

Competency-based Educator Preparation & School Intervention

Investing in Innovation Grant -- U.S. Department of Education

Texas Tech University College of Education & College of Arts & Sciences, Lubbock
Independent School District, Texas Instruments, Teachscape, & Haberman Foundation

The Competency-based Model targets:

- **Absolute Priority One:** Innovations that Support Effective Teachers and Principals
- **Competitive Preference Priority Eight:** Innovations To Address the Unique Learning Needs of Students With Disabilities and Limited English Proficiency
- **Competitive Preference Priority Ten:** Technology

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Problem and Significance of Need

This is a proposal rooted in the recognition of our own past weaknesses and the tenacious commitment to make things right for the next generation of Americans.

A crisis of American educator competence has arisen as 19th century schooling and teaching practices meet 21st century demands. The dominant culture of industrial-era “seat-time education” combined with shallow knowledge-level assessment of learning no longer serves our nation. Seat-time education is the requirement of student attendance/participation in a fixed curriculum as a primary condition for credit and assumed mastery of course content. Shallow assessment of knowledge and basic conceptual understanding is the current practice driving teaching and learning in most American classrooms. Years of domestic and international assessment data suggest that the seat-time model of education isn’t serving our children (e.g., NCES, 2009).

Currently, the accepted practice in American education is to equip students with out-of-context knowledge-level facts and rudimentary reasoning. This approach fails to bring deep subject-area understanding to bear on looming 21st century challenges. On the stage of international comparisons of academic knowledge and critical thinking skills, American children are being left behind (e.g., OECD, 2010). It is a stinging realization that America has lost its role as global leader in the quality of education and percentage of its citizens obtaining a Bachelor’s degree, dropping from first to sixteenth (Darling-Hammond, 2010).

Industrial-era seat-time education is detached from the realities of today’s American enterprise, which requires generative thinking and effective problem-solving. Seat-time education and its “bubble-sheet” assessment of shallow knowledge-level learning have led to an

epidemic of disengaged learners. This epidemic is growing as children experience the richness of the Internet and Web 2.0 resources for learning (e.g., Hockings, Cooke, Yamashita, McGinty, & Bowl, 2008).

There are, however promising exceptions. A small minority of American schools demand deep analysis and original thinking (e.g., Big Picture Learning, New Country Schools, Ed Visions, High Tech High, Rocketship Education). These outcome-based 21st century schools are qualitatively different from traditional schools in their focus and operations (Table 1):

Focus	Traditional Schools	21st Century Schools
Achievement Index	Time- and input-based	Outcome-based
Learning Targets	Factual knowledge, low-level reasoning (speed and accuracy)	Higher-level cognition (synthesis, analysis, evaluation), performance skills (e.g., extensive “stand and deliver” communications and presentations, creation of products)
Learning Approach	Passive, individual, teacher-centered	Active, group collaborative, student-centered
Basis of Grades	Attendance, quantity of homework submitted, a predominance of knowledge-level assessments	In-class, rubric-scored performances (“stand and deliver” presentations), extensive writing at higher cognitive levels, assessments reflecting the expectation of deeper understanding, demonstration of skills, and the creation of products
Model of Schooling	19 th Century factory production, scientific management of production and cost efficiency, ongoing testing of minimal acceptability standards (“conveyer line product checks for minimum acceptability”)	21 st Century preparation for thinking and problem-solving needed to master globalization and dramatic change including technology. Applied, interdisciplinary academics fostering agility, adaptability, initiative and entrepreneurialism

While many argue that Americans students need this type of outcome-based education to be globally competitive in the 21st century, there is an underlying problem. *The majority of our*

teachers are arguably not prepared to lead this type of learning. Most of today's teachers were prepared in an industrial-era seat-time system of pre-service teacher preparation, and then, as classroom teachers, have received professional development with little classroom support.

While nearly every teacher in our country has received professional development on strategies for addressing the learning needs of an increasingly diverse range of students, the training was likely seat-time oriented. This industrial-era approach to educator preparation was based on the assumption that if new or existing teachers understood the best-practices being explained in lectures, they would enact them in their classrooms. Unfortunately, this has too seldom proven to be the case. The result is teachers who conceptually understand a range of learner needs and instructional strategies, but who do not have the skill-based competence to implement the practices at a level of mastery to actually satisfy student needs.

