Washington State Higher Education Title II Program Review

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Executive Summary

The state of Washington has long worked to increase student achievement levels by improving teacher quality. This is based on the knowledge that good teachers positively affect student learning. State agencies such as the Office of Superintendent of Public Instruction, school districts, colleges and universities, as well as non-profit and for-profit organizations, have launched various initiatives and invested resources into positively influencing the improvement of teaching and learning.

The No Child Left Behind Act of 2001 (NCLB) became law in 2002. The Washington State Office of the Superintendent of Public Instruction (OSPI) administers Title II, Part A, subparts 1 and 2 which provide resources directly to school districts. The Higher Education Coordinating Board (HECB) implements Title II, Part A, Subpart 3 of NCLB through a competitive professional development grant program. Prior to 2009, the program was called the Washington State Higher Education Improving Teacher Quality Program; it has been renamed Educators for the 21st Century. In this report, the program is referred to as the Title II program, to avoid confusion due to the name change.

The HECB Title II competitive grant program provides resources to partnerships that include a public or private institution of higher education and the division of that institution that prepares teachers and principals, a school of arts and sciences from an institution of higher education, and a high-need school district as determined by federal criteria (with other optional partners). Projects are designed to achieve one or more program goals:

1. Increase participants' subject-matter knowledge (including the use of computer-related technology to enhance student learning) of mathematics, science, English, and/or content area reading.
2. Increase participants' ability to use challenging Washington State academic content and student achievement standards and Washington State assessments to improve instructional practices and improve student academic achievement in mathematics, science, English, and/or content area reading.
3. Increase principals' instructional leadership skills that will help them work more effectively with teachers to help students master mathematics, science, English, and/or content area reading.

'Participant' refers to K-12 teachers, highly qualified paraprofessionals, and/or principals. Highly qualified paraprofessionals have at least two years of classroom experience and either postsecondary education or demonstrated competence in a field or academic subject for which there is a significant shortage of qualified teachers.

Research indicates that a number of factors influence improvements in teacher quality including the delivery of effective professional development activities. Professional development activities shown to impact teacher quality are long term, school-based and school-wide, and include effective professional learning communities, or teams within the school and among teachers at grade level. When these factors are present, improved teacher quality is more likely occur.

While many people believe that professional development results in improved student learning, little conclusive research has been done that helps us understand the connection between teacher professional development and student achievement. Further, although we generally agree that quality teaching is likely to positively impact student achievement, most teacher quality programs have not yet developed a baseline for measuring the impact of teacher change on student learning. Future projects may benefit from creating an evaluation design that demonstrates the long-term impact of professional development on student learning.

The purpose of this report is to provide the following:

- A review of past HECB Title II grants in Washington State to examine project results and common findings;
- Identification of the current cohort projects;
- Best practices and effective models in K-12 professional development to improve teacher quality; and
- Potential connections to other related Washington State professional development and student achievement initiatives.

Review of the Projects

This report includes a review of thirty-three projects in cohorts 1-6. The review and analysis were based on two main data sources: 1) the external evaluation of the first cohort and 2) the final reports submitted by project directors for cohorts 2-6. The external evaluation conducted for projects in the first cohort included a) data from pre- and post-surveys, b) focus groups, c) school-based observations, and d) analysis of Washington Assessment of Student Learning (WASL) scores of students whose teachers were participants in the projects compared to students whose teachers were not participants. In contrast, the analysis of cohorts 2-6 was usually limited to a single source for data: the final reports written by project directors. Several projects were evaluated by external evaluators. In these cases, both the final report and the external evaluation report were used to determine results and impact. Projects in 1-5 rarely used student achievement as an indicator of improved teacher quality; however, in cohort 6, this became a little more common. Project results suggest that using state assessment results continues to be problematic, i.e., results are not significant. More commonly, projects examined student work or used classroom-based assessments to determine impact of teacher changes on student performance.

Some HECB Title II projects were effective because their design incorporated such characteristics as professional learning communities at the school level; specific intervention curriculum or strategies with time for teacher practice; student achievement assessment built into the new strategies or curriculum; and teacher communication networks to sustain professional development activities.

Data sources from the projects suggested that teachers and/or paraprofessionals benefitted from most of the professional development activities. Generally the project directors reported that projects were successful in reaching project goals and meeting requirements

of the federal grant. Project directors were challenged by a range of circumstances, such as availability and engagement of teachers, principals' availability, capability of schools to track project activity at the building level, and the ability to collect data on student achievement. For example, project directors reported that state assessment scores were often released well after the completion of the project and could not be included in the final reports (and in most cases had never been included in evaluating the project results). Further, some project directors found it difficult to engage principals and/or superintendents in project activities, while teachers and other participants considered leadership to be a critical factor in improving teacher quality and implementing change at the building level.

Findings derived from external evaluations and project directors' final reports for cohorts 1-6 include the following:

1. Most of the thirty-three HECB Title II projects reviewed for this report were at least somewhat successful in achieving their goals.
2. Most projects demonstrated success through participant-teacher self-reflection reports, observations, and satisfaction surveys. Only a few of the projects provided quantitative data that suggested that student achievement scores increased as a result of Title II activities.
3. The external evaluation of the first cohort was effective in that it was both summative and formative. Results were enriched by a mixture of methods, including participant observations, surveys, focus groups, and Washington Assessment of Student Learning (WASL) score analysis (former state assessment), in addition to a review of the final reports. A more effective evaluation of future project success would require control and treatment group analysis.
4. In cohorts 2-5 most of the efforts to create professional learning communities (PLC) involved educators from different schools and were marginally successful due to geographical limitations. The quality and results of PLCs improved somewhat in cohort 6.
5. Two projects impacted student achievement through specific intervention strategies and/or curriculum applied in a school at specific grade levels, while simultaneously developing internal systems to implement and sustain changed strategy, e.g., University of Washington's Project BERS in Cohort 3 and Central Washington University's Teacher Quality in the Okanogan Valley Project in Cohort 6.
6. Intensive work with teachers and/or paraprofessionals at the school level was a strategy that usually effected change in teacher quality and sometimes paraprofessional quality.
7. Federal intent was achieved in projects with regard to spending grant funds on federally allowable activities and to developing partnerships with a teacher preparation program at a college of education, a college of arts and sciences, and a high-need school district; however, projects frequently failed to demonstrate unequivocal improvements in teacher quality, involvement of principals or superintendents, or improved student achievement.

8. Projects' short-term duration hampered the likelihood of producing significant gains in student achievement and made it difficult to determine sustainability of improvements in teaching strategies and/or teacher content knowledge. Cohort 7 projects were intentionally designed to be multi-year, to address this limitation.

Professional Development Best Practices and Models
Successful best practices in professional development to improve teacher quality are shown to have these common qualities:

- Builds teacher content knowledge,
- Aligns with standards,
- Enhances teachers' knowledge of pedagogy,
- Ensures that activities are ongoing and embedded at the classroom level,
- Builds teacher collaboration and leadership skills, and
- Helps teachers use data (such as examining student work and test scores).

Evaluation of professional development is frequently based on teacher surveys, focus groups, interviews, observation and other similar measures to substantiate teacher behavior change.

One model for professional development examined in this report is the 'center of excellence.' Such an entity (virtual or otherwise) could potentially provide teachers with a panoply of professional development resources. A physical or virtual center of excellence could be a collaborative effort involving organizations that already provide services to teachers. The center might serve as a convener, assessor of training needs, and a provider of services. It could connect teachers with teachers, be a repository for teaching resources and tools, collect assessment data on teacher quality, disseminate best practices information, design and deliver professional development, and broadcast information about other professional development opportunities for teachers, to name a few possibilities.

Connections to other Washington State Initiatives
The HECB Title II program has the potential for enhancing its effectiveness by connecting synergistically with other programs that share vision, audience, and program goals. Partners might include HECB projects (such as Title II and GEAR UP), the Office of Superintendent of Public Instruction (Title II and other professional development initiatives), the Professional Educator Standards Board (Educator Retooling Program), the State Board for Community and Technical Colleges (Transition Math Project and related projects), and baccalaureate partners such as the University of Washington's Washington Center for Teaching and Learning. Other potential partners might include the Bill & Melinda Gates Foundation and College Spark (connecting, for example, with their College Readiness Initiative). These players and others could be part of a statewide effort to improve teacher quality and impact student achievement by utilizing a center of excellence and/or resource network to align initiatives designed to better serve teachers, districts, and students.

Washington State and many organizations involved in professional development have recently increased their focus on preparing high school students for college and careers. College readiness has been a key part of the Transition Math Project, and the former HECB College Readiness Pilot Project as well as College Spark. Recently a HECB GEAR UP project has added a teacher in-service component focusing on student college

readiness, using lessons learned from the HECB College Readiness Pilot Project (English) and the Transition Math Project.

Future HECB Title II Projects

Future Title II project schools wishing to implement new interventions successfully will benefit from the following:

- Development of school-based professional learning communities or teams that positively support teacher growth and/or the development of internal systems that support teacher learning (such as team review of student work, shared student assessment data from teacher to teacher and grade level to grade level);
- Active involvement, support and participation from principals and other school leaders in professional development activities and goals;
- Development of school teacher-leaders who champion changes;
- Sustained professional development that is integrated into such activities as monthly staff and team meetings and connected to school goals;
- Professional development outcomes that are aligned with state and school goals for improving student learning; and
- Extensive student assessment and project evaluation protocols to determine impact of professional development on student learning.

Washington State has the opportunity to align statewide professional development efforts to support college readiness and improve teacher performance, by collaborating on shared goals and leveraging funding to improve our education system.

Introduction

Preparing educators for the 21st century is one of the most critical activities anywhere for supporting economic development and preparing a highly skilled workforce. Raising student achievement and increasing postsecondary educational opportunities for all students are at the heart of efforts to reform education and ensure that we have an educated citizenry.

Common knowledge suggests that skilled and knowledgeable teachers positively influence student achievement; and therefore teacher professional development can be an effective means for boosting student achievement. Surprisingly, we sometimes have difficulty defining good professional development, and we have little research-based evidence linking effective professional development to increased student achievement. Efforts to determine the effectiveness of professional development have largely been based on teacher-participant surveys and self-report, rather than on assessing change in student achievement. Not all professional development programs can realistically include extensive research components; however, education has a growing need to develop a body of knowledge showing the connection between professional development and student achievement. Professional development programs supported by public funds need to be accountable, i.e., need to show meaningful continuous improvement and demonstrate over time an increasingly positive impact on student achievement.

No Child Left Behind (NCLB) represents an investment in improving teacher quality through professional development, and provides an opportunity to gather empirical evidence about the characteristics of activities that directly influence student achievement. Since 2002 the Washington State Higher Education Coordinating Board (HECB) has been awarding NCLB Title II funding to higher education and high-need school district partnerships to provide professional development to teachers, principals, and paraprofessionals with the intent of increasing student achievement by improving teacher quality. The purpose of this report is to review past Washington State Title II Professional Development projects to examine what we have learned about improving teacher quality and about best practices in professional development for teachers. Most importantly, we will identify ways to increase the likelihood of improving teacher quality and raising student achievement levels through future projects.

This examination and analysis of past HECB Title II projects provides an overview of project results, including: what worked, what didn't work, what common findings emerged, how well the projects measured their results, how successfully the projects met goals and carried out intended activities; and how well projects responded to the federal intent. This report also identifies what we know about effective K-12 professional development, examines promising models, and identifies other potential partners engaged in professional development initiatives in Washington State.

Review of HECB Title II Projects in Washington State

The 33 projects reviewed in this report spanned the period from 2002 through 2009. The first cohort had eight projects. Cohort two had six projects, the third cohort had four, cohort four had two, the fifth cohort was comprised of five projects, and the sixth cohort had eight projects. This report will include a review of cohorts 1-6 and identification of the seventh cohort launched in 2009 and currently in progress.

The first Title II projects in Washington State were awarded funds in 2002-2004. An external evaluation team provided the quarterly, mid-term, and final reports for these collective projects. Lynde Paule was the lead researcher, with assistance provided by Organizational Research Services. Paule's final report (*The Impact of the Washington State Title II Improving Teacher Quality Professional Development Program on Changes in Teachers' Practices and in Students' Achievement – Cycle I*, 2005) is the primary source of data for the first cohort. For purposes of this report, individual projects' final reports made to the HECB were also reviewed.

Cohort 1

The review and analysis of the eight projects in the first cohort (Paule, 2005) included four key questions and extensive quarterly and annual collection of data. The final report was presented in July 2005, at the conclusion of all projects in the first cohort.

Questions addressed in the Paule final report:

1. Did professional development activities improve the quality of K-12 teachers and paraprofessionals? (Did the academic content knowledge and instructional skills of K-12 teachers and paraprofessionals increase in the areas of mathematics and/or reading?)
2. Did professional development provided to K-12 teachers and paraprofessionals result in improvement in students' academic achievement? (Did students' academic achievement improve in the areas of math and/or reading? Did student achievement improve for all students?)
3. What aspects of professional development had the greatest impact on changes in teaching practices and student achievement?
4. Did professional development provided to K-12 teachers and paraprofessionals affect teaching and learning at the school level? (Did the teacher/learning environment in schools change as a result of professional development?)

Methods of analysis in the Paule report included four major data sources: pre- and post-training surveys, pre- and post-focus group transcripts, pre- and post-classroom observation protocols, and students' scores on the state assessment tests. Classroom observations were based on the focus of each project in Cohort 1, to determine patterns of implementation and to compare behavior made during initial site visits to that observed during follow-up site visits. Observations were designed to understand how the participants in the projects implemented their learning and what challenges and successes were encountered. Focus group discussions were guided by the project goals, and were designed 1) to identify patterns and themes that emerged, particularly as teachers implemented their learning in the classroom/ and 2) to determine lessons learned.

Student assessments were analyzed to compare achievement results for participating teachers with those of non-participating teachers from the same school, working with the same grade level. Where possible, principals provided individual student-level data for Washington Assessment of Student Learning (WASL) and Iowa Tests of Basic Skills (ITBS). Analysis includes comparison of participating and non-participating students' scores within two 2-year periods. When local assessments were integrated into projects, this data was also used to analyze student achievement. Most of the projects addressed improvement in teacher quality. Two of the eight projects addressed paraprofessional professional development.

Paule's final report for the first cohort included these findings:

- Participants' familiarity and prior experience with instructional strategies affected implementation.

