Bilingual Multicultural Education, PhD University of Arizona in Language Reading and Culture, has published articles and curriculum for American Indian students and presented papers at NABE, AERA and NIEA. She served as the Project Director of the Title III Learn in Beauty Project from 1998-2003. She is a member of the University Curriculum Committee and the NAU NCATE Professional Education Unit Steering Committee. She serves as a TESOL/NCATE program reviewer.

Summer Institute Director (20 days)

The Summer Institute Director works with the tribal education department, schools serving Project teachers, Mentor teachers, and project faculty to plan and implement the Summer

Workshop on Flagstaff's Mountain Campus in July in years one through five. He will design and maintain the project web page.

Dr. Jon Reyhner, Professor of Bilingual Multicultural Education, Ed.D. Montana State University Curriculum and Instruction, has served as the coordinator of the steering committee of the 18 Stabilizing Indigenous Languages Conferences and as a member of the Advisory Work Group for "Assessing Designs for a Comprehensive Repository for Native Language Materials" Project at the Smithsonian National Museum of the American Indian, 2004-2005. He is the editor of *Indigenous Language Revitalization: Encouragement, Guidance and Lessons Learned* and other SILC conference proceedings, and the co-author of *Language and Literacy Teaching for Indigenous Education: A Bilingual Approach.* His recent book *American Indian Education: A History* with co-author Jeanne Eder provides a historical perspective on the recruitment and retention of American Indian teachers.

Project Coordinator (50%)

The Project Coordinator will be hired through NAU's regular staff hiring procedures. The project coordinator manages field-based grant-funded projects, confers with and advises staff, students and others to provide technical advice, problem solving assistance, answers to questions and program goals and policy interpretations. The Coordinator refers questions to appropriate department person when unable to respond, coordinates activities of program with interrelated activities of other programs departments or staff to ensure optimum efficiency and compliance with appropriate policies, procedures and specifications. The Coordinator manages budgetary and accounting practices for the project, prepares periodic reports, financial statements and records on program activities, progress or other special reports.

Project Faculty

The Project Faculty will revise and teach graduate level courses in Bilingual Multicultural Education at a site on the Navajo Nation or during Summer Sessions at Northern Arizona University. The Project Faculty advises Bilingual Master's students.

Dr. Jon Reyhner, Professor of Bilingual Multicultural Education, Ed.D. Montana State U. teaches the capstone course in the Master's program: BME 698. He is the author of Teaching American Indian Students (1992), *Teaching Indigenous Languages* (1997). He serves as editor of the NABE News column "Issues in American Indian/ Alaskan Native Education."

Dr. Norbert Francis, Professor of Bilingual Multicultural Education, Ph.D. Universidad Nacional Autonoma de Mexico was Co-Principal Investigator of the Ford Foundation sponsored "International Partnership for Study and Teaching of Issues Related to Indigenous Cultures." He teaches BME 538: Linguistics in Educational Contexts.

Jennie de Groat (Navajo) Senior Lecturer of Bilingual Multicultural Education, teaches BME 531 Bilingual Methodology. She is a doctoral candidate in Bilingual Multicultural Education at the University of New Mexico. She was the coordinator of a Navajo Language Immersion Camp for the Albuquerque Public Schools from 1997-2001. She serves on the faculty of the American Indian Language Development Institute at the University of Arizona. She is fluent and literate in Navajo.

C. Management Plan

The management plan is developed on the basis of a continuous improvement feedback loop to the project director, external evaluator, mentor teachers and consortium districts to ensure that improvement is integral to the project design. The plan has been developed for the purpose of strong formative feedback aligned with the goals and objectives of the project. The timeline defines activities, milestones for completion and areas of responsibility by project staff.

Year 1

Activity by Goals and Objectives	**Milestone**	**Area of Responsibility**
Diné Division of Education staff meets with project faculty to revise online courses to reflect the Diné Philosophy of Learning 3.1	8/2011	DDOE staff Project Faculty
External evaluator meets with project staff to implement evaluation plan 3.1, 3.3 External evaluator meets with project staff to develop an assessment plan for STEM indigenous knowledge skills. 3.2	8/2011	Project Director External Evaluator Summer Director
Summer Institute Director meets with mentor teachers and project faculty to plan workshops 3.2.	8/2011	Summer Director Project Faculty
Workshop with mentor teachers project web page begins 2.2,2.3	9/ 2011	Summer Director Project Director
Advisor meets with students to plan curriculum check sheet Advisement for Spring Semester 1.1, 1.2	10/ 2011	Project Coordinator
Spring Semester begins, online portfolio begins 1.1, 1.2, 3.3	1/2012	Faculty
Workshop with mentor teachers 2.2, 2.3	March 2012	Project Director Mentor Teachers
Summer Dual Language Workshop 2.2, 2.3	July 2012	Summer Director Mentor Teachers, Non-Project Teachers