High-need students suffer most from seat time-prepared teachers, and research on teacher distribution suggests that the least-skilled teachers are concentrated in schools serving this student population (e.g., Peske & Haycock, 2006). Because of teacher quality inequities, American students perform at the highest and lowest levels on international tests (NCES, 2009). Some believe that our very future depends on actualizing the potential of America's historically underserved students (e.g., Darling-Hammond, 2010).

To regain global leadership in teaching and learning, America must transform its system of educator preparation from an industrial-era seat-time orientation, with its dominant focus on conceptual understanding, to competencies-based preparation. Competency is defined as “a combination of skills, abilities and knowledge needed to perform a specific task” (Jones, Voorhees, & Paulson, 2002, p. vii). Competency-based preparation is a higher-order

type of learning facilitation that prepares educators to enact skillful professional performances built on masterful application of knowledge and reasoning. In the competency-based educator preparation model, the merit of targeted competencies is determined by their documented impact on student learning.

Because the negative consequences of industrial-era seat-time education have been most pronounced for high-need students, it is morally incumbent on us to begin our reform work in schools serving high-need students. Ultimately, the work that must be done is even larger. In the fast approaching era of internationally benchmarked academic standards and 21st Century learning skills (i.e., critical thinking and problem solving, creativity and innovation, communication and collaboration), a very real threat exists that the *majority* of American students may not be adequately served. We must act immediately to build the capacity of our workforce in education. This project addresses **Absolute Priority One** and will identify, recruit, develop, place, reward and retain highly effective teachers who are masterful, competency-based educators. Further, this project addresses **Competitive Priority Eight** (meeting the learning needs of students with special needs and limited English proficiency) and **Competitive Priority Ten** (technology).

The competency-based educator preparation and school intervention models advanced in this i3 proposal was created by the Lubbock Independent School District (LISD) and Texas Tech University (TTU) leaders with the input of teachers and university faculty. The school-university partnership acknowledges that both its university preservice teacher preparation and inservice teacher, teacher leader, and principal professional development programs are industrial-era, seat time-oriented and not sufficient for meeting the challenge of the 21st century or the

needs of its underperforming, high-need K-12 students, especially in mathematics. As a school-university partnership, a two-part plan for *simultaneous* reform is proposed.

Official Partner School District

Though four school districts will participate in this project, LISD is co-creator of the competency-based model and the LEA where the model will be tested. LISD is a West Texas school district of close to 30,000 children. It is majority minority with 54% Hispanic and 13% African-American students. The White student population has declined to 32%. The Texas Education Agency (TEA) reports that 62% of LISD students are economically disadvantaged (TEA, 2011).

Academically, LISD was rated as “acceptable” on 2010 state accountability ratings, yet performed significantly below the state mean on the Texas Assessment of Knowledge and Skills (TAKS) test. The district struggles most in mathematics, and unfortunately preliminary data suggest a further decline in students’ math scores on the 2011 TAKS test in grades 6 through 9. Therefore, this is where the initial implementation and testing of the model will occur. Specifically, initial implementation of the Competency-based School Intervention model (i.e., Part B of the *simultaneous* reform plan) will occur in two of the district’s lowest performing high schools and four middle schools. The students in the six target schools are low-SES, Hispanic and Black.

Non-Profit Fiscal Agent

See TTU eligibility data in Appendices A, B, C and D. TTU is a major comprehensive research university with over 32,000 students and is also located in Lubbock Texas. The College of Education (COE) provides degree and certification programs for undergraduate and

graduate students who will become certified to teach in elementary, middle, and secondary schools. Programming includes Bilingual Education, English as a Second Language, Special Education, and Math and Science Education. In the 2010-2011 Academic Year, the College enrolled 855 students seeking undergraduate certificates and 217 students seeking initial certification as post-baccalaureate students. In addition, the College offers a range of advanced certificate, masters, and doctoral programs. In the 2010-2011 academic year, the College enrolled 486 Master's students and 280 doctoral students. The College is a leader in quality distance learning.

Other Partner Institutions

Texas Instruments (TI) is an American company based in Dallas, Texas. TI develops and commercializes semiconductor and computer technology. TI will offer a curriculum called **MathForward** (see Appendix J), which uses hand-held technology to actively engage learners in grades 6-9. The goal of the program is to eliminate achievement gaps among diverse student groups in critical middle school grades mathematics and Algebra I. Using quasi-experimental design and case study methodology, research findings since 2007 (in a number of states and schools) show a consistent pattern of positive student achievement results *when* school implementation is strong (e.g., Penuel, 2008). TI will provide in-kind cost-share match for the project.