- When professional development training is provided outside a classroom context with no classroom observations or implementation assistance, teacher, school, and district factors easily mitigate the potential for sustainable changes in practice.
- Training that takes place over an academic year and that includes monthly meetings provides opportunity for participants to form professional communities of practice where implementation issues, instructional strategies, and information and ideas are shared.
- When several teachers and/or paraprofessionals from the same school participated in training, there was greater potential for discussion about the implementation of instructional strategies among participants during the school day and for sharing information with other staff members.
- Linking EALRs and GLEs to instructional strategies could have enhanced participants' understanding of the relationship between curriculum and instruction.
- Performance-based assessment should play a more prominent role in teachers' decisions about which instructional strategies to use and when to use them.
- Teachers' and paraprofessionals' attitudes and ideas about mathematics teaching and learning influence their teaching methods.
- Professional development training that was consistent with instructional strategies in math curricula and materials used in participants' schools increased the likelihood of the training being transported directly into teachers' and paraprofessionals' classrooms.
- Training in specific instructional strategies that could be seamlessly integrated into math lessons, and that resulted in recognizable improvement in students' math skills and knowledge promised a greater likelihood of sustainable changes in classroom practice.
- Classroom assistance with use of math instructional strategies could have increased the potential for greater and more uniform changes in classroom practices, as well as providing participants with individualized help in implementation.
- Analyzing a variety of performance-based assessments, such as students' work samples, can inform teachers' decisions about appropriate instructional strategies.
- Capable teachers must know many things, but knowledge of the subject matter is central.
- Being literate in the content areas of math and/or reading is a necessary precursor to helping students meet state standards.

(Paule, 20-50)

It is worth noting one important challenge in attributing changes in student achievement to specific professional development activities. Paule states that attributing change in student achievement to professional development is "…nearly impossible unless an experimental design is used where teachers and/or paraprofessionals and their students are randomly selected to participate in either an experimental or control group, with one group receiving training and one not…" (73). Teachers decide which strategies or curriculum presented to actually use; this varies from teacher to teacher. It proves difficult to isolate effects of specific components of a professional development activity. This is particularly true when the training is intentionally designed to be non-prescriptive. An additional reality is that schools, teachers, and students are all engaged in other

activities that impact learning and influence behavior change. Isolating the impact of professional development on teacher and student behaviors can be extremely challenging. (74)

Cohort 1 Findings
The research questions and summary of findings from the first eight projects evaluated in the Paule report were:

1. Did professional development activities improve the quality of K-12 teachers and paraprofessionals? (Did the academic content knowledge and instructional skills of K-12 teachers and paraprofessionals increase in the areas of mathematics and/or reading?)

While Paule states that professional development "unequivocally" improved the quality of teachers and paraprofessionals' content knowledge and instructional skills, the trainers' assumptions about participants' ability to carry out change may have been unfounded. Based on classroom observation, Paule suggests that many teachers lacked conceptual knowledge, particularly in mathematics. Further she notes that if trainings incorporated analysis of student work samples, it would have been obvious to the trainers whether participants lacked coherent understanding of concepts and skills they needed to help students learn.

Further, Paule suggested training would have had a greater impact if professional development were framed with EALRs and GLEs, thereby allowing participants to learn how to link subject matter content to specific instructional and assessment strategies. This may have ceased to be an issue over time, since subsequent projects were highly likely to align with EALRs and GLEs.

2. Did professional development provided to K-12 teachers and paraprofessionals result in improvement in students' academic achievement? (Did students' academic achievement improve in the areas of math and/or reading? Did student achievement improve for all students?)

Paule compared aggregate school scores of 2002-03 and 2003-04 WASL and ITBS/ITED[1] assessments in math and reading. Paule also compared classrooms of participants and non-participants who taught the same grade at the same school. Paule reports that "the math and reading score of students from classrooms of project participants increased from pre training to post training, with the most dramatic changes occurring on the WASL rather than the ITBS" (70). Paule also reported difficulties with incomplete data sets, and difficulty comparing student scores in participating versus non-participating classrooms. The researcher recommends assessments of student performance might be better realized through analysis of student work samples.

3. What aspects of professional development had the greatest impact on changes in teaching practices and student achievement?

- Professional development instruction that included both subject matter content and instructional strategies resulted in changes in participants' practices.
- A format of week-long institutes followed by monthly meetings throughout the school year was effective in encouraging new practices.

[1] Iowa Test of Basic Skills/Iowa Test of Educational Development.

- Participation that included teams from schools was more effective than having solo participants from individual schools; having principal participation strengthened school teams.
- Establishing professional networks as part of the training resulted in new instructional practices.
- Determining impacts of professional development is difficult because teachers engage in all kinds of activities with their students, some driven by district mandates. Paule states, "Isolating impact is thus messy and challenging" (74).

3. Did professional development provided to K-12 teachers and paraprofessionals affect teaching and learning at the school level? (Did the teacher/learning environment in schools change as a result of professional development?)

Paule conducted focus group discussions and classroom observations to answer these questions. Results indicated the following:

1. Professional development was targeted to individual teachers and/or paraprofessionals, not the entire school.
2. Professional development provided training in discrete topics, resulting in participants' choosing to use only selected elements of the training. Training in a single curriculum or instructional strategy may have had a larger school-wide impact.
3. Professional development coupled with visits to the participants' classrooms would likely impact implementation and would be more likely to affect school level response.
4. Efforts to impact teachers, paraprofessionals and schools would be more effective if the training or follow-up to training took place at the building site. Site-based training might provide access for more staff to attend the training.
5. Training provided by the projects would have affected practice at the school organization level if it had been connected to EALRs and GLEs, since the State and the districts were engaged in preparing students for state assessments based on EALRs and GLEs.

Cohorts 2-6

Cohorts 2-6 (2005-2009) are comprised of twenty-five projects. For the discussion presented here, all of the individual final project reports submitted to HECB were reviewed. Whereas the review of the first cohort had the benefit of four major sources of data (pre- and post-training surveys, pre- and post-focus group transcripts, pre- and post-classroom observation protocols, and students' scores on the State assessment tests), the discussion of cohorts 2-6 uses data obtained primarily from the project directors' final reports. Third party external program evaluations, whenever available, were helpful to determining results, although funding levels usually limited this as a possibility. Final reports provided by cohorts 2-5 were often limited and sketchy, with no opportunity for follow-up, such as focus groups or other post-project data collection. Overall cohort 6 projects provided a wider range of evaluative data sources in the final reports, when compared with cohorts 2-5. One project in cohort 6 engaged an external evaluator, and one provided an extensive evaluative supplement to the final report.

The review of cohorts 2-6 was framed by these questions:

1. What were the main results for each project, how effective were the projects, what worked and what didn't work?
2. How did projects measure their results?
3. How well did projects meet their goals and carry out their planned activities?
4. How well did projects respond to the federal intent?

Range of Projects

Cohorts 2-6 represented a wide range of projects; all included the required partnerships and were within the scope of the federal grant requirements. State-funded higher education institutions led sixteen of the projects. These institutions included Central Washington University, Eastern Washington University, University of Washington Seattle, University of Washington Tacoma, Yakima Valley Community College, and Washington State University. Private accredited institutions that served as project leads included Heritage University, Gonzaga University, Pacific Lutheran University, and Saint Martin's University. One Educational Service District (112) led two Title II projects.

Ten projects specifically focused on reading. Nine projects focused on mathematics. An additional four projects addressed both mathematics and reading; one of those also added American Indian history and American Indian language to the project's focus (EWU-Wellpinit Teacher Education Project in Cohort 2). Two projects addressed both mathematics and science.

Accomplishments

Final reports reflected overall accomplishment of project goals. Project goals are difficult to categorize beyond the intent of Title II. Each project identified unique goals and activities designed to improve teacher quality.

Projects which exhibited significant results varied from cohort to cohort and among the different categories of activities and goals. Some of the successful projects:

- The EWU-Wellpinit Teacher Education Project was unique in how it embedded itself into the Salish tribal community and used the Salish language.
- The University of Washington's Building Professional Learning Communities in Mathematics was successful in teaching inquiry-based mathematics and formulating inter-organizational professional learning communities.
- University of Washington's Project BERS built capacity of teachers to screen, diagnose, monitor, and measure student outcomes in reading, to assess intervention, and to build internal systems for collecting student test data and using data effectively across grades and levels.
- Two Washington State University projects assisted schools in developing productive Professional Learning Communities (PLCs), i.e., Partnerships in Inquiry and Building Capacity for College Readiness Standards in Mathematics through 11-16 Teacher/Faculty Professional Learning Communities.

Many of the projects had successes in some or most of the project components. These are reflected in the overview [Appendix A].

Several projects focused on specific student populations in high-need school districts, e.g., assisting Native American communities and students who were English Language Learners.

In projects that created or attempted to create professional learning communities, teachers were able to problem solve, share experiences, assess student work, and in other ways reflect on their discipline and practice with colleagues. Learning communities in some projects were further strengthened through communication with other schools and other learning communities. While professional learning communities were sometimes difficult to initiate and sustain, teacher involvement and enthusiasm suggested that this difficulty could be overcome, and that learning communities could have positive school-wide impact.

Having teachers become actively engaged in professional learning communities is essential to their success and impact on student achievement. Most of the early projects were unable to sustain school-based coaching, peer observation, and the development of professional learning communities within the school(s). Research suggests that these are strong elements that lead to teacher quality improvement. Later projects that attempted this had some success. For example, in several early projects teachers reported discomfort with being observed (both by their colleagues and by outside coaches). In later cohorts teachers reported they increased their collaboration and interaction with colleagues through participation in the project.

Several projects included the development of teacher content knowledge. Indeed some projects discovered that goals were hampered by participating teachers' lack of content knowledge, making it difficult for them to apply the instructional strategies they were learning. This was true for the University of Washington's Building Professional Learning Communities in Mathematics; the final report suggested that teachers without content knowledge in mathematics were unable to fully benefit from the professional

development activities. In the sixth cohort, both Central Washington University and Gonzaga University identified goals that included increasing teacher content knowledge.

Participating teachers consistently said that having administrators involved in projects increased the likelihood of implementation and change. In most of the cohorts 2-5, however, principals were not significantly involved in the projects.

Cohort 6 projects reflected new efforts to involve school leadership in professional development, with some success (UW Seattle's Development of Instructional Leadership Skills for Mathematics Education, in particular). Whereas participating teachers in earlier cohorts wanted their principals to have math content knowledge to better support teaching staff, project directors discovered that the short-term nature of the project did not give principal participants time to learn the content.

Echoing the Paule results of the first cohort, cohorts 2-6 experienced limitations in isolating the impact of professional development on teacher and student behavior. The review of cohorts 2-5 would have been greatly improved through the addition of focus groups, site visits and observations, and even follow-up reports on student achievement levels pre- and post-intervention. Cohort 6 projects were more likely than previous cohorts to include focus groups and other means of gathering evaluative data. Lessons learned provide clues about project designs and key elements are likely to lead to strong results.

Cohorts 2-6 Findings

Given the research question for the first cohort and the different research questions for cohorts 2-6, the findings are divided by cohort groupings. Findings in this report are derived from two key data sources: Cohort 1 projects were evaluated based on data sources collected by an external evaluator; Cohorts 2-6 evaluation is based almost exclusively on one data source – the final project report submitted to HECB by project directors.

Findings for cohorts 2-6 echo many of the evaluation findings from the first cohort, although the framing questions for cohorts 2-6 were slightly different: What were the results of the projects? What were the indicators (how did projects measure results)? Did projects meet goals and carry out activities? Did the projects respond to federal intent?

To provide an overview of information, findings are grouped by what worked and what didn't work (challenges), followed by general observations. Some designs, strategies, and elements worked particularly well:

- While early Title II projects focused on teachers becoming aware of EALRS and Grade Level Expectations (GLEs), more recent projects focused on state standards, recently-developed college readiness standards, instructional strategies and intervention, curriculum development, and developing and sustaining professional learning communities or utilizing coaching models that support teacher development.
- Professional learning teams embedded into the school structure tended to have a positive impact on teacher learning.
- Teacher reflection, collaboration, and teacher identification of personal goals was effective in influencing teacher change.
- Teachers' joint examination of portfolios of student work was an effective assessment approach and contributed to measuring the success of the project(s).
- Some relatively successful projects were designed to explicitly connect to a unique local community (e.g., EWU - Wellpinit Teacher Education Project and WSU - Building Capacity for College Readiness Standards in Mathematics through 11-16 Teacher/Faculty Professional Learning Communities Project).
- Training on specific curriculum content was effective in influencing teacher change and student performance (e.g., Heritage University on Sheltered Instruction Operational Protocol for teaching ELL students reading skills, and Central Washington University's Teacher Quality in the Okanogan Valley Project, which utilized a toolbox for instructional change in teaching math and literacy).
- UW – Project BERS successfully provided an integrated system in which teachers were taught to assess students, to develop assessment structures within their schools, and to share and use data across teaching staff, resulting in some increases in student performance.
- WSU's Partnerships in Inquiry developed professional learning teams (PLT) in reading and math, bringing together inter-organizational team members

(university, college, school) to reach local goals, although PLT outcomes proved difficult to assess.

- WSU's Building College Readiness Standards in Mathematics through 11-16 Teacher/Faculty Professional Learning Communities provided extensive analysis of the complexities of developing a learning community made up of high school teachers and college faculty.
- 'Sheltered Instruction Observation Protocol' (SIOP) used by Heritage University's Creating Professional Development Partnerships Project (Cohort 5) demonstrated an 88% increase in teachers' math knowledge based on pre- and post-tests.
- Projects that included built-in assessment tools such as UW Tacoma Project TIER (Cohort 5) were able to show increases in both student and teacher performance.
- Some cohort 6 projects used classroom based assessment with some success in determining project impact, e.g., Pacific Lutheran University's School-University Partnership to Prepare Outstanding Responsive Teachers (SUPPORT) Tacoma Public Schools.

Challenges

Cohorts 2-6 experienced a range of challenges. One consistent challenge was difficulty in measuring changes in student achievement, particularly achievement as measured on the WASL or other standardized instruments. Only a few projects actually attempted to connect the professional development to student learning, although more in cohort 6 attempted this than in previous cohorts. Some project directors considered the projects too short in duration to significantly impact teacher change and student achievement.

In several cases, leadership change during the grant period made it impossible to fully satisfy the goals of the project(s). A number of projects received extended funding, resulting in greater likelihood of success in achieving project goals. Extensions of projects however did not necessarily result in tracking of student achievement data.

Scheduling of professional development activities such as workshops and summer institutes was sometimes problematic because of teachers' and principals' schedules. In a number of cases, activities had to be cancelled, rescheduled, or adapted to virtual formats. Professional development that required teachers to travel and to be away from the school was usually challenging for the participating teachers. This was true for both summer institute-like events as well as for professional development days and other related activities during the academic school year. Some projects had limited success with teachers' online communication with colleagues and with facilitators.

In many of the projects, participating teachers required additional school level support to implement concepts to which they had been introduced. While teachers were enthusiastic about learning new skills and strategies, many could not fully implement learnings at the classroom level because they lacked support (from other teachers, from principals and from teacher-leaders). This lack of support limited the success of these projects.

Some of the projects in cohort 6 launched new efforts to engage school leaders; however, results suggest these projects had marginal success. Principals and in some cases superintendents were often not available for some of the activities. On the other hand, in some projects, the principal's support for project goals led to potential continuation of PLCs or changes in school improvement plans.