Years 2-4

Activity by Goals and Objectives	Milestone	Area of Responsibility
Dine Division of Education staff meets with project faculty to review courses 3.1	8/2012, 2013, 2014	Project Director
Advisor meets with student 3.3	10/ 2012,2013, 2014	Project Coordinator
Workshop with mentor teachers, continue to add lesson plans to project web page 2.2, 2.3	9/2012, 2013, 2014	Project Director Summer Director
Fall coursework begins, online portfolios begin 3.3	8/2012,2013, 2014	Faculty
Advisement for Spring Semester 1.1, 1.2	10/2012, 2013, 2014	Project Coordinator
Spring Semester begins 3.3	1/2012,2013,2014	
Workshop with mentor teachers, update project web page 2.2,2.3	3/2012,2013,2014	Project Director Mentor Teachers
Completion of coursework 2.1	5/2012,2013,2014	
Summer Workshop 3.2	July 2012,2013,2014	Summer Institute Director

External Evaluator meets with project staff to implement continuous improvement and to assess STEM skills in indigenous knowledge systems 3.1, 3.2, 3.3	July 2012,2013,2014	External Evaluator Project Staff

Year 5

Activity by Goals and Objectives	**Milestone**	**Area of Responsibility**
Advisor meets with student 3.3	7/ 2015	Project Coordinator
Fall Semester begins	7/2015	Faculty
Fall Workshop 2.2, 2.3	9/2015	Summer Director, Mentor Teachers
Spring Semester begins 3.3	1/ 2016	Faculty
Spring Workshop 2.2, 2.3	3/2016	Summer Director, Mentor Teachers
Completion of Coursework 2.1	5/2016	Faculty
External Evaluator meets with project staff to prepare final evaluation report 2.1,2.2,2.3	6/2016	External Evaluator
Summer Workshop 2.2	7/ 20016	Summer Institute Director, Mentor Teachers

The Project Director, Dr. Louise Lockard, will devote 25% of her time to the project. In addition to this time commitment for administration of project activities, she will teach courses leading to the Bilingual endorsement, align curriculum with TESOL/NCATE standards and assess online portfolios . The Summer Institute Director, Dr. Jon Reyhner, will work with mentor teachers and students to coordinate the three annual workshops and the project web page. In addition to this time coordinating the workshops, he will teach courses leading to the Bilingual endorsement, align curriculum with TESOL/NCATE standards and assess online portfolios. The project faculty will teach courses leading to the Bilingual endorsement, supervise fieldwork experiences, align workshops with TESOL/NCATE standards, assess online portfolios and observe Masters' students classroom performance.

D. Evaluation Plan

Progress toward achieving the goals and objectives of the project will be evaluated on an ongoing basis by the Project Director, the External Evaluator, and the Research and Evaluation Departments in each consortium site.

Goal 1: Recruit and retain highly qualified and fully certified Diné dual language teachers

Objectives	Evaluation	Area of Responsibility
1.1 The number of fully certified Diné language teachers will increase at each site by 10% .	School report card, project database,	Project Director District Personnel Director
1.2. 100% of program graduates will meet NCLB Highly Qualified requirements.	Students graduation rate, persistence and certification will be tracked through a	Project Director District Personnel Director

	database	
1.3. The retention rate of teachers who meet NCLB highly qualified requirements will increase by 5% at each site.	School Report Card	Project Director District Personnel Director

Outcomes: Increase the number of highly qualified Navajo bilingual teachers in each of the K-12 sites. Increase the number of Navajo bilingual teachers who are retained in the LEA three years after completing the project.

Measures: TESOL NCATE Portfolio, State licensure examinations. Program completers who meet the definition of "highly qualified" program approval standards for content knowledge, and the percentage of project teachers who are retained in teaching in the partner LEA three years after completing the project.

Goal 2: Improve the ability of teachers to support academic language acquisition skills in LEP students

2.1. 100% of program graduates will be placed in instructional settings serving LEP students within one year of graduation.	Student placement will be tracked through a database. Fall/Spring	Project Director District Personnel Director
2.2. LEP students of teachers in the project will demonstrate improvement in reading, mathematics and writing.	SAT10 total by District Spring AIMS passing percentages by District Fall/Spring	Project Director External Evaluator
2.3. Program participants will	TESOL/NCATE Portfolio	Project Faculty

demonstrate improvement in effectiveness as supporting language acquisition skills.	Fieldwork Observations. Self efficacy measure District Teacher Performance Survey Spring	External Evaluator Site Administrator

Outcomes: Implement a process to ensure articulation between national content standards, tribal cultural and language standards, the content knowledge of teacher education candidates, and the pedagogical content knowledge of teachers. Professional developmental offerings for partner teachers based on identified school needs.

Measures: The number of project teachers attending math science workshops. The number of project teachers implementing dual language methods in the math/science classroom.