Teachscape (see Appendix J) is the technology partner of the Gates Measures of Effective Teaching (MET) Project. Teachscape 360° video equipment and web-based interface will provide the foundational technology solution for *ongoing* capture, analysis, and sharing of classroom teaching, professional learning community events, post-instruction-conferences, and

school leadership meetings. Teachscape will also host web-based professional development resources and support. Teachscape will provide in-kind cost-share match for the project.

The Haberman Educational Foundation is a foundation based in Houston, Texas. The foundation has the single mission of teaching and implementing research-based models for identifying effective teachers and principals, particularly educators who serve students at risk and in poverty. Dr. Martin Haberman has validated a measure called “The Star Teacher Interview” that has for many years demonstrated high levels of accuracy in predicting which educators will be most effective serving high-need students. The web-based screening instrument as well as the Haberman interview process will be used to identify and recruit the highest potential teacher candidates into the competency-based teacher education programs. The Haberman Education Foundation will provide in-kind cost-share match for the project.

Private Organizations & Foundations: A business and two philanthropic organizations have expressed interest in supporting this proposal: Pro Petroleum Incorporated (Lubbock, Texas), the Meadows Foundation (Dallas, Texas), and the Lubbock Economic Development Alliance (Lubbock, Texas).

Project Design

Table 2. TTU-LISD Plan for *Simultaneous Reform*

Absolute Priority One: Innovations that Support Effective Teachers and Principals		
	<u>INNOVATION-PART A</u> Competency-based Preservice Teacher Education Program	<u>INNOVATION-PART B</u> Competency-based School Intervention Inservice Teachers (Teacher Leaders, Principals)
Identify	Work with the College of Arts & Sciences to attract the most promising teacher candidates into the competency-based teacher education program (TEP). Use Haberman screening tools to identify teacher candidates committed to high need students.	The Competency-based framework is used to identify teacher effectiveness (also in TEP – Part A): 1) Demonstrated subject-area mastery 2) Demonstrated pedagogical mastery 3) Demonstrated impact on student growth Constant capture of practice through Teachscape technology will enable ongoing review of practice.

Recruit	Have partner districts champion the competency-based TEP to recruit the most promising students. Some Texas TEPs are minimal in expectations creating TTU tensions about increasing rigor. Yet, teacher quality matters and districts can relay this to candidates.	<ul style="list-style-type: none"> • LISD teachers that demonstrate high competency are offered salary incentives to recruit them to teach in district schools serving highest-need students. • The strongest performing principals have been transferred to schools serving highest-need students. • Ineffective teachers will be replaced with the strongest graduates of the competency-based TEP.
Develop	Teacher candidates experience a district-based, clinically intensive TEP with three formative competency-based assessments <i>per semester</i> . Teacher candidates' rubric-scored clinical competencies must meet benchmarks to progress in the TEP.	Competency-based school intervention will be targeted to the schools serving the highest-need students. Constant capture of practice through Teachscape technology will occur at the classroom, PLC, post-conference and school leadership team levels. "Just in Time" and data-driven interventions will be used to address educator development needs.
Place	Teacher candidates in the competency based TEP will be placed in LISD in high-need schools participating in the Competency-based School Intervention (i.e., Part B)	<ul style="list-style-type: none"> • LISD teachers that demonstrate high competency are offered salary incentives to recruit them to teach in schools serving highest-need students. • The strongest performing principals have been transferred to schools serving highest-need students. • Ineffective teachers will be replaced with the strongest graduates of the competency-based TEP.
Reward	Teacher candidates scoring highest on subject-area, pedagogical, and student growth measures earn the highest grades.	LISD teachers that demonstrate high competency (subject-area, pedagogical, impact on student achievement) are eligible for performance bonuses
Retain	Well-prepared new teachers stay in the profession; poorly prepared less so. Also, in the school-university partnership, beginning teachers will be supported with competency-based mentorship.	<ul style="list-style-type: none"> • LISD teachers that demonstrate high competency will be retained in high-functioning, competency-based schools with strong teacher leaders and principals. • Ineffective teachers/principals will leave such schools because of the constant intensity of the competency-based model.