Other notable challenges:

- In cohorts 1-5, evidence of results was often not collected, not communicated, and frequently consisted only of participant surveys/reports quantifying participant satisfaction. A number of projects from cohort 6 built in evaluative strategies and data collection methods, with some success.
- Evidence of success infrequently connected to student performance indicators such as the state assessment scores.
- The ability to maintain professional learning communities and teams across schools was adversely affected by geographical distance.
- Developing trust takes time (more time than allowed by grant periods); school-wide implementation was often affected by whether or not trust had been developed among players.
- Often projects did not realize an increase in participant content knowledge; in many cases this was not the explicit goal.
- Projects in cohorts 2-5 usually did not get full teacher participation at training events; attrition rates were high, a major factor in determining whether desired results were achieved. Participation rates in cohort 6 were less affected by attrition than earlier cohorts. This may be due to increases in effective communication to teachers/schools about project expectations.
- Using standardized assessment scores as a success indicator was often ineffective due to factors outside the control of project partners: limited duration of project, testing timelines, and complexity involved in using control groups and intervention treatment groups for empirical studies.
- Project goals were often not achievable within the time frame of grant activities (e.g., UW-Building Professional Learning Communities in Mathematics in Cohort 2, in which it took participants 2-3 years to learn enough mathematics to be able to understand and use inquiry-based learning with students). Beginning with cohort 7, projects awarded were multi-year projects, to remedy this earlier finding.
- Multi-district, multi-level projects were difficult to assess. Schools would be better served by more in-depth work with teachers who are already connected in some way, rather than trying to reach broad audiences (e.g., Educational Service District (ESD) 112 – Reading Achievement Now! – Cohort 4).
- Although projects were often not effective in showing an improvement in student state test scores, they may have increased teacher knowledge and skills as indicated through self-reports, pre- and post-tests, journals, surveys, and classroom based assessments for students.
- Observing teachers at training events is different than observing in the classroom – teachers might model behaviors at a training event while never intending to use them at their schools. Teacher learning needs to be contextual.

- Early cohort projects that taught teachers how to create a Professional Learning Team (PLT) or Professional Learning Community (PLC) often did not follow through at the building level and were not able to demonstrate success. Later cohorts were more likely to build sustainable PLCs by focusing the project on this goal.

One interesting product of the WSU's Building Capacity for College Readiness Standards in Mathematics through 11-16 Teacher/Faculty Professional Learning Communities Project is the qualitative study results from the 11-16 teacher/faculty PLC process (Frost, Akmal & Kingrey (in press)). Results suggest particular difficulties with PLCs made up of faculty and teachers from institutions of higher education and K-12 schools. Little work has been done to understand the complexities of these inter-organizational groups, although "collaboration" is often encouraged by funders. This study suggests that projects incorporating inter-organizational PLCs require extra time (and additional funding) to clarify participants' roles, the process, and the desired outcomes. This case study helps inform us on the complexities of this kind of collaboration.

An analysis of all past HECB Title II projects can be helpful in recommending future directions for evaluating Title II projects.

1. Projects that connect to state standards, that focus on professional learning communities, and that involve changes in curriculum and instruction are likely to be more successful than those that do not. Schools that engage in intensive work locally are more likely to see changes in teacher behavior than are schools that send one or two teachers to professional development with little focus on local implementation. Essential components for success appear to be principal support, involvement of teacher teams, and built-in assessment of progress (ideally, assessment of both teacher change and student improvement).

2. Having teachers use their newly acquired knowledge and skills with a cohort of students (a treatment group), and comparing these students with a control group, may result in stronger evidence of student improvement, although this experimental design is difficult to implement within public school systems.

3. Development of promising models (not replication of models, since no project can be truly replicated, given differences in local implementation, characteristics, cultures, and populations) could be useful to teacher preparation programs and to current teachers and instructional leaders.

4. Professional learning communities, teams, or networks prove useful and productive if they include: teacher portfolio development work; shared course portfolios of peer-reviewed curriculum and assessment; assessment of student work; and are supported and valued by the school leadership and collective staff.

While findings for Cohort 1 based on the external evaluation had the advantage of multiple data sources, the overall findings for cohorts 1-6 point to consensus about what worked, what barriers need to be tackled, and what outcomes might be expected from future projects. As findings suggest, projects will likely result in greater impacts to teacher quality and student achievement if they are implemented at the school/district level, if interventions are applied through teacher engagement across grade level(s) and aligned school-wide to be consistent with school goals.

To effect real change in teacher behaviors and improve student achievement, principals and teacher-leaders must be committed and deeply involved over time in the implementation of new ideas resulting from Title II projects.

Developing professional learning communities, providing peer coaching and mentoring, and increasing school-wide support, are critical to the success of future projects.

Cohort 7 Overview

In 2009 the HECB funded six projects with multi-year Title II awards (called Educators for the 21st Century), following a significant revision of the request-for-proposals' process. Those who submitted proposals to the program were encouraged to broaden focus to include mathematics, science, English, and content area reading. One of the awarded projects, College Readiness in Science Partnership (WWU), will build on previous work accomplished through the HECB College Readiness Pilot Project. WSU's Riverpoint Advanced Mathematics Partnership will use the newly developed College Readiness Standards in mathematics to improve teachers' knowledge of the standards, increase mathematics content knowledge, improve practice, and improve ability to use formative assessment. Seattle University's Mathematics and Science Endorsement Academies will focus on improving teacher quality through a teacher endorsement program in biology, middle level mathematics, or secondary mathematics. The granting of multi-year awards was one measure taken to increase likelihood of school-wide and state-wide impact. The specific cohort 7 projects found in Appendix A – Overview of HECB Title II Projects represent a new effort to shape proposals with elements that are likely to have a greater effect on teacher quality than have past projects. An examination of best practices in professional development may help to provide context for the past Title II projects.

Professional Development Best Practices and Models

"Professional development should build teacher content knowledge. It should align with the standards and curricula teachers are expected to teach. It should enhance teachers' knowledge of teaching practice, both theoretical and practical. It should be ongoing and job-embedded, not brief and external. It should include teacher collaboration, build leadership, and reflect teachers' input about their needs. It should help teachers use data, perhaps by examining student work" (Noyce, 2006, 36). According to Noyce, however, professional development activities do not go far enough in connecting professional development and changes in teacher behavior to student learning. The goal of professional development for teachers and other players working with students should be to increase student learning. A review professional development models and best practices can inform and guide the design and implementation of teacher-training in the future.

Unfortunately, few professional development initiatives specifically establish processes for gathering evidence of student learning. It is difficult to measure student outcomes since the intervention is being taught to the intermediary (the teacher). Other variables make measuring student outcomes challenging – variation between teachers, external factors that affect students' learning, different district or school priorities, and even changes in leadership or curriculum can have a profound effect on the teacher's ability to make changes and the student's ability to learn.

A discussion about best practices in teacher professional development can hardly begin without some discussion of what makes for a quality teacher. This is some of what we know about teacher quality relevant to the HECB Title II project review (Cogshall, 2007; Garet (2001); National Center for Educational Accountability; National Comprehensive Center for Teacher Quality):

- The teacher's intellectual ability, specifically verbal ability, and a depth of knowledge enable teachers to present curriculum in a variety of ways, communicating in a clear, compelling manner. This influences what students learn.
- It is difficult to find significant correlations between formal teacher education and teacher effectiveness; however, teachers with greater subject matter knowledge tend to ask higher-level questions, involve students in the lessons, and allow more student-directed activities.
- Experience matters. Experienced, effective teachers tend to know and understand their students' learning needs, learning styles, prerequisite skills, and interests better than less experienced teachers. They are better able to apply a range of teaching strategies and demonstrate more depth and differentiation in learning activities.
- The ability to engage and motivate students effectively is an important element of quality teaching. The focus here is on how students experience school, rather than on what teachers do. Effective teachers are motivational leaders. Their enthusiasm for learning and for the subject matter under study has been shown to be an important factor in student motivation, which is closely linked to student achievement.

- Most of what makes a teacher effective are the "soft" personal attributes that are much harder to measure. Seven personal attributes of effective teachers from Teach for America (TFA) research are:
    - High achieving: A history of success, no matter what the endeavor.
    - Responsibility: Rather than blaming others or circumstances, the individual takes full responsibility for achieving a positive outcome.
    - Critical thinking: The individual reflects about the linkages between cause and effect instead of simply reacting to the effect.
    - Organized: The individual is able to juggle multiple tasks successfully.
    - Motivating: The individual is able to influence and motivate others to action, as evidenced by effective leadership in extracurricular activities such as student run organizations or athletic teams.
    - Respectful: The individual assumes the best about people, especially people in low-income communities.
    - Shares the goal of the organization: The individual wants to work toward TFA's mission of eliminating educational inequities.

  (www.teacherforamerica.org/corps/teaching/becoming_exceptional_teacher.htm)
- Effective teachers who consistently prioritize instruction and student learning as the central purposes of schooling communicate an enthusiasm and dedication to learning that students reflect in their own behaviors and practice.

For more detailed information on teacher quality see Appendix B.

A review of research on professional development best practices and successful models (Garet, 2001; Goe & Stickler, 2008; Noyce, 2006) suggests the following indicators, based on the assumption that "teacher quality" is directly connected to student achievement.

- For a truly systemic approach to improve learning, staff development should be content-based, aligned with curriculum and assessment, focused on student learning, and sustained over time, with collaboration among teachers and administrative support. Sufficient time must be allowed for change to occur.
- Professional development must be more than a one- or two-day workshop. It must dig deeper and may take time before the effects are visible.
- Teacher learning is contextual to the classroom and teaching. Professional development should assist teachers in preparing for the classroom; evaluation of professional development should connect to newly learned teaching behaviors, strategies and interventions, and/or curriculum delivery observed in the classroom.
- Many teachers don't know how to do what research suggests should be done. They don't know how to convert information into action. Because they don't know what quality teaching looks like, they have no vision of themselves performing it. And without a vision, they can't produce it. Teachers need models and specific how-to ideas. Teachers must be encouraged to drill down beyond the words, i.e., "what does this really mean for practice?"
- Learning subject matter and how to teach it must come together. Staff development should integrate both and provide more depth. A scattershot approach to staff

development, i.e., a workshop here, a seminar there, is distracting and much less effective than a long-term, depth-oriented approach.

- Professional development is really about teachers' experiencing and internalizing new concepts and strategies. Teachers and leaders must make a commitment to strengthening practice throughout a teacher's career.
- Attempts to standardize curriculum delivery often work against quality teaching. We should upgrade the skills of teachers rather than try to "teacher proof" the curriculum.
- There is a positive relationship between student achievement and how recently an experienced teacher took part in a professional development opportunity such as a conference, workshop or graduate class. More research on this connection would be helpful to the design of professional development programs.
- Effective teachers invest in their own education. They model to their students that education and learning are valuable by taking classes and participating in professional development, conferences, and in-service training. They discuss their participation in these activities with students in a positive manner.

Professional development that influences teacher behavior cannot be viewed in isolation from the system in which they work. Schools and districts have cultures that may support or ignore teacher development and system change. Systemic issues that are likely to impact professional development initiatives include the following:

- The organization and culture of a school can have a significant impact on the quality of teaching. To improve teacher quality, we must look at the instructional capacity of the entire school.
- Teacher quality depends on the system in which teachers work. For quality teaching to occur, the system should be in alignment.
- Administrators play a major role in determining the quality of teaching that occurs in that building. A strong, effective teacher may have little impact on student learning in a dysfunctional school with little administrative support.
- Some schools have formed Professional Learning Communities, where teachers meet regularly to share ideas about what is working and what is not, and to expand their knowledge and skill sets. This is consistent with research that lists collegiality and collaboration as earmarks of effective teachers.
- Improving the quality of teaching requires that schools develop a philosophy that supports inquiry, deep content and seeing relationships. Change must be system wide, not just about improving individual teachers.
- Teacher evaluations affect quality. Are evaluations designed and conducted in a way that contributes to quality instruction?
- Inconsistent educational policies have a negative effect on quality teaching.
- Teaching a grade level or subject for which a teacher is not certified or has little training may convert a highly qualified and capable teacher into an ineffective one.
- There must be a culture of high expectations for students and teachers. Does the school value teacher learning, collegiality and cooperation?

Most professional development projects tend to show some success with certain elements of teacher improvement. For instance, professional learning communities at the school and grade level may be highly successful in some schools and with some grade levels.

Summer institutes and other on-going activities may be successful *if* teams from schools attend and then establish in-school teams to implement plans and strategies that are consistent with the school initiatives and supported by leaders.

However, most professional development programs for K-12 teacher quality improvement represent somewhat isolated efforts that demonstrate pockets of success in achieving some project goals. No single effort can be touted as an unquestioned model of success. This is an area where we continue to work to define excellence.

Center of Excellence Model

The 'center of excellence' model is based on a business model of relevant "clustered" industries and resources that provide support for industries in the cluster. Washington State community and technical colleges have developed the center of excellence concept by awarding funding to proposals that are able to demonstrate excellence and continuous quality improvement in providing resources and technical support to specific industry clusters.

In Washington State, centers of excellence are intended to be flagship colleges that build and sustain Washington's competitive advantage through statewide leadership. Each center focuses on a targeted industry that drives the state's economy and is built upon a reputation for fast, flexible, quality education and training programs. A targeted industry is identified as one that is strategic to the economic growth of a region or state.

Representatives from the industry guide collaborative and coordinated statewide education and training efforts to build a competitive workforce in a global economy. Centers in Washington State agree to:

- Maintain an institutional reputation for innovation and responsive education and training delivery to their targeted industry.
- Act as a broker of information and resources related to their targeted industry for industry representatives, community-based organizations, economic development organizations, community and technical colleges, secondary education institutions, and four-year colleges and universities.
- Translate industry research into best practices.
- Provide system coordination, coaching, and mentoring to assist in building seamless educational and work-related systems.
- Build a competitive workforce for driver industries in Washington State.

(www.sbctc.ctc.edu/College/_e-wkforcecentersofexcellence.aspx)

This model could well lend itself to a collaborative initiative to create state resources for professional development for K-12 educators. Such an entity could serve as a flagship organization for educators seeking professional development, technical assistance, research, and informational resources that benefit their professions and their careers.

Outside of Washington, an exemplar state using a center of excellence model to improve teacher quality is South Carolina. The Commission on Higher Education has established a number of statewide resource centers, called centers of excellence, that address the needs of schools and districts. These centers (colleges and universities) engage their colleges of education and departments of arts and sciences, to become more actively involved with low performing schools and districts. Each center is required to demonstrate a commitment to offering sustained, high quality professional development programs in its area of expertise, and in alignment with state policies and initiatives. Host institutions in South Carolina are asked to demonstrate funding commitment and to engage in sound research of intervention strategies to improve student achievement.

Professional Development Initiatives in Washington State

A review of various Washington State educational initiatives and organizations involved in impacting teacher improvement and student achievement suggests a potential opportunity to align efforts to achieve common goals. Several major projects which specifically focus on college readiness are identified. Organizations that may play a part in such an initiative could be some or all of the following (listed in alphabetical order):

College Spark Washington
Mission: to fund programs that help low-income students become college-ready and earn their degrees. This organization makes grants to organizations and institutions throughout Washington State that help low-income students improve their academic achievement, prepare for college life and graduate from college. Grantees include community organizations, colleges, baccalaureates, other educational institutions, and public agencies. Since 2005 College Spark has funded 72 grants in the state and funded participation in *Achieving the Dream* for six Washington community colleges.