3.1 IHE faculty will revise core coursework to include the Diné Philosophy of Education Framework	Course Syllabi Course Learning Management System Course evaluations	Project Director Diné Division of Education External Evaluator
3.2. IHE faculty will work with mentor teachers to design dual language workshops in mathematics and science	Fall/Spring Project web page Workshop programs Workshop evaluations	Project Director, Summer Director
3.3 IHE will assess program participants effect on student learning using the TESOL NCATE online portfolio and	Fall/Spring Signature assessments Annual BME TESOL NCATE Report	Project Director Project Faculty

continue to revise this assessment to support the needs of the students	SIOP Observation Protocol	

Goal 3: Substantially improve Diné education at the LEA and IHE level

Outcome: Integrate strategies for collecting and using data on student academic achievement in BME core courses. Curriculum planning task of modifying a regular classroom lesson to meet the needs of ELs. Integrate strategies where deficiencies exist.

Measures: SIOP observation Protocol, District quarterly benchmark assessments, AIMS, Terra Nova, TESOL NCATE Portfolio.

For each year in the project, participants will successfully complete at least 12 credit hours of coursework in good academic standing leading to a M.Ed. in Bilingual Multicultural Education. After three years in the program participants will have completed a M.Ed. or requested a leave of absence which includes a plan for tuition support and a timeline for coursework completion.

The number of certified Diné dual language teachers in each of the consortium schools will be calculated annually. In each district the personnel director will be responsible for updating teaching certificates. At the beginning and end of each year a teacher performance survey will be conducted to assure and to evaluate the performance of teachers regarding the implementation and methods of the District science and mathematics curriculum. This assessment survey will include a model of cultural infusion and will be administered by the Project Director to mentor teachers, students and consortium site principals. At the end of year one this survey will be used to re-evaluate project activities. Course evaluations will be administered at the end of each course to further determine the ongoing needs of Preservice

teachers in the project. The TESOL NCATE Portfolio will be assessed by project faculty and signature assignment data for each cohort will be reviewed.

An External Evaluator will provide the Secretary of Education with an evaluation of the Project in years one through and five. The College of Education and will continue to work with the Office English Language Acquisition, the participating LEAs, policymaking boards, community representatives and community organizations to provide resources for students in the Professional Development Project to become leaders in the field of bilingual education now and in the future.

Dr. Sharon Nelson-Barber, Director of PREL (Pacific Resources for Education and Learning) guides the external evaluation. Dr. Nelson-Barber is a sociolinguist specializing in the education of students from diverse linguistic, cultural and racial backgrounds. Her work centers on teaching knowledge and abilities of educators in nontraditional settings, and competent evaluation of those settings, which span the lower 48 states, Alaska and the north Pacific Islands of Micronesia. She combines expertise in qualitative research and culturally competent assessment and evaluation with years of experience providing equity assistance to schools, organizations and service agencies serving diverse communities. Her recent work includes the NSF-funded projects: Evaluation in Cultural Context, Building an Indigenous Framework for STEM Evaluation, in which she is the Principal Investigator, and it is entitled, *Strengthening Mathematics and Science Education through Indigenous Knowledge and Ways of Knowing*. Additionally she is an evaluator for NSF's Model Institutions for Excellence Program. She is the principal investigator of an NSF funded study which focuses on AI/AN students mathematics achievement data in response to the NSF's Discovery K-12 program challenge, "How can

improved assessment of student knowledge and skills advance pre K-12 Science, Technology, Engineering and Mathematics (STEM) teaching and learning?"

Purposes of the external evaluation are to provide strong formative feedback and to determine to what extent the project has succeeded in achieving its major goals at its conclusion. Dr. Nelson Barber has developed the following overarching questions, derived from the goals of the project to guide the evaluation: 1) In what ways and to what extent is the project successful in recruiting and retaining teachers who meet NCLB Highly Qualified teacher requirements in rural communities served by the project? 2) In what ways and to what extent is the project successful in increasing the collaboration of Mentor teachers and project teachers to support the assessment of STEM skills in indigenous knowledge systems? 3) In what ways and to what extent is the project successful in increasing collaboration between Northern Arizona University and the schools serving the project?

Program Context Indicators	**Milestone**	**Area of Responsibility**
Bilingual Endorsement	May 2013, 2015	Project Director
M.Ed	May 2014, 2016	Project Director
TESOL/NCATE candidate portfolio	May 2012, 2013, 2014, 2015	Project Faculty
TESOL/NCATE report	Spring	Project Director
Teacher Performance Survey	Fall/Spring	Principals, Students Project Director, External Evaluator
Self-Efficacy Measure	Fall/Spring	External Evaluator
Evaluation of K-12 student	Spring	Project Director, Project

outcomes AIMS SAT 10 District benchmark assessment High school graduation rates SIOP protocol BME 631 Student work sample BME 608		Faculty External Evaluator

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