INNOVATION-PART A: Competency-based Preservice Teacher Education Program

The first part of our school-university partnership simultaneous reform plan (which is outside of the \$3 million funding request of this i3 proposal but INCLUDED in the goals and evaluation plan) is a competency-based initial teacher education program to be piloted in LISD. Funds for this competency-based teacher education reform initiative have been committed by TTU and the COE. The pilot will be a district immersion-based, clinically intensive program. Middle school teacher candidates in math & science from TTU (screened by subject-area

mastery and Haberman dispositional measures) will be taught university courses in district and experience significantly greater classroom teaching time, including year-long student teaching and three competency-based, rubric-scored performance assessments *per semester*. Assessment of clinical competency will focus on: a) demonstrated subject-area mastery, b) demonstrated pedagogical mastery, and c) impact on students' academic growth based on formative (benchmark) assessments. These competency-based performance assessments will be *formative*, designed to systematically shape the expertise and mastery of teacher candidates. Teacher education program coursework will be redesigned to explicitly shape teacher candidates' emerging clinical competency using research-based teaching practices.

INNOVATION -PART B: Competency-based School Intervention

The partnership will implement and test the efficacy of a Competency-based School Intervention model in six historically struggling schools in LISD (i.e., two high schools and four middle schools). This model has two foundational principles that make it unique.

FOUNDATION #1: A clear, highly-articulated and shared definition of classroom competency: Practitioners and researcher must have a clear and measurable vision of what exemplary performance looks like. There must be agreement on how competency is to be measured and there must be inter-rater reliability training for all parties on the measures. Both in subject-area and general pedagogical arenas, there are a number of research validated measures of observed teaching performance (e.g., Greenberg, Cohen, & Mullen, 2008; Hill, et al. 2008; Pianta, La Paro, & Hamre, 2008). This model will articulate teacher competency in three domains.

1. **CONTENT:** Demonstrated mastery in observed rubric-scored subject-area knowledge (demonstrated depth of understanding, clarity, and coherency of subject presentation, fluency & flexibility of approach with a variety of learners, quality of teacher-student and student-student subject-area discourse). One possible measure of observed subject-area competency in mathematics is the RTOP: Reformed Teaching Observation Protocol (Piburn et al., 2000).
2. **PEDAGOGY:** Demonstrated mastery in observed rubric-scored instruction (high engagement of all learners, inquiry-based, student-lead learning, multiple forms of student demonstration of understanding, real-world applications of academic understanding). One possible measure of observed pedagogical competency in mathematics is the MQI: Mathematical Quality of Instruction Protocol (Hill et al., 2008).
3. **STUDENT OUTCOMES:** Evidence of teacher impact on student learning growth and achievement from ongoing formative (and summative state-level) assessments as well as evidence of teachers' *ongoing use* of student assessment data to guide instruction for the purpose of facilitating students' mastery on learning targets. Benchmark assessments for chronicling students' academic growth in classrooms are widely available.

FOUNDATON #2: *Continuous observation and analysis of practice driving formative feedback, coaching and instruction to shape competency-based mastery.* Competency-based facilitation targets *cognitive* (understanding content and/or pedagogical strategies), *behavioral* (communicating content with coherency, demonstrating highly engaging instruction), and *dispositional* (a sense of self-efficacy about one's content knowledge and/or pedagogical strategies) learning outcomes.

Competency-based feedback and shaping are based on multiple rubric-scored observations and data from formative student assessments. Feedback and shaping are ongoing.

Processes include: a) expert feedback on numerous videos and from walk-throughs, b) 4-to-6 formal teacher leader/administrator teaching observations and post-observation feedback conference cycles per teacher per year, c) professional learning community (PLC) events driven by competency-based observation and student achievement data trends, and d) tech-enabled teacher-to-teacher, peer-teaching observation and support.

Competency-based School Intervention Pilot Design/Implementation

The Competency-based School Intervention model will be piloted in six historically struggling schools in LISD and spread to 25 schools across Texas. The project will use Teachscape video capture technology to allow constant observation of classroom and school practice. With this technology, *observation and analysis can occur at a distance*.

Ongoing observation using Teachscape will occur at four-levels: 1) classroom teaching, 2) PLC events, 3) post-observation conferences with individual teachers, and 4) school-site leadership meetings. Facilitation at all four levels is a core feature of this competency-based model because the four levels represent the essential teaching, development, and leadership practices that determine school norms and outcomes. Focusing on the classroom teaching level alone ignores the powerful influence of the organizational system (e.g., Marzano, 2003).

Observation and analysis will be conducted by a school-university-business expert team including personnel from TTU, TI, and LISD teacher leaders and principal(s). Observation will lead to joint planning of interventions. Observations and interventions will occur in real time. Interventions will be driven by the nature of the observed need and occur during the school day. Table 3 elaborates the multiple levels of the Competency-based School Intervention.