HECB English and Science College Readiness Projects
The English and science college readiness projects were comprised of university and college faculty and high school teachers establishing definitions for student college readiness in English and science. The preliminary college readiness definitions were piloted at four high school sites by teams of teachers/faculty. Project participants developed strategies and adapted curriculum that support classroom teachers in integrating college readiness standards into existing high school curriculum.

HECB GEAR UP College Readiness Educator Program
HECB manages the Washington State GEAR UP Program which consists of two school-based projects. The first is the federally funded Scholars Projects, and the second is a state-funded expansion project, the GEAR UP for Student Success program. In June 2010 the HECB began year-long funding of professional development for GEAR UP educators on student college readiness interventions in English and in mathematics.

Partnership for Learning
The Partnership for Learning (PFL) is an independent, statewide nonprofit organization that communicates about Washington State's school improvement efforts and the need to prepare all high school graduates for the demands of today's global society. PFL provides practical information and tools to schools, policy makers, community leaders, parents, teachers and students. A recent initiative supports improvements in teacher quality.

Washington State Office of Superintendent of Public Instruction Initiatives and Professional Development Resources (OSPI)
OSPI offers various professional development programs, such as the Title II Part B Mathematics and Science Partnership program. OSPI also offers a host of resources designed to assist in improving teacher quality, including opportunities to be nationally certified. OSPI's web site states, "Effective professional development builds cultural

competence, examines beliefs, and challenges institutional barriers that act as obstacles to equity for all students." Most importantly, OSPI has been a leader in identifying the EALRs and GLEs, providing critical guidelines for classroom teachers.

State Board for Community and Technical Colleges (SBCTC)
The SBCTC has three primary overarching goals: Strengthen the colleges' system to meet demands for a well educated and skilled workforce; achieve increased educational attainment; and use technology, innovation, and collaboration to meet demands of the economy and improve student success. The Transition Math Project (below) and several related projects are administered by SBCTC.

Transition Math Project
The SBCTC partnered with other state entities and the Bill & Melinda Gates Foundation to define the college readiness standards in mathematics. This collaborative project has engaged a wide range of community-based local projects through a request-for-proposals process. Subsequent years of funding continue to provide for capacity building via professional development activities.

University of Washington's Center for Teaching and Learning
This entity brings educators together for inquiry, innovation, and renewal through four connected projects and programs: Teachers for a New Era addresses teacher education programs; the Partnership with Ackerly Family Foundation supports the UW College of Education with resources to support teachers; Strengthening and Sustaining Teachers (SST) is a vehicle for improved teacher preparation programs, supporting new teachers, and providing ongoing professional development; and Teachers Learning in Networked Communities (TLINC) is a web-based resource for teachers and anyone needing access to teacher resources.

Other programs, agencies and organizations are also deeply involved in improving teacher quality in specific ways such as technology, academic subject areas, and special populations. However, the broad missions and the college readiness goals of the organizations identified above could 1) lead to synergistic efforts to broaden the impact of Title II projects and 2) generate a coordinated effort to improve education for all students.

Future Title II Projects

Based on what we know about improving teacher quality and student achievement, the following recommendations would likely benefit future Title II projects:

- Focus on college readiness projects, building on work that is already being done in Washington State.
- Design assessment processes and collect data to determine if students and teachers are learning more because of the intervention.
  - Use small pilots that have been thoroughly evaluated to move larger initiatives forward.
  - Identify assessment procedures that have worked to demonstrate student learning (state assessment, classroom based assessment, student self-assessment, portfolios, etc.).
  - Consider treatment and control groups of students to be able to demonstrate effectiveness of the intervention.
  - Monitor the changes in teacher knowledge and behavior. In addition to self-reflection, utilize direct assessment and observations to provide a more complete picture of what is really happening.
  - Designate a portion of the project budget for assessment activities or build assessment into the project design (e.g., teachers use assessment to determine success and/or need for change).
  - Develop systems within schools that support teacher improvement. This could include establishment of student assessment data collection activities whereby teachers collect and share data, review student progress, and share strategies to improve student achievement, including discussions of what works and what doesn't.
- Support the development of professional learning communities.
  - Teachers benefit from meeting together as a group for monthly meetings to discuss what they are learning, how learning has affected students, what strategies are effective, and how to adapt to improve student learning.
  - Participants benefit from analyzing student work samples, to increase their knowledge of content area and to assess impact of instruction.
  - In addition to providing professional development on 'classroom strategies', training should also include curriculum development. Projects that include instruction in subject matter content and instructional strategies result in deliberate and purposeful changes in practice.
  - Development of beyond-school professional networks as part of the professional development might be beneficial toward change in practice.
  - Professional development targeting an entire school (teachers *and* paraprofessionals) increases likelihood of whole-scale change.
  - Professional development is stronger when training is focused on a single curriculum and/or strategy to be used by the entire school staff.
  - Classroom visits by peers, coaches, and mentors to observe teachers and paraprofessionals can serve to support practitioner change.

        - Collaborative inter-organizational PLCs (such as P-12 and higher education) may require more time than homogeneous groups to establish roles, purpose and processes.
    - Projects are likely to succeed if they are school-driven; professional development activities can be tailored to the geographical region, the unique culture, and characteristics of the school.
        - Successful projects align with and support intensive school-based, school-wide reform efforts to positively influence teacher quality at the classroom level, i.e., efforts are not isolated from school and state goals.
    - Evaluate multi-year project results to determine effectiveness in improving teacher quality.
    - See also Other States' Title II Programs (Appendix C).

Washington State's HECB Title II program could benefit from the development of a virtual web-based network of professional development resources specifically for current classroom teachers and leaders, using a variation on the Center of Excellence model. This could bring together interested partners already engaged in professional development activities to play key roles in developing and disseminating teacher resources, delivering professional development activities, and informing teachers and educators about other opportunities to improve teaching and learning. Such a model would support the leveraging of funds and provide a one-stop-shop (virtual or real-time) for teachers and educators in Washington State.

Future studies

As the education community works to improve schools and widen opportunities for students in Washington State, efforts will increase to acquire knowledge that directly improves student learning. Information that clearly links teacher quality improvement to student achievement continues to be sparse and tenuous. By designing projects that specifically address improvements in teacher quality and student achievement, and by collecting data that leads to research-driven professional development, we will learn more about what it takes for schools to be successful in preparing students for their futures. Washington State can potentially be a national leader in collecting and using data that supports the connection between teacher professional development and student achievement – an area of research that is sorely lacking.

Finally, any effort to improve teacher quality and student achievement will require sustained conversations among policymakers, business partners, and organizations whose mission is to improve student achievement. Despite challenges, there is reason to look positively on approaches that help people collaborate to improve teaching. Supporting joint efforts can significantly accelerate improvements in student learning. Washington State's students will ultimately benefit from investments of time and energy spent on activities that improve both teaching and learning.

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Appendix A – HECB Title II Project Overview
Project 1

Fiscal Agent:	Cohort 1 – Eastern Washington University
Project Name:	Northeast Washington Consortium of Rural Schools Math Project
Contract Period:	4/1/2003-9/30/2004
Subj. Area Focus:	Math
Project Description:	Goals: 1) Students will be able to use in-depth mathematical content and processes. 2) Teachers & paraprofessionals will understand and apply mathematical concepts, pedagogical strategies for effectively teaching mathematics, and methods for using collegial support to improve student learning. Objectives: 1.1) Participating districts will demonstrate an improvement on targeted mathematics EALRs. 30% more students will meet standards in these targeted areas than in the baseline year. 1.2) Improved math achievement for all students will be demonstrated by 30% increases in level 2,3 and performance on 4th, 7th and 10th grade assessments. 2.1) Teachers will demonstrate increased competence at effecting mathematical learning of all students through instructional practices focused on in-depth math content and student thinking. 2.2) A sustainable network of teachers, paraprofessionals and principals for the purpose of increasing student achievement in mathematics will exist in Northeastern Washington. Activities: Classroom instruction; Project-oriented collaborations; E-mail and phone conversations as needed; 3 summer workshops; 3 Saturday workshops; up to 24 hours of funded meeting time within districts.
Results Description:	Project intended to: 1) Give teachers a clearer perspective on the nature/orientation of learning in the EALRs/GLEs that would motivate them to work to teach in ways that more effectively address that nature/orientation. 2) Show through experience that collaboration is valuable because it is supportive and can develop into an ongoing form of professional development. 3) Project activities will result in observed improvements in or strengthening of teachers' teaching of math and observed and formally measured growth in student learning/achievement (e.g. increased WASL scores). Results: 1) Intention 1) was realized at a beginning but nontrivial level, as evidenced by observations by project university faculty and by teachers discussions. 2) Teachers reported and demonstrated that they had learned that collaboration is valuable.

Extent to which Goals were Accomplished/ Internal Evaluation:	Teachers altered instructional and assessment to align with EALRs, GLEs by requiring students to communicate reasoning and understanding and by collaborating with other teachers - Source: Project Final Report.
Lessons Learned:	Lessons: 1) Grant activities did not result early enough in the year in instructional changes that would have a pronounced impact on student learning that could be demonstrated on the WASL or other assessments. Participant teachers reported in the closing workshop that they felt they'd be much better prepared to make instructional changes the following year, and did not expect to see significant increases in student learning until then. Increased teacher awareness of student reasoning skills required to meet GLEs.

Project 2

Fiscal Agent:	Cohort 1 – Eastern Washington University
Project Name:	Supporting Excellence in Paraprofessional Classroom Practice
Contract Period:	4/1/2003-9/30/2004
Subj. Area Focus:	Math & Reading
Project Description:	Goals: 1) Paraprofessionals develop skills, knowledge and understandings of best strategies that work in reading and math and connect them to Washington state standards and EALRs that guide instructional practice. 2) Students taught by paraprofessionals gain initial understandings of how to gain independence in reading and math. Objectives: 1.1) Paraprofessionals and community college students in the target cohort successfully complete 216 credit hours of introductory college level instruction in reading and math and meet state requirements for teacher certification, including knowledge of Washington state standards and EALRs. 1.2) Paraprofessionals and community college students demonstrate through guided and independent practice, evaluated by master teachers and education professionals, their growing expertise in teaching methods for reading and math instruction. Activities: Academic coursework, guided practice, demonstration, reflection and assessment, further practice, independent practice, and final evaluation during Friday and Saturday classes. Activities are designed to move students from academics to classroom apprenticeship, to reflection, back to academics, again to the classroom and so on.

Results Description:	Results: 1.1) 21 participants completed courses in reading education and math content and education with an average GPA greater than 3.2, and a pre-and post-test on EALR knowledge showed that students went from little or no knowledge of EALRs to explicit knowledge of EALRs and how they could be included in lesson plans and teaching. 1.2) Para-professionals worked through guided collaborative, and independent practice in teaching reading and math. Eight self reported changing some of their classroom practices. A post-test of math knowledge showed significant change in participant content knowledge for teaching K-8 math. 2.2) All 21 of the final cohort were observed by peers and by R. Whitman. Observations indicate that in some classes objective 2.2 is being met, however there is no evidence that these practices or abilities necessarily transfer to higher WASL scores.
Extent to which Goals were Accomplished/ Internal Evaluation:	Paraprofessionals reported that they saw themselves as "teachers" at the end of the year. Project did not measure student performance.
Lessons Learned:	Strength of the project was bringing coursework to the reservation, providing access to resources that were otherwise unavailable, developing paraprofessionals that can directly respond to native American students' needs.

Project 3

Fiscal Agent:	Cohort 1 - Heritage University
Project Name:	Heritage College Paraeducator Training Academy: Leave No Paraeducator Behind
Contract Period:	4/1/2003-9/30/2004
Subj. Area Focus:	Reading
Project Description:	Goals: 1) Develop, field-test and sustain a staff development delivery model (the consensus model) targeting paraeducators. Objectives: 1.1) Develop and deliver a 60-contact-hour/four semester credit course on instructional support for early reading to 30 highly qualified paraeducators. 1.2) Develop and deliver a corresponding series of 2 half-day staff development workshops to 30 highly qualified paraeducators and 30 of their supervising teachers. 3) Identify and train 3 highly qualified elementary teachers from the partner school districts so serve as adjunct professors at Heritage College to subsequently team-teach the Academy course. 4) Leverage the money provided by the grant.

	Activities: 1) Conduct train-the trainer's workshop, and 2) Conduct two Academy courses, with 15 paraeducators each, 60 contact hours offered @ 10 hours every other weekend for 12 weeks.
Results Description:	Purpose of the project was to provide training for paraeducators in pedagogy, teaming, and literacy training. The final report submitted by Heritage provided some participant data but did not describe results.
Extent to which Goals were Accomplished/ Internal Evaluation:	No results reported.
Lessons Learned:	No results reported.

Project 4

Fiscal Agent:	Cohort 1 - Saint Martin's University
Project Name:	Improving Instruction in Reading Comprehension through Learning, Teaching, and Collaboration
Contract Period:	4/1/2003-9/30/2004
Subj. Area Focus:	Reading
Project Description:	Goals: 1) To increase the content knowledge about the reading process and skills of teachers, principals, and paraprofessionals. Knowledge will be applied to improve instructional practices, which will in turn lead to improved student reading comprehension. Objectives: 1.1) Increase participant knowledge and understanding of the reading process. 1.2) Increase the variety of effective reading instructional strategies used. 1.3) Increase teachers' integration of reading and writing across the curriculum. 1.4) Engage teachers in a "model" of effective instruction that scaffolds their learning and supports and encourages inquiry-based teaching. 1.5) Increase students' reading proficiency through use of varied reading strategies.

	Activities: 1) Summer training institute for school teams of principal, teachers and paraprofessionals. 2) Ongoing activities included study groups, teachers observing and coaching each other, keeping reflective journals, networking among grade levels and across schools, monthly meetings to share challenges and insights. 10 monthly meetings. 3) Saint Martin's faculty conduct site visits, serve as mentors, demonstrating lessons, coaching and offering feedback.
Results Description:	Results: 1) Participants were exposed to a variety of strategies. Feedback indicated that participants found them useful, were incorporating them in their instruction, and found the resources extremely helpful. 2) Informal feedback indicated that participants increased their knowledge and use of reading strategies in the classroom. 3) Teachers observed changes in students' learning. 4) Teachers' confidence in what they were doing increased.
Extent to which Goals were Accomplished/ Internal Evaluation:	Some success with goals; all activities carried out. Observations not conducted, therefore some results inconclusive.
Lessons Learned:	Lessons: 1) Teachers were uncomfortable being observed while still learning. 2) Teachers didn't mind sharing, but were not ready to serve as mentors for each other. 3) Participants were able to share what they were learning. 4) One year is not long enough to make changes. Need time to build community and trust.

Project 5

Fiscal Agent:	Cohort 1 – University of Washington Seattle
Project Name:	Teaching for Understanding: Inquiry-based Mathematics Curriculum Development for Teachers in High-Need Local Educational Agencies on the Olympic Peninsula
Contract Period:	4/1/2003-9/30/2004
Subj. Area Focus:	Math

Project Description:	Develop grade appropriate curriculum unit reflecting one or more of the EALRs in mathematics; participants demonstrated teaching of the curriculum developed; participants submitted curriculum for peer review.
Results Description:	Participants developed grade-appropriate curriculum unit reflecting one or more EALRs; teachers demonstrated teaching skills and submitted curriculum for peer review.
Extent to which Goals were Accomplished/ Internal Evaluation:	Limited success due to low participation at in-person workshops and participant attrition.
Lessons Learned:	Success in developing curriculum, somewhat successful in assessing student work and developing collaborative teacher learning, less successful increasing content knowledge in mathematics.

Project 6

Fiscal Agent:	Cohort 1 – Washington State University Vancouver
Project Name:	Gorge Math Project: Next Steps
Contract Period:	4/1/2003-9/30/2004
Subj. Area Focus:	Math
Project Description:	Develop and implement a professional development program that addresses unique needs of students, teachers, and sites; provide school-wide assistance to nine school sites, to assist them in adopting and implementing programs and instructional strategies.
Results Description:	Participants developed and implemented professional development program based on school improvement plan goals; project provided school-wide assistance to 9 school sites to assist in implementing research-based projects.

Extent to which Goals were Accomplished/ Internal Evaluation:	Some success with teacher development of instructional strategies, based on pre- and post-assessment of teachers, teacher reflection, building-level data collection.
Lessons Learned:	Teachers identified personal teaching goals and reflected on yearly progress. Project requires more effort to demonstrate changes in WASL scores.

Project 7

Fiscal Agent:	Cohort 1 – Western Washington University
Project Name:	Helping Teachers in a High-need District Focus on Improving the Learning and Teaching of Mathematics
Contract Period:	4/1/2003-9/30/2004
Subj. Area Focus:	Math
Project Description:	Increase content knowledge of teachers, paraprofessionals and parent volunteers; increase understanding of sense-making and problem solving in mathematics; identify optimal learning environments; learn about the issues in mathematics education.
Results Description:	Attempted to deepen teacher, paraprofessional, and parent volunteer content knowledge in mathematics - difficulties with schedule and community engagement limited this project.
Extent to which Goals were Accomplished/ Internal Evaluation:	Some modest success with deepening content knowledge in math based on portfolio development; lack of success engaging all participants.
Lessons Learned:	External circumstances required revision of training schedule; low attendance at events. Tribal community culture required unique approaches and developing a culture of trust.

Project 8

Fiscal Agent:	Cohort 1 - Yakima Valley Community College
Project Name:	Sunnyside 'Pathways for Paraprofessionals'
Contract Period:	4/1/2003-9/30/2004
Subj. Area Focus:	Reading & Math
Project Description:	Goal was to increase instructional strategies and content knowledge of paraprofessionals
Results Description:	Final report not available
Extent to which Goals were Accomplished/ Internal Evaluation:	Final report not available
Lessons Learned:	Final report not available

Project 9

Fiscal Agent:	Cohort 2 – Central Washington University
Project Name:	Central Washington University, Chelan and Manson Partnership
Contract Period:	5/3/2004-1/15/2007

Subj. Area Focus:	Math & Science
Project Description:	Project designed to increase student achievement, review and align math and science curriculum, strengthen preparation of teachers, paraprofessionals, and administrators, to change and implement professional development, and to increase parental involvement.
Results Description:	2 summer institutes, 2 fall in-service days, site visits, video conferences, internet and a math/science endorsement program. Used learning communities and grant resources to develop, align and assess math and/or sciences curriculum. Written policies, rules and regulations for ongoing professional development school collaboration were not established. Participant teachers successfully prepared and conducted year long individualized action plans to enhance their math and/or science curriculum, using knowledge gained from their experience with this project. Project in-service presentations and summer institutes were used to share best practices and district progress for involving parents and community members in developing and implementing school improvement plans.
Extent to which Goals were Accomplished/ Internal Evaluation:	Twenty-two of 27 participating teachers received teaching endorsements in middle school mathematics and science.
Lessons Learned:	Changes in project leadership had an impact on results. No evidence of increased student achievement. Some indication of success implementing parent-child math night at school.

Project 10

Fiscal Agent:	Cohort 2 – Eastern Washington University
Project Name:	The EWU-Wellpinit Teacher Education Project
Contract Period:	5/3/2004-9/30/2006
Subj. Area Focus:	Reading & Math

Project Description:	Paraprofessionals and teachers develop skills, knowledge, and understanding of best strategies in reading and mathematics within context of EALRs and GLEs; students demonstrate improved comprehension and abilities to demonstrate thinking and demonstrate increased independence in reading and mathematics.
Results Description:	Paraprofessionals took courses in mathematics, Salish and educational psychology for credit. Also attended summer institute (which teachers attended too). Math pre- and post- tests showed increase in math scores. Conclusion: participants improved understanding of math and how to teach it. Developed inquiry-based curriculum modules. Unit lesson plans developed include a Math and Science Star Stories unit, a language arts unit on Coyote stories, and a Greatest Generation unit on ancestors who served in the military. Participants completed college level instruction and demonstrated knowledge of Washington State Standards, EALRs and GLEs. Participants have demonstrated in their curricula that they have incorporated what they've learned. Observations of participants demonstrate increased reading and math skills. Observations of paraprofessionals demonstrate impact of professional development on classroom practice. Teachers have not given consistent attention to characteristics of effective reading instruction. Students have had the greatest success with Salish, perhaps because the school exerts the least degree of control over this area of the curriculum.
Extent to which Goals were Accomplished/ Internal Evaluation:	Fairly effective project, particularly in connecting to local community through Salish language and in engaging students through their culture.
Lessons Learned:	Reading instruction might require more explicit instruction. Connecting to native community requires time to establish trust and to integrate math strands into curriculum.

Project 11

Fiscal Agent:	Cohort 2 -Heritage University
Project Name:	Reading Instruction for Teachers of ELL Students in Dual Language and Content ESL Programs

Contract Period:	5/3/2004-9/30/2006
Subj. Area Focus:	Reading
Project Description:	Goal was to improve teacher and paraprofessionals skills in supporting ELL students; to develop customized courses; to train instructional leaders to coach and model protocols; to train 40 teachers in protocols; to develop a model that leads to improved performance of ELL on state reading tests.
Results Description:	Enhanced knowledge and skills of teachers to support efforts to meet the needs of ELL students; develop customized courses integrating Sheltered Instruction Operational Protocol (SIOP) as instructional framework; and trained teachers to become coaches.
Extent to which Goals were Accomplished/ Internal Evaluation:	Project objectives achieved, although evidence of student achievement is lacking.
Lessons Learned:	The required coaching and peer observation were difficult to maintain throughout school year; lack of focus on content instruction.

Project 12

Fiscal Agent:	Cohort 2 – University of Washington Seattle
Project Name:	Building Professional Learning Communities in Mathematics: Enlarging Content with Natural Resources Applications
Contract Period:	5/3/2004-12/31/2006
Subj. Area Focus:	Math
Project Description:	The goal of the project was to teach teachers inquiry-based learning, so they could to assist students' learning of mathematics by focusing on mathematical solutions to problems drawn from real-life situations in nature.

Results Description:	Teachers were enthusiastic about using real life situations for teaching math. Observed that it took even the most receptive teachers two to three years to successfully learn how to assist students to frame a problem, develop and use appropriate math skills and more. Project formed professional learning communities of participants and attempted to nurture cooperation and communication throughout the 2004-05 and 2005-06 academic years. Instructional team members visited several classrooms and provided onsite support for teachers.
Extent to which Goals were Accomplished/ Internal Evaluation:	Informal survey of teachers at the end of the two summer institutes. Periodic assessments at end of each day at summer institutes. Positive letters from participants; some teachers had difficulty grasping math concepts used in inquiry-based learning models. Teacher to teacher communication within and between learning communities facilitated change by providing role models and leadership. A level of communication continued without the initiative of the instructional team through friendships established at the summer institutes and group meetings.
Lessons Learned:	Improvements in student performance were not observable until after the project had ended, and, even then, promised to be complex and expensive to assess. Given the demands associated with advancing academic standards, limited school budgets and the changing composition of student populations, teachers in the project reported that they often felt overwhelmed in "just doing their job" and had little time, energy or support for implementing curricular or instructional changes in their classroom. They suggested the inclusion of their administrators in this training. Project would have been more effective if 'teams' from schools had participated. Some participants lacked elemental mathematics content and were limited in ability to implement. A major challenge was scheduling.

Project 13

Fiscal Agent:	Cohort 2 – University of Washington Seattle
Project Name:	North Central Washington Reading Consortium
Contract Period:	5/3/2004-9/30/2006
Subj. Area Focus:	Reading

Project Description:	Goal was to increase teaching skills of teachers in content-area reading; increase instructional leadership skills of teachers; encourage development of learning communities within and across districts. Desired outcomes were to increase participant content reading knowledge, increase teacher skills in reading instruction, to increase student performance in reading, and to create school-based teams to initiate mechanism for school-wide reform in reading. Two summer institutes each summer. On-line teaching and learning community. Academic year classroom observations and after-school professional development sessions.
Results Description:	Bridgeport High School: Teachers have implemented reading strategies and trained other teachers. Wright Elementary School: Teachers instituted reading progress monitoring using DIBELS and adopted a reading instruction program. Students showed improvement. Bridgeport Middle School: Teachers adopted new reading curriculum.
Extent to which Goals were Accomplished/ Internal Evaluation:	Some evidence of effectiveness based on teacher self-report and WASL scores in some schools.
Lessons Learned:	What worked: peer observations, inquiry project to investigate issues related to students' reading practice, daily advisory period with students, teaching of common core reading strategies, students reading with partners, increased reading instruction in kindergarten, student coaching for school survival dispositions and skills. Scheduling of professional development workshops was difficult; some teachers did not attend due to geographical challenges. Some participants indicated that they often felt overwhelmed by the demands of helping students.

Project 14

Fiscal Agent:	Cohort 2 - Yakima Valley Community College
Project Name:	Si Se Puede College for Paraprofessionals

Contract Period:	5/13/2004-12/31/2006
Subj. Area Focus:	Reading & Math
Project Description:	Goal was to increase reading and mathematics content knowledge of paraprofessionals; to increase instructional skills of paraprofessionals; to increase paraprofessionals' knowledge of college, financial aid, and to develop an educational plan; to increase teachers' skill in creating team-approach to teaching, including having paraprofessionals deliver instructional content; to create and deliver a sustainable hybrid online professional development model.
Results Description:	Provided on-site courses in reading and math content knowledge. Supervising teachers took an active role to assist paraprofessionals in preparing and studying for ETS test. Developed sustainable hybrid online professional development model. Increased the quality of paraprofessionals in Grandview and Sunnyside School Districts (helped them pass ETS exam, earn college credit). Contributed to an increase in student reading scores (WASL scores increased in correlation with Title II paraprofessional development activities). Anecdotal information from supervising teachers showed that paraprofessionals infused new instructional skills in working with children in the classroom. 100% of paraprofessionals developed career and educational goals. Developed sustainable paraprofessional training models.
Extent to which Goals were Accomplished/ Internal Evaluation:	WASL reading and MAP scores correlated with professional development activities; most participants seek Associates degree or Bachelors degree following professional development. On-line tutorial and courses developed by partner institutions.
Lessons Learned:	Project connected with existing professional development offered through OSPI and other entities. Originally 91 participants in the program, but only 75 continued with program. Attrition due to changes in personal situations.

Project 15

Fiscal Agent:	Cohort 3 - Saint Martin's University

Project Name:	Math for All Students
Contract Period:	2/1/2005-1/31/2007
Subj. Area Focus:	Math
Project Description:	Goal: teach teachers to assist struggling mathematics students by: increasing teacher math knowledge and skills; establishing community learning network; increasing teacher knowledge of standards, assessment requirements and strategies for struggling students. Summer institute, one-day workshops during school year, community learning network.
Results Description:	Teachers learned how to use software in mathematics curriculum; teachers examined curriculum in terms of EALRS, GLEs.
Extent to which Goals were Accomplished/ Internal Evaluation:	Pre- and post-participant survey with positive results. Samples of participant work.
Lessons Learned:	Teacher self-reports suggested teachers benefited from activities. Lack evidence of impact on student achievement.

Project 16

Fiscal Agent:	Cohort 3 – University of Washington Tacoma
Project Name:	Project BERS: Building Essential Reading Skills (BERS) of North Central Washington Middle and High School Students
Contract Period:	2/1/2005-9/30/2006
Subj. Area Focus:	Reading
Project Description:	Goal was to build capacity of middle school teachers and staff to screen, diagnose, monitor, and measure outcomes in reading; build capacity of teachers to apply reading instruction to middle school students with reading difficulty; examine effectiveness of intervention; conduct reading intervention summit for special education and Title I teachers.

Results Description:	Pre-and post- tests of teachers' ability to use reading assessments found large, statistically significant gains. Participants' reading instruction quality improved. Degree to which teachers implemented programs with fidelity impacted student performance. Strong, self-reported capacity to provide high-quality reading instruction and assessment to middle school students (participant pre- and post-survey showed statistically significant gains). Qualitative data from educators who participated in the summit were positive.
Extent to which Goals were Accomplished/ Internal Evaluation:	Teachers increased ability to assess student by 40-50%; developed site-based systems to monitor student progress; significant gains in student test scores.
Lessons Learned:	Teachers learned how to use reading assessments and to apply interventions appropriately; teachers and schools developed internal systems for collecting data and using data across teaching staff.

Project 17

Fiscal Agent:	Cohort 3 – Washington State University Pullman/Spokane
Project Name:	Reading the Word and the World: Preparing Teachers to Scaffold Reading Experiences for Diverse Learners
Contract Period:	2/1/2005-4/30/2006
Subj. Area Focus:	Reading
Project Description:	Teachers were introduced to scaffolding concept and skills through teachers-teaching-teachers model. Lessons learned were disseminated to 427 pre-service and in-service teachers and related staff. On-line professional development. 7 week web-based graduate level course, preceded by a one week introduction broadcast. Project used Scaffolded Reading Experiences.
Results Description:	Web-based course was launched with 14 teachers who completed all assignments. Week-long introductory workshop, followed by scaffolding resources disseminated locally via wide range of strategies and methods. Examples of participant assignments demonstrate learning. Other school districts have asked to work with WSU on similar projects.

Extent to which Goals were Accomplished/ Internal Evaluation:	Little consistent evidence to demonstrate level of success; no connection to student achievement was demonstrated.
Lessons Learned:	The on-line component of the project held some promise for engaging teachers about their practice.