Table 3. Competency-based School Intervention Model – Levels of School Support

Facilitation Levels & competency-based foci (i.e., Foundation #1)	Who Views Continuous Observation of Rubric-Scored Competency & Monitoring of Student Growth	Resulting Feedback & Shaping Action & Characteristics
1. Classroom Teaching (content area, pedagogy, student engagement and student learning outcomes)	TI, TTU COE math methods & assessment faculty, TTU A&S Math faculty, LISD Teacher Leaders (TLs) & Administrators Ongoing teaching observations captured using TEACHSCAPE	Ongoing teaching observation & formative assessment data are used to plan professional development in a PLC setting and for individual teacher support. Relevant TI and/or TTU content, pedagogical, and/or assessment experts deliver “just in time” instruction that is situation-and-need specific.
2. Professional Learning Community Events (effectiveness of grade-level or departmental training, planning time and personnel)	TI and TTU COE instructional & Ed leadership faculty, TTU math faculty, LISD TLs & Admin PCL delivery is both face-to-face and online synchronous formats. PLC events are captured through TEACHSCAPE	Ongoing observation of PCLs is used to plan formative professional development for LISD TLs & administrators. COE Ed leadership faculty coach TLs & principals on the facilitation of competency-based PLC implementation (weekly) and/or individual teacher support.
3. Post-Observation Conference Feedback/ Shaping (effectiveness of TL/ Teacher meetings in reaching consensus on strengths, areas for improvement)	TTU COE instructional and Ed leadership experts, TTU A&S, LISD TLs & Admin Face-to-face post conferences are video captured through TEACHSCAPE	Ongoing observation of post-conferences is used to plan formative professional development for LISD TLs and administrators. COE and A&S faculty coach TLs & principals to conduct individual teacher post-observation conferences.
4. School Site Leadership (effectiveness of site admin and TLs in planning & implementing competency-based facilitation)	TTU COE instructional and Ed leadership experts, LISD TLs & Admin, LISD Central Admin Face-to-face TL/administrator meetings are video captured through TEACHSCAPE	Ongoing observations of school site leadership meetings as well as a portfolio of facilitation events to plan formative professional development for LISD TLs and administrators. COE Ed leadership faculty coach the school team.

- Teachers are formally evaluated on content, pedagogy, & student outcomes by administrators and teacher leaders 4-6 times per year
- The specific nature of professional development will range widely, based on teacher, teacher leader, principal competency evidence.
- In LISD, we will begin with the targeted TI Math Forward intervention in mathematics (grades 6-9), the District’s highest need.

Overview of Competency-based School Intervention Model		
Facilitation Levels	Facilitation Phases	Model Components
1. Teachers' Classroom Instruction	1. Getting Ready (approximately 4 months) <ul style="list-style-type: none"> Defining competencies: content, pedagogy, student outcomes Selecting, training, & establishing inter-rater reliability on competency scoring rubrics & formative assessments (with teachers, teacher leaders, school, district administrators) Conducting competency-based PLCs, post-conferences, site leadership meetings 	a. Curriculum Innovation <ul style="list-style-type: none"> Begin implementation of model with innovative curriculum or pedagogical intervention in area determined by need data
2. Professional Learning Community Events	2. Co-Facilitation (approximately 9 months) <ul style="list-style-type: none"> TI, TTU, LISD joint observation, scoring, planning and intervening in PLCs and post-conferences TTU coaching the site leadership team 	b. Competency-based Facilitation <ul style="list-style-type: none"> Levels & Phases noted in columns one & two
3. Post-Observation Conferences	3. Scaffolded Phase-out (approximately 5 months) <ul style="list-style-type: none"> TI, TTU monitor teacher leader/administrator interventions w/ supports as needed 	c. Teachscape Capture Technology
4. Site Team Meetings	4. Web & Consultation Resources <ul style="list-style-type: none"> 24/7 web access to resources and on-call at-a-distance consultation 	d. Evidentiary Research <ul style="list-style-type: none"> Formative & Summative

- The needs and academic challenges of the target school drive the composition of the TTU intervention team (e.g., mathematics, reading, special education, diversity or language learning faculty expertise)
- After demonstrating the capacity for independent leadership of competency-based operations, TTU phases out, but all school personnel have continuous access to web-based resources and on-call consultation
- The approximate time to school's independent mastery of competency-based operations is 18 months (+ or – based on competency)

Research & Rationale: Will the Competency-based Model Produce Results?***Competency-based Preservice Teacher Education Program***