Project 18

Fiscal Agent:	Cohort 3 – Washington State University Pullman/Spokane
Project Name:	Partnerships in Inquiry
Contract Period:	2/1/2005-8/31/2007
Subj. Area Focus:	Reading & Math
Project Description:	Goal was to create and develop professional learning teams (PLT) in reading and/or in mathematics across grade levels, as determined by individual schools in the project; produced six teaching digital videodisks for reading and math and disseminated DVDs throughout Washington schools. Constructed and promoted professional development process at each school to positively affect student learning. Disseminated project PLT model to local, regional, state and national levels.
Results Description:	Schools incorporated project activities into professional development plan. Notable was that model was not replicated but rather customized for each school involved in the project. DVD provided introduction to PLT concept. As a result of implementation of PLTs, student intervention strategies increased, use of diagnostic tools increased (Fife Middle School), differentiated instruction increased (Lincoln Middle School), increased teacher knowledge of GLEs and increased student performance on assessments at lower grades (Markham). Activities resulted in increases in trust and respect and mutual responsibility for student achievement (Tapteal teachers).
Extent to which Goals were Accomplished/ Internal Evaluation:	Elementary schools reported significant improvement in communication among staff. Principals reported that teachers became more student focused. MAP test shows improvement in student math learning. Teachers more thoughtful about their teaching and student learning. Teachers have greater understanding of math.

	Greater trust and willingness to take risks.
Lessons Learned:	Changing leadership during the project impacted outcomes. PLT models difficult to measure across schools, since each was customized to fit the school's culture. Fife reported strong improvement in beginning teachers' skill and knowledge due to PLT work. Revising professional development process was based on learnings and experiences at workshops.

Project 19

Fiscal Agent:	Cohort 4 – Educational Service District 112
Project Name:	Reading Achievement Now!
Contract Period:	7/1/2005-2/28/2009
Subj. Area Focus:	Reading
Project Description:	Increase content knowledge of teachers and principals in reading; increase teaching skills of teachers in core subject of reading; increase instructional leadership skills of principals and teachers; build capacity for reforms in reading instruction.
Results Description:	Teacher leaders modeled content-specific strategies. Participants developed personal action plans for their teaching. Teacher leaders reported they continued to learn and improve their own practice as they helped new participants. Sustained professional development supported by grant staff site visits. Teachers met, discussed, read, experimented and studied as they learned new ways to embed reading/learning strategies in their classrooms. Principals were bought in on the purpose of the grant and appreciated the connections made among teachers regarding reading in the content areas. Teachers observed and demonstrated in each other's classrooms. Participants conducted staff development sessions that have facilitated collective efforts to embed reading and learning strategies across the content areas in important ways. Reported success in connecting the reading/learning strategies to state learning standards has been evident when participating teachers have shared these strategies at staff development sessions. Grant has facilitated several types of learning communities (within content areas

	across schools and vice versa). Response to learning communities has been positive; some teachers reported that teachers who had been previously viewed as recalcitrant became collegial and open-minded due to the activities in the project.
Extent to which Goals were Accomplished/ Internal Evaluation:	Teachers reported increased focus on how students learn; teachers took responsibility for leading other teachers at their schools. Some evidence of increased student achievement, particularly in classroom based assessment and informal assessment of student attitudes. Evaluative activities included pre- and post-surveys, on-site teacher interviews, student pre- and post-surveys, and on-site observations of staff development sessions. Final report suggests that 10 Teacher Leaders were developed from eight school districts. Evidence includes development of Teacher Leader Action Plans and a number of subsequent building/department long-term plans to infuse literacy goals into school improvement plans. A number of new professional learning communities (PLC) are reported to focus on literacy.
Lessons Learned:	One teacher noted some challenges to implementing strategies (student apathy, low motivation and lack of time due to responsibilities at school). Some participants indicated that they often felt overwhelmed by the demands of helping students improve reading and gaining content area knowledge. The final report suggests that Teacher Leader Action Plans were successful in 1) development of PLCs focused on literacy, 2) linking professional development outcomes to school improvement plans, 3) changing classroom practice in participants' classrooms.

Project 20

Fiscal Agent:	Cohort 4 – Washington State University Pullman/Spokane
Project Name:	Parents and Teachers Negotiating Reading Strategies: The Partners Project
Contract Period:	8/16/2005-8/16/2006
Subj. Area Focus:	Reading
Project Description:	Help teachers involve parents in reading achievement of their children. Provide a model for language minority learner/parent involvement in schools. Develop responsive, effective, technologically-enhanced partnerships between teachers and parents of

	English Language Learners. On-site visits to help teachers understand the project and the literature. Various dissemination activities. The electronic discussion forum served as an outstanding focus for sharing among teachers.
Results Description:	Interactive homework assignments were useful, effective and relatively simple tasks for school-to-home literacy connections. Parents expressed appreciation for better communication with teachers and a clearer understanding of the expectations of their child's school and the teacher. Project instituted use of technology in many forms as a connector for school and home and as a support for literacy. Making materials and resources widely available via the Internet and other public forums so that other teachers in Washington State and throughout the country can take advantage of what we have learned through this project. A small but active participant base that allowed project participants to try out a variety of strategies and deepen understanding of the successes and failures of the project. Participants emerged from the project with changed understandings, expectations, and skills regarding schooling, communication with parents, the effectiveness of using technology even if limited, and ways to creatively connect literacy tasks to student lives beyond school. The use of technology by teachers and parents to increase the reading achievement of their students. Teacher cohort groups were involved in the professional development of their colleagues that supported the development of instructional leadership skills of participants and led to additional in-service teachers, and thereby learners, being served. Battle Ground teachers scheduled an in-service day for their district to address ideas from both the HECB Reading grant and the Partners grant. A model of professional development in which teachers increase and share their pedagogical content knowledge.
Extent to which Goals were Accomplished/ Internal Evaluation:	19 postings and 33 viewings on average per teacher participant. Project used on-site visits, contact hours, and numbers of participants reached through dissemination to evaluate the project. No demonstrated evidence of improved teacher quality or increased student achievement; however, a high degree of teacher engagement in professional development activities suggested future impact.
Lessons Learned:	Changes to the project plan resulted in a clearer understanding of Okanogan and other teaching contexts and led to a more specific, school-based process. Small but active participant base resulted in deep understanding of projects' successes and failures. The initial barriers met, such as attitudes, access, and teachers trying to reinvent the wheel, not only informed the project but helped focus future projects.

Project 21

Fiscal Agent:	Cohort 5 - Heritage University
Project Name:	Creating Professional Development Partnerships
Contract Period:	8/2/2006-10/31/2007

Subj. Area Focus:	Math & Reading
Project Description:	Goals: to increase number of secondary teachers qualified to teach mathematics and reading to ELL and special education students; to increase reading and mathematics content knowledge and pedagogical skills of middle and high school teachers who teach ELL and special education students; to improve ability of coaches to help teachers improve strategies and content knowledge by using Sheltered Instruction Observation Protocol (SIOP) instrument in mathematics and reading content components; to involve middle and high school teachers in professional learning communities to analyze student work and to adjust instruction accordingly.
Results Description:	Two of the 21 participants earned Highly Qualified status; 6 were expected to achieve status in following year; 88% of participants reported they had increased content knowledge through this project. Mathematics pre- and post-test scores of participating teachers indicate overall positive change; no evidence of change in reading area. Coaching skills were improved, based on journal entries of participants. Professional Learning Communities (PLCs) were established (outcomes undetermined). Some evidence that student performance improved based on WASL scores reviewed by third party evaluator.
Extent to which Goals were Accomplished/ Internal Evaluation:	Portfolios, coach observation, a third party evaluation, and self-reports from teachers suggested success in reaching some project goals and influencing student achievement.
Lessons Learned:	Particularly effective was the development of PLCs to review and analyze student work. Teachers reported learning through this process. There was not enough time for more teachers to become highly qualified - required great flexibility to have all teachers participating in content classes. PLCs served to pull separate strands together (content work, SIOP training, analysis of student work, and plans to adjust instruction).

Project 22

Fiscal Agent:	Cohort 5 - Saint Martin's University

Project Name:	Reading Comprehension Achievement through Strategic Coaching and Collaboration
Contract Period:	7/26/2006-6/30/2007
Subj. Area Focus:	Reading
Project Description:	Goals were to increase teacher content knowledge; to increase teacher teaching skills; and to increase instructional leadership.
Results Description:	Teachers reported they increased their content knowledge, increased their teaching skills, and increased their instructional leadership abilities through PLC engagement.
Extent to which Goals were Accomplished/ Internal Evaluation:	Teacher self-reports suggest some success in reaching project goals.
Lessons Learned:	Coaching, PLCs, after school study groups, and forums were reported to be effective vehicles for creating changes in teachers.

Project 23

Fiscal Agent:	Cohort 5 – University of Washington Seattle
Project Name:	Mathematics in Context: Increasing Student Performance by Expanding Professional Learning Communities
Contract Period:	7/19/2006-9/30/2007
Subj. Area Focus:	Math
Project Description:	Project goals were to enhance mathematics content knowledge and teaching skills using inquiry- and project-based learning, through the development of Professional Learning Communities (PLCs).

Results Description:	Teachers demonstrated engagement in activities and were observed to participate by presenting and gaining peer responses. Teachers generated and collected lesson plan resources as a result of their collective work.
Extent to which Goals were Accomplished/ Internal Evaluation:	Evaluation process was primarily focused on delivering experiences with little evidence of impacts; teachers were observed at project events.
Lessons Learned:	Development of lesson plans as shared resource and planning for PLC. Evaluation of the project did not provide means for measuring impact on student achievement.

Project 24

Fiscal Agent:	Cohort 5 – University of Washington Seattle
Project Name:	North Central Washington Content-Area Reading Institute
Contract Period:	8/17/2006-7/31/2008
Subj. Area Focus:	Reading
Project Description:	The project attempted to develop teaching skills in secondary level content area reading; to build upon and develop leadership capacity; to develop learning communities.
Results Description:	Most teachers reported they planned to use the strategies they learned; most teachers reported the training sessions were valuable to them; some teachers said they would implement all techniques introduced to them. Teachers' engagement in "consultancy" (structured discussion about student work) demonstrated potential for leadership capacity.

Extent to which Goals were Accomplished/ Internal Evaluation:	Five of the 9 teacher participants reported they were very likely to discuss a teaching problem with a colleague. No reported evidence that learning communities were established or that student achievement was impacted by professional development. However, a HECB monitoring visit provided evidence that learning communities were established.
Lessons Learned:	Learning specific strategies was useful to teachers; no evidence strategies were used and that strategies positively impacted student performance.

Project 25

Fiscal Agent:	Cohort 5 – University of Washington Tacoma
Project Name:	Project TIER: Targeting Instructional Effectiveness in Reading
Contract Period:	7/25/2006-10/31/2007
Subj. Area Focus:	Reading
Project Description:	Project attempted to build capacity of middle school teachers and staff to screen, diagnose, monitor progress, and measure outcomes in reading; to build capacity of teachers to apply scientifically-based reading instruction to middle school students with reading difficulties; to examine effectiveness of intensive remedial reading instruction to middle school students with reading difficulties.
Results Description:	Teachers significantly improved skills and knowledge in teaching remedial reading. Student reading scores improved. Teachers implemented strategies at the building level to monitor student progress. Teachers reported they improved their skills and knowledge of curriculum-based assessment for middle school students. Teachers implemented student learning plan for all students with reading difficulties. Statistically significant reading growth demonstrated by participating students.
Extent to which Goals were Accomplished/ Internal Evaluation:	Teacher assessments and student assessments using instruments in this project suggested success in reaching project goals.

Lessons Learned:	Teachers improved skills and knowledge in working with middle school students with reading difficulties, based on baseline data from three assessment tools used in the project. Students reading skills improved through use of assessment tools and teachers' application of research-based reading strategies.

Project 26

Fiscal Agent:	Cohort 6 – Central Washington University
Project Name:	Teacher Quality in the Okanogan Valley (TQOV) Project
Contract Period:	10/1/2007-11/30/2008
Subj. Area Focus:	Math & Reading
Project Description:	Purpose is to increase the empowerment, engagement, effectiveness, and efficiency of mathematics teachers. Goals are to: 1) increase middle and high school teachers' knowledge of mathematics content and instructional strategies (primarily content area reading strategies) to meet state standards, and 2) increase middle and high school teachers' abilities to use instructional strategies of problem-based learning, integrated curriculum, and content reading strategies to create and teach mathematics lessons that address mathematics and reading weakness identified by state standardized assessment scores.
Results Description:	Project surveys and interview data suggest participants found the web-based CRAFT toolbox (framework developed to systematically address literacy for diverse mathematics classrooms) to be useful in addressing project goals. Final report suggested positive outcomes include: teacher focus changing from teaching difficulties to using teacher supports (such as CRAFT toolbox); increased engagement with students with difficulties; increased teacher motivation and competence (teachers self-reported this); district changes were reported to be increased focus on student needs, assessing student needs, teachers using diverse teaching strategies, and the development of plans to maintain collaboration teams focused on improving math instruction.
Extent to which Goals were Accomplished/ Internal Evaluation:	Project goals were accomplished to some degree (see Results Description above). The final report states increases in student WASL scores are inconclusive and teachers' classroom scores for students were unavailable. Teachers cited lack of time as a factor in accomplishing some of the project goals. Results suggest principals were not effective in promoting efforts to develop collaboration teams. One weakness of the project was the small number of districts and teachers participating in the project.
Lessons Learned:	Participants agreed that the CRAFT framework tool was useful in efforts to support instructional change. This tool allowed teachers to change the focus from "difficult" students to a strategy for predicting and then planning to address student difficulties.

Project 27

Fiscal Agent:	Cohort 6 – Educational Service District 112
Project Name:	GPS (Guidance Plus Support) System for Improving Mathematics Instruction
Contract Period:	8/10/2007-10/31/2008
Subj. Area Focus:	Math
Project Description:	Guidance Plus Support was an embedded academic year professional experience with coursework, collaborative research, networking, classroom observation, and consultation with mathematics facilitators and higher education faculty. This set of connected activities was designed to increase participant, school, and district understanding of mathematics instruction. The project outcomes were: 1) Build a school culture characterized by collective understanding of the state mathematics content standards and responsibility for student learning; 2) Build principals' knowledge and skills in instructional leadership; 3) Improve student learning in mathematics by engaging principals and teachers in collaborative inquiry process learning how to apply state standards into practice; and 4) Build teachers' knowledge of the state standards and skills in effectively implementing them by engaging teachers in research and using an observation tool to assess and improve their practice.
Results Description:	Two of the three districts in the project made progress toward establishing a culture of collaborative learning involving teachers and principals. Principals reported having gained new knowledge and skills; they also came to the realization that this work is complex and takes time. Professional learning community structure and operations were successful in that teachers valued and supported the work of the group (examining student work and exploring intervention strategies). Teachers reported that they incorporated their learning from professional learning community into classroom practice. Survey data indicates teachers felt they made progress in using data and research to inform changes.
Extent to which Goals were Accomplished/ Internal Evaluation:	Project goals were largely accomplished, based on the evaluation analysis of extensive data sources (pre- and post-comparisons; participation data; completion rates, review of artifacts, interviews, facilitator interviews, teacher research data, and focus groups). Efforts to engage principals were successful, although necessitated requiring principals to participate.
Lessons Learned:	Future projects might explore strategies for measuring specific changes in classroom practice, teachers' use of data and research, and the overall efficacy of how inquiries are conducted. [from Final Report, p. 33]

Project 28

Fiscal Agent:	Cohort 6 – Gonzaga University
Project Name:	Regional Professional Development Centers: Creating Powerful and Equitable Learning
Contract Period:	8/3/2007-12/31/2008
Subj. Area Focus:	Math
Project Description:	This project created Regional Professional Development Networks that partner teachers, paraprofessionals, and education leaders in Eastern Washington with Gonzaga University faculty and Educational Service District 101 personnel for the purpose of delivering powerful and equitable learning for all students and educational professionals. Project goals included: Goal 1) Build leadership capacity for creating systems in support of high quality, highly-collaborative instruction for improved teaching and student achievement; Goal 2) Promote clear and effective curricular articulation, alignment and assessment practices; Goal 3) Increase teacher and student content knowledge in mathematics as aligned with state standards; and, Goal 4) Improve the understanding and use of instructional methodologies and practices that promote student learning in mathematics..
Results Description:	Project included needs assessment of partners, and involved partners in the design of the project. Project conceptual framework was based on the theory that teacher learning is ultimately the responsibility of teachers. Results of project goals (above) Goal 1: Evidence shows fairly strong participation levels, however, no further evidence of results. Goal 2: Results were accomplished. Goal 3: Results were met. Goal 4: Final report suggests limited results.
Extent to which Goals were Accomplished/ Internal Evaluation:	Sustained leadership involvement would have increased accomplishments of this project. Teachers reported increased knowledge of college-level expectations and how to revise and articulate math curriculum to better serve students' transition to college. Teachers said they also learned about state standards in mathematics. Teacher self-reports suggest that they made gains in content knowledge (specifically linear equations). The final report suggests some gains were also made in teachers' understanding and using new instructional models.
Lessons Learned:	Participation and results may have been stronger with supports such as release time and providing substitute teachers. These measures continue to be difficult in small districts where substitutes may be unavailable or a least preferred option for teachers and principals.

Project 29

Fiscal Agent:	Cohort 6 – Pacific Lutheran University

Project Name:	School-University Partnership to Prepare Outstanding Responsive Teachers (SUPPORT) Tacoma Public Schools
Contract Period:	11/1/2007-2/28/2009
Subj. Area Focus:	Math & science
Project Description:	Project intent was to enhance middle school math and science teachers' content knowledge to improve teacher effectiveness. Specific objectives to reach this goal included: Provide scientifically-based professional development to teachers seeking to become highly qualified; enhance Tacoma Public Schools' capacity to formally identify, recognize, and develop instructional leaders; and enhance schools' capacity to sustain and nurture peer-supported learning communities.
Results Description:	Three main sources for data (teachers subject-area pre- and post-test performance, middle school students' performance on formative and summative assessment, and survey of teachers on their self-assessment of knowledge and skills in diagnosing and differentiating math and science instruction) suggest the following results: math and science teachers demonstrated marked gains in their grade-level content knowledge (math – 15% gain; science – 39% gain); math and science teachers' pedagogical-content knowledge increased (math – 12% gain; science – 30% gain); teachers' ability to diagnose student understanding for designing differentiated instruction (gains in both math and science, with stronger gains in math); and middle school students' content knowledge increased in math and science (math – 21% gain; science – 30% gain).
Extent to which Goals were Accomplished/ Internal Evaluation:	As a result of the project implementation and results, participants say that pre-assessments or probes are now a driver for planning and instruction; teachers are able to anticipate student mistakes/misconceptions when planning lessons; teachers now take time to analyze student work to check whether students actually made anticipated mistakes or had misconceptions. Teachers in the project recommended that the district support imbedding probes into unit plans; provide opportunities for vertical teacher planning across all K-12 levels; provide resources for non-traditional learners that require non-traditional teaching approaches; provide teachers with collaboration hours during school hours.
Lessons Learned:	Teachers learned that involving all teachers in the project would have benefitted the entire school(s). The project included identification of SUPPORT scholars who served as co-designers and co-instructors and established content team leaders at the middle schools, to support sustained peer-driven and expert assisted learning communities. Such approaches served to provide an infrastructure for the work.

Project 30

Fiscal Agent:	Cohort 6 – Saint Martin's University
Project Name:	Building School-wide Capacity for Reading Strategies Across Content Areas

Contract Period:	8/10/2007-10/31/2008
Subj. Area Focus:	Reading
Project Description:	This project was a continuation project, designed to further build capacity and sustainability for effective reading instruction in the content areas. The project was designed to deepen teachers' and principals' knowledge in the teaching of reading comprehension and in developing lessons that meet student needs. The project used a Literacy Coach Model to support teachers' development of lesson plans and effective instructional strategies. Selected teachers were trained as peer coaches, to support site-based school improvement. Specific goals included 1) Increase subject-matter knowledge, 2) Increase participants' ability to use Washington State academic content and student achievement standards and WASL to improve instructional practices and student performance in reading, and 3) Increase principals' instructional leadership skills that help them work more effectively with teachers to help students master content area reading.
Results Description:	Some benefits realized through the project include: valuable interaction between university and school faculty; teacher collaboration increased; teachers reported using the strategies they had learned; coaches were perceived as beneficial to improve teacher effectiveness.
Extent to which Goals were Accomplished/ Internal Evaluation:	Final report suggests teacher behavior reflected increased subject-matter knowledge (Goal 1) based on data gathered from teacher self-reports, coach observation, and principal observations. Goal 2 was partly achieved: teachers were able to use state standards and increased their understanding of content; however, WASL scores in 2007-2008 showed mixed results (decreases in WASL scores in 2007-2008 was a state trend). Goal 3 results suggest that the principals involved in the project benefited from training components and are interested in long-term commitment to professional learning communities to support building capacity and sustainability. It appears that only three principals were involved in this project.
Lessons Learned:	This project has benefitted from multi-year continuation efforts to support improved teacher quality. Smaller districts experienced more difficulty than larger districts in releasing teachers and principals for professional development activities.

Project 31

Fiscal Agent:	Cohort 6 – University of Washington Seattle
Project Name:	Development of Instructional Leadership Skills for Mathematics Education: Building Learning Communities with Teachers and Administrators on the Olympic Peninsula and Beyond
Contract Period:	12/11/2007-8/31/2009
Subj. Area Focus:	Math

Project Description:	This project focused on instructional leadership development in mathematics education for middle and high school principals. It built on four previous years of teacher professional development activities. The project formally incorporated principals into mathematics learning communities and provided them firsthand experience with effective inquiry-based group learning methods applied to mathematics instruction. Principals learned protocols for working supportively with teachers using research-based methods to increase student performance in mathematics.
Results Description:	Project objectives were largely realized: principals' instruction leadership skills were improved; principals became part of their schools' mathematics learning community. Mathematics learning communities were sustained by increasing principals' leadership skills. Inquiry-based mathematics instruction was addressed within the context of student success on the WASL. Participants' awareness of practices that increase student engagement was increased. Additional high-need district teachers and administrators participated in professional development events, as planned, to build interest and shared involvement. Thirty-six principals and 7 superintendents were involved in this project.
Extent to which Goals were Accomplished/ Internal Evaluation:	Some evidence that administrators are better prepared to provide instructional leadership at their schools. Evaluation of the project (final report) relied heavily on anecdotal comments. Project may have benefitted from external evaluator and/or an expanded evaluation plan as part of project design. Principals and superintendents may have provided more evaluative data if they had been able to journal online, assess teacher change, or document their use of the observation protocols.
Lessons Learned:	Project successes support the concept of multi-year efforts to achieve goals. Involving teachers and administrators in planning future activities may help ensure stated outcomes are realized (in this project, teachers were supportive of administrator professional development, to support the previous Title II project activities designed for teachers).

Project 32

Fiscal Agent:	Cohort 6 – University of Washington Tacoma
Project Name:	Project IMPACTS (Improving Mathematics Performance, Achievement, and Competence for Teachers and Students)
Contract Period:	8/16/2007-12/15/2008
Subj. Area Focus:	Math
Project Description:	Project IMPACT's goal was to assist school districts (middle and high school teachers, coaches and administrators) in implementing a collaborative Instructional Problem Solving Model to ensure that all students meet Washington State standards in mathematics. This model was based on the assumptions that: a) district level administrators, principals, and math coaches support the efforts of teachers by providing high quality professional development informed by continuous progress monitoring

	of student performance; b) teachers and instructional assistants are responsible for implementing evidence based instructional practices, collecting and interpreting student performance data, and subsequently designing instructional interventions; and c) collaboration among teachers (both individual teachers and teachers in grade level teams) and administrators (including math coaches who serve as liaison between teachers and administers) is essential for implementing this model.
Results Description:	Results in the Final Report were largely reported as activities, e.g., team meetings held monthly to review student performance data, generate action plans for students below standards, and identify appropriate interventions. The Final Report referenced few performance measures that might chronicle changes in teacher practice and related student learning outcomes.
Extent to which Goals were Accomplished/ Internal Evaluation:	No significant change in WASL scores. No significant change in SAT-10 scores. Gains identified based on Curriculum Based Measurement (CBM) system (facilitates problem solving model for designing and evaluating interventions); however, specific measures were not noted due to confidentiality. Final report indicates project activities were accomplished according to project plan. Project would have benefitted from specific evaluation plan to assess changes in teacher and administrator practices.
Lessons Learned:	The CBM tool may be useful to teachers in future projects; however, confidentiality issues that limit reporting and analysis must be overcome. The project may have benefitted from identifying other non-standardized testing means for evaluating effectiveness of this project.

Project 33

Fiscal Agent:	Cohort 6 - Washington State University Pullman/Spokane
Project Name:	Building Capacity for College Readiness Standards in Mathematics through 11-16 Teacher/Faculty Professional Learning Communities
Contract Period:	8/8/07-7/31/09
Subj. Area Focus:	Math
Project Description:	This project was designed to further understanding of Washington's College Readiness standards in mathematics and increase participants' ability to use state academic content, student achievement standards, and state assessments to improve instructional practices and improve student academic achievement in mathematics. The project involved grade 11-12 high school teachers and higher education mathematics and math education faculty from area colleges and universities, utilizing a Professional Learning Community (PLC) approach.
Results Description:	The evaluation determined project results based on data collected from project participant surveys, open-ended interviews of participants, observation of professional development sessions, and student performance data. Data suggests participants were positive about team development; participants also reported PLC impact on their understanding of standards and teaching practice was positive. Participants reported positive change in professional practice, classroom pedagogy, and level and type

	of support for individual students. Some participants suggested that increased professional development had a positive impact on team activity. The evaluation data showed that lack of time was a barrier to doing the work.
Extent to which Goals were Accomplished/ Internal Evaluation:	Both the external and internal evaluation of this project suggests that the PLC implementation was largely successful in most schools. The project goals of increasing teacher awareness and knowledge of standards, implementing PLCs, and examining teaching practices were largely realized.
Lessons Learned:	The PLC proved to be a promising professional development tool for teacher innovation and for change in teacher practice. The inter-organizational makeup of the PLC (participants from high schools, colleges, and universities) created challenges but also increased the likelihood of participants achieving project goals.

Project 34

Fiscal Agent:	Cohort 7 – Educational Service District 105
Project Name:	Math 360: Building Academic Language and Content Skills in Mathematics
Contract Period:	7/1/09-8/31/12
Subj. Area Focus:	Math & reading
Project Description:	Math 360 will increase the content knowledge of middle school math teachers and their ability to implement effective math instruction, including use of formative assessment. It also aims to increase the ability of middle school principals and assistant principals to recognize effective math instruction and to provide teachers with constructive feedback. Professional development will include institutes, online content learning and reflection, establishment (or enhancement) of PLCs, and development of school-based teacher leaders.
Results Description:	Not available yet
Extent to which Goals were Accomplished/ Internal Evaluation:	Not available yet

Lessons Learned:	Not available yet

Project 35

Fiscal Agent:	Cohort 7 – Seattle University
Project Name:	Mathematics and Science: Endorsement Academies, PLCs, and Student Improvement
Contract Period:	7/1/09-8/31/12
Subj. Area Focus:	Math & science
Project Description:	This project's focus is on teacher certification endorsements for biology, middle level mathematics, or secondary mathematics. Principals and assistant principals participate in classes on differential learning and standards, learn content-specific observational strategy, and participate in PLCs focusing on leading student improvement in mathematics and science.
Results Description:	Not available yet.
Extent to which Goals were Accomplished/ Internal Evaluation:	Not available yet.
Lessons Learned:	Not available yet.

Project 36

Fiscal Agent:	Cohort 7 – University of Washington Bothell
Project Name:	Math 2.0: Teaching Math in a Technical World
Contract Period:	7/1/09-8/31/12

Subj. Area Focus:	Math
Project Description:	This project focuses on increasing teacher effectiveness in algebra through professional development on integrating technology, pedagogy, and content while emphasizing student learning. Participants will learn to use emerging technologies and mathematics software to engage students in the concept of the function, which is the foundation for algebraic thinking. It will also expand principal and assistant principal skills for observing and supporting mathematical learning in inquiry-based, technology-rich mathematics classrooms.
Results Description:	Not available yet
Extent to which Goals were Accomplished/ Internal Evaluation:	Not available yet
Lessons Learned:	Not available yet

Project 37

Fiscal Agent:	Cohort 7 – University of Washington Seattle
Project Name:	Supporting Teacher Strategies to Prepare Students in Remote Rural Communities for College-level Mathematics
Contract Period:	7/1/09-8/31/12
Subj. Area Focus:	Math
Project Description:	The focus of this project is on training middle and high school mathematics teachers to use group-based learning and inquiry-based problem solving to prepare students in isolated rural communities to meet the revised Mathematics K-12 Learning Standards. Principals will gain familiarity with new classroom practices and support teachers who adopt them. Professional development delivery will include institutes, retreats, classroom studios, observations and coaching.
Results Description:	Not available yet

Extent to which Goals were Accomplished/ Internal Evaluation:	Not available yet
Lessons Learned:	Not available yet

Project 38

Fiscal Agent:	Cohort 7 – Washington State University Pullman/Spokane
Project Name:	Riverpoint Advanced Mathematics Partnership (RAMP)
Contract Period:	7/16/09-9/15/12
Subj. Area Focus:	Math
Project Description:	RAMP focuses on College Readiness Standards (CRS) related to algebra, functions, geometry, probability, and statistics. It aims to improve teachers' knowledge of CRS, mathematics content knowledge, pedagogical practices, and effective use of formative assessment. It will also improve principals' and assistant principals' knowledge of CRS and collaboration with their teachers.
Results Description:	Not available yet
Extent to which Goals were Accomplished/ Internal Evaluation:	Not available yet
Lessons Learned:	Not available yet

Project 39

Fiscal Agent:	Cohort 7 – Western Washington University
Project Name:	College Readiness in Science Partnership (CRISP)
Contract Period:	7/1/09-10/31/12
Subj. Area Focus:	Science
Project Description:	CRISP will use the Washington State Science Standards and College Readiness Definitions to improve middle and high school teachers' understanding of effective science instruction. Principal and assistant principal understanding of effective science instruction will increase too.
Results Description:	Not available yet
Extent to which Goals were Accomplished/ Internal Evaluation:	Not available yet
Lessons Learned:	Not available yet

Appendix B – Teacher Quality

What Do We Know About Teacher Quality?

Intellectual Ability

- "What teachers know and can do is the most important influence on what students learn."
- Many studies suggest a strong relationship between teachers' verbal and mathematical abilities and student achievement. Similar studies suggest a positive relationship between teachers' standardized test scores and student achievement.
- The most effective teachers have high intellectual and verbal ability, and a depth of knowledge that enables them to present curriculum in a variety of ways. Teachers with higher verbal ability can better convey ideas to students and communicate with them in a clear and compelling manner.
- A teacher's level of literacy (defined as overall academic caliber and world knowledge), as measured by vocabulary and other standardized tests, affects student achievement more than any other measurable teacher attribute, including certification status.
- When teachers perform well on basic skills tests, their students also tend to do better on academic measures. A teacher's verbal ability does matter.

Systemic Issues

- The organization and culture of a school can have a significant impact on the quality of teaching. To improve teacher quality, we must look at the instructional capacity of the entire school.
- Teacher quality depends on the system in which teachers work. For quality teaching to occur, the system should be in alignment.
- Administrators play a major role in determining the quality of teaching that occurs in that building. A strong, effective teacher may have little impact on student learning in a dysfunctional school with little administrative support.
- Some schools have formed Professional Learning Communities, where teachers meet regularly to share ideas about what is working and what is not, and to expand their knowledge and skill sets. This is consistent with research that lists collegiality and collaboration as earmarks of effective teachers.
- Improving the quality of teaching will require that schools develop a philosophy that supports inquiry, deep content and seeing relationships.
- There must be a culture of high expectations for students and teachers. Does the school value teacher learning, collegiality and cooperation?
- We must adopt a Continuous Quality Improvement philosophy for education, i.e., we continually seek improvement. Change must be system wide, not just about improving individual teachers.
- Teacher evaluations affect quality. Are evaluations designed and conducted in a way that contributes to quality instruction?
- Inconsistent educational policies have a negative effect on quality teaching.
- Teaching a grade level or subject for which a teacher is not certified or has little training may convert a highly qualified and capable teacher into an ineffective one.

Experience

- Teacher experience, up to a point, is definitely correlated to teacher effectiveness. Some studies suggest that experience beyond six years has little significant effect. One way to improve teacher quality is to make sure that teachers stay on the job long enough to get the experience that will produce the required quality.
- Experienced teachers have a greater repertoire for preparing lessons and responding to students. Experienced, effective teachers know both the content and their students, and practice interactive decision-making. They can do more in less time because they make connections and see relationships, and are effective at moving from one task to another.
- Experienced, effective teachers tend to know and understand their students' learning needs, learning styles, prerequisite skills, and interests better than less experienced teachers. They are better able to apply a range of teaching strategies and demonstrate more depth and differentiation in learning activities.
- Newer teachers are more likely to stick to the script, rather than improvise. (In some districts, the way teachers are evaluated determines how much they improvise.)

Personal Qualities and Skills

- Techniques and instructional strategies have nearly as much influence on student learning as aptitude.
- Some researchers differentiate between good teaching and successful teaching. The former focuses on what teachers do, and the latter on what students learn. In other words, although a teacher can follow a lesson plan exactly, and cover the curriculum as prescribed, students may not be learning.
- Effective teachers must be able to see connections and help students make those connections, and integrate a variety of content and ideas into their teaching. They recognize the importance of linking instruction to real life.
- The ability to engage and motivate students effectively is an important element of quality teaching. The focus here is on how students experience school, rather than on what teachers do. Effective teachers are motivational leaders. Their enthusiasm for learning and for the subject matter under study has been shown to be an important factor in student motivation, which is closely linked to student achievement.
- Some researchers recommend that "dispositions" be included in the discussion of quality teaching. These include such things as values, commitments, belief systems and professional ethics that influence behaviors toward students, families, colleagues and communities; temperament, character, personality, nature, demeanor, frame of mind, emotional characteristics, moral and ethical qualities, the ability to form relationships, and caring, i.e., helping another person grow and actualize her/himself.
- Most of what makes a teacher effective are the "soft" personal attributes that are much harder to measure. Seven personal attributes of effective teachers from Teach for America (www.teacherforamerica.org/corps/teaching/becoming_exceptional_teachers.htm research are:
    - High achieving: A history of success, no matter what the endeavor.

    - Responsibility: Rather than blaming others or circumstances, the individual takes full responsibility for achieving a positive outcome.
    - Critical thinking: The individual reflects about the linkages between cause and effect instead of simply reacting to the effect.
    - Organized: The individual is able to juggle multiple tasks successfully.
    - Motivating: The individual is able to influence and motivate others to action, as evidenced by effective leadership in extracurricular activities such as student run organizations or athletic teams.
    - Respectful: The individual assumes the best about people, especially people in low-income communities.
    - Shares the goal of the organization: The individual wants to work toward TFA's mission of eliminating educational inequities.
- Teacher qualities related to higher achievement—
    - Content knowledge
    - Teaching experience
    - Teacher training and credentials
    - Overall academic ability, especially verbal ability
- Educators should be more research-oriented, should both be conducting and using research. They also should be willing and able to translate research into action. (They will need assistance in doing this.)
- There appear to be differences between quality teaching at the elementary level and at the secondary level. The latter is more content oriented.
- Six standards/practices of quality teachers—
    - Engaging and supporting all students in learning.
    - Creating and maintaining effective environments for student learning.
    - Understanding and organizing subject matter for student learning.
    - Planning instruction and designing learning experiences for all students.
    - Assessing student learning.
    - Developing as a professional educator.
    - Teachers should be able to articulate how they are doing these things.
- Six common principles regarding teaching practice.
    - Building on students' prior knowledge (how do we know what they know?).
    - Linking goals, assessment and instruction.
    - Specific, ambitious learning goals use frequent assessments to monitor students' progress toward those goals, and continually adjust instruction based on what they learn from assessments.
    - Effective teachers focus both on content and on critical thinking.
    - Developing students' language skills (vocabulary).
    - Creating a culture of learning; establishing a learning community, rather than a roomful of students.
- From Qualities of Effective Teachers
    - Effective teachers minimize discipline time and accentuate instructional time.
    - Effective teachers interpret and respond to inappropriate behavior promptly.
    - Effective teachers maintain clear rules and procedures, and establish credibility with students through fair and consistent implementation of discipline.

    - Effective teachers reinforce and reiterate the expectations for positive behavior.
    - Effective teachers are mentally focused on the teaching and learning process. (This is different than "doing.")
    - Effective teachers know how to build trust with students.
- Effective teachers are able to anticipate student knowledge and potential difficulties and to direct instruction to meet individual needs of all students.
- The ability to apply and integrate knowledge or skills to a particular population in a specific setting is the key characteristic of an effective teacher.
- Effective teachers are skilled at conveying content to students in a way that they can grasp, use and remember it.
- Various effectiveness studies indicate that the teacher's psychological influence on students is substantial. (Link to positive emotional climate.)
- Role of Caring: Effective teachers care about their students and demonstrate that they care in such a way that their students are aware of it. Caring has been defined as "an act of bringing out the best in students through affirmation and encouragement." Caring qualities include patience, trust, honesty, courage, gentleness, listening, understanding, knowledge of students as individuals, warmth and encouragement, and overall love for children.
- Effective teachers are flexible, adaptable and able to improvise. Their classrooms are dynamic. They look for and take advantage of teachable moments.
- Effective teachers consciously listen to students, pay attention to what they are saying, and convey a sense of understanding of what is being said.
- Effective teachers understand students' questions and concerns.
- Effective teachers know their students individually, understanding their personalities, likes, dislikes, and personal situations. They are aware of students' cultures outside the school, and know how to respond to them.
- Constructive social interactions between teachers and students not only contribute to student learning and achievement, but also increase student self-esteem by fostering feelings of belonging to the classroom and to the school.
- Effective teachers are aware of their own style of interacting with students, and are able to provide a more favorable learning environment for all students.
- Effective teachers consistently behave in a friendly and personal manner, while maintaining appropriate boundaries.
- Effective teachers are informal leaders on the cutting edge of reform and are not afraid to take risks to improve education for all students.
- Teachers who provide mastery learning techniques for their students improve the attitudes of their students. They also increase academic self-concept (self-efficacy), interest in the subject area, and the desire to learn more about the subject.
- Effective teachers have high expectations for all students. They truly believe that all students can learn.
- Thoughtful reflection translates into enhanced teacher efficacy, and a teacher's sense of efficacy has an impact on how s/he approaches both instructional content and students. Belief in one's efficacy and maintaining high expectations for students are common among teachers who reflect. Effective teachers continually reflect on their

teaching, and practice self-evaluation and self-critique as learning tools. They portray themselves as students of learning. They constantly improve lessons, think about how to teach particular children, and seek and try out new approaches in the classroom to better meet the needs of their learners. Effective teachers are not afraid of feedback; in fact, they elicit information and criticism from others. They readily accept constructive criticism and reflect upon it. They view themselves as being responsible for the success of their students.

- Effective teachers who consistently prioritize instruction and student learning as the central purposes of schooling communicate an enthusiasm and dedication to learning that students reflect in their own behaviors and practice.
- Effective teachers allow students to participate in decision making.
- Effective teachers understand and practice good classroom management. They can multitask; are keen observers of student behaviors and adept at discerning and addressing potential disruptions; and try to ensure that there is no "down time," i.e., time when students are not involved in learning. Over and over again the term "with-it-ness," meaning awareness of surroundings, is used to describe teachers who are effective classroom managers.
- Students indicate that effective teachers spend more time interacting and working directly with them than ineffective teachers. Effective teachers demonstrate a sense of fun and a willingness to play or participate, have a good sense of humor, and are willing to share jokes.
- Effective teachers consider students' learning styles when planning lessons. They also systematically develop objectives, questions and activities that reflect higher-level and lower-level cognitive skills as appropriate.
- Effective teachers develop and regularly integrate inquiry-based, hands-on learning activities, critical thinking skills, and assessments into daily lesson plans. Hands-on learning, especially in science, has a positive effect on student achievement.
- Effective teachers seek a range of instructional strategies. They routinely combine instructional techniques that involve individual, small group and whole-class instruction. They use concept mapping and graphic organizers. Students have higher achievement rates when the focus of instruction is on meaningful conceptualization, especially when it emphasizes their own knowledge of the world.

Appendix C

Other States' Title II Programs

A review of what other states are doing to implement Title II Programs through Title II funding helps inform considerations for improving Washington States' likelihood of obtaining project results. For example, Washington could follow other states' practice of requiring documentation of changes in both teacher quality and student achievement.

California: Focus is on addressing achievement gap in elementary school.

- Elementary schools only;
- Project must support a leadership model that includes the preparation of some teachers in the intervention to be trained as teacher-leaders, so they can help other teachers improve their teaching;
- Specifically address ethnic or racial disparities in the targeted school;
- Take an integrated whole school approach focused on issues in the school that are directly related to the achievement gap;
- Professional development model must have strong site-based, school-year components and include prepared teacher-leaders; and
- Ultimately includes providing professional development to all teachers in a school.

Connecticut: More teacher education for reading and special education instructors.

- Ongoing professional development
- Detailed student performance information is used to improve instructional practices.
- State offers low interest mortgages and down payment assistance to teachers who work in high poverty neighborhoods and those employed in shortage-subject areas.

Kentucky: Instituted incentives for teacher colleges to meet national professional accreditation standards.

- In 1999-2000, KY led the nation in professional development. 83% of the state's teachers reported receiving instruction in content and performance standards in their main teaching assignment during the previous year.

Missouri:

- Hold teacher preparation programs accountable for performance of graduates.
- Assess content knowledge of teachers in low-performing schools and provide content-based professional development for those with deficiencies.

N Carolina: Nation's largest gains in math and reading achievement.

- Teacher quality strategies included:

- Professional development academies.
- Mentoring programs.
- Preparing teachers to respond to students' diverse learning

- Charlotte-Mecklenburg project:
  - Intensive professional development for educators.
  - Targeted low-performing schools
  - Helped teachers get master's degrees.
  - Reduced class sizes.

Texas:

- El Paso Project:
  - Project goal to prepare every student to enter college without remediation.
  - Hired more than 50 full-time teacher coaches.
  - Held intensive summer institutes.
  - Convened monthly meetings for teachers within subject areas.
  - Meanwhile, the university overhauled its teacher preparation program.
  - Elementary teachers now take twice as many math and science courses as their predecessors.
  - These courses are taught by university faculty who helped established teaching program standards.
  - All of the above helped reduce the achievement gap.

Oregon: Similar to Washington State, with a strong recommendation that teachers and principals play leading roles in the development of the proposal design. Proposals must be aligned with the state's goals of closing the achievement gap, preparing for new diploma requirements, success for all students, and middle and high school improvement. Projects must:

- Upgrade content and pedagogical knowledge/skills particularly in literacy, mathematics, science, and foreign language
- Address professional development needs of early childhood, elementary, middle and high school teachers and principals
- Align with standards-based school reform
- Encourage inclusion of principals and vice principals in professional development, given their understanding of content and processes and their ability to provide school leadership grounded in faculty and student learning outcomes.

Projects in Oregon are also asked to demonstrate the effectiveness of professional development activities by using performance measures:

- Peer observation and feedback of participant teaching
- Practice under simulated conditions with feedback
- Informal meetings with other participants to discuss classroom implementation
- Sharing/reviewing student work

- Scoring/analyzing assessments
- Planning, developing and peer reviewing curricula or lesson plans
- Opportunity to present, demonstrate, or lead discussions with peer participants
- Analyzing teaching and learning needs using disaggregated student achievement data.

Wisconsin: In 2008, special consideration was given to proposals that involve pre-service teachers and attempts to change preparation programs so they are able to teach in ways different from how they were taught.

- Pre-service teachers may be participants in the project if it is a school-based teacher training program that provides prospective teachers with an opportunity to work under the guidance of experienced teachers and college faculty.
- Proposals must demonstrate substantial collaboration between arts and sciences and teacher preparation departments.
- Activities must be based on a review of scientifically based research. An explanation of how the activities will lead to improvement in student academic achievement and quality of instruction must be included.
- Measurable objectives for improved academic achievement are required.
- An outside evaluator should conduct the evaluation.

The state approaches described above include ideas that could potentially optimize Title II programs. Examples might include the involvement of the principal and other school leaders; a whole-school approach; embedded professional learning communities; tracking student achievement data; establishing project performance measures consistent with state and national guidelines; teacher-and-principal-driven grant proposals to ensure teacher and school/district engagement in implementation of changes.