One of the loudest and most longstanding critiques of teacher education is the programmatic chasm between academic theory and clinical practice (e.g., Beck & Kosnik, 2002; Cobb, 2000; Connor & Killmer, 2001; Latham & Vogt, 2007; Levine, 2006; Mantle-Bromley, Gould, & McWhorter, 2000; Slick, 1998; Zeichner, 1990). The norm in many teacher education programs is that education professors teach theories, concepts, research methodology, and subject area methods. Usually instruction is at a conceptual (i.e., seat time, shallow assessment) level. Good teaching is only discussed; it is not observed (or modeled). Many education professors have little or nothing to do with teacher candidates' clinical experiences. Instead, teacher candidates are observed by supervisors from a college of education field experience office that are usually unfamiliar with the theories, concepts, and practices taught by education professors. Thus, the "high ideas" of the education faculty may be lost.

The competency-based teacher education program explicitly and actionably bridges theory and practice. In fact, it places clinical competency at the pinnacle of targeted programmatic learning outcomes and sets theory in service to this goal. This transformative shift has been endorsed by NCATE President James G. Cibulka and a national blue ribbon panel of American educators (Blue Ribbon Panel on Clinical Preparation, Partnerships and Improved Student Learning, 2010) who state that teacher education must, "move to programs that are fully grounded in clinical practice and interwoven with academic content and professional courses" (p. 2).

Competency-based School Intervention Model

An immense body of research from sports (e.g., Olympic gymnastics) the arts (e.g., theatre, dance) and other skill professions (e.g., nursing, business, psychotherapy, medicine, media) suggest that complex, expert performances can be improved with in-depth observation, feedback and shaping (e.g., Albanese, Mejicano, Anderson, & Gruppen., 2010; Evers, Gerke, & Menkhoff, 2010; Mezey et al., 2011; Cheng, Wang, Yang, Kinshuk, & Peng, 2011; Kenkel, 2009).

For example, Langdon and Cunningham (2007) found that high fidelity situational simulation training improved the skillful performances of practitioners in the fields of anesthesia, dentistry, and nursing in Ireland. Participants were evaluated and supported in the development of clinical skills, situational awareness, decision-making skills, communications and team work.

Within the education professions, there is renewed interest in competency-based research from the late 1970's to date, mainly by European researchers (e.g., Sampson, 2009; Struyven & De Meyst, 2010). American educational research interest in competency-based learning died in the early 1980's because of its affiliation with behavioral psychology and focus on complex combinations of atomistic behaviors at the time (e.g., Pelton, 1972). The new focus on competency-based learning targets the evaluation and shaping of more holistic, skillful performances.

Eleven years ago the government of Belgium decreed the use of competency-based education in teacher preparation programs because of a concern similar to the one expressed in this proposal: large gaps between new teacher knowledge and skill-based competencies. According to Struyven and De Meyst (2010), the competence-based education movement in that country is slowly shifting from an “illusory to a reality state” of implementation (p. 1509). Based

on their research, the authors reinforce the importance of operational definitions of competencies, targeting a limited number of competencies and assessing instructional methods for impact on competency development.

In regard to competency-based facilitation as a *school intervention*, the research literature surrounding comprehensive school reform initiatives such as the Teacher and Student Advancement System (TAP) are instructive. TAP comprehensive reform schools have components similar to those conceived in the competency-based school intervention. These components include school-based master and mentor teachers trained to evaluate teachers on a TAP instructional rubric (i.e., a performance assessment focused on general pedagogical practices), common planning time (called “cluster groups”), and formal evaluations of teachers by master and mentor teachers and/or principals four-to-six times a year.

In evaluations of TAP schools across the nation, high-need students in TAP schools significantly outperformed students in matched schools. Specifically, using independent SAS EVAAS analysis, TAP schools were found to have raised student achievement by a significantly greater amount than matched comparison schools in the same communities and states (Springer, Ballou, & Peng, 2008).

Hypotheses

From the rich research base on competency-based learning in a number of professions, as well as the comprehensive school reform literature, we hypothesize that:

PART A – Competency-based Preservice Teacher Education: New teachers prepared in the reformed competency-based teacher education program will significantly outperform new teachers prepared in traditional programs on rubric-scored subject-area and pedagogical

measures of competency as well as impact on student achievement growth and level (formative and summative).

PART B – Competency-based School Intervention will: 1) measurably increase teacher, teacher leader, and principal rubric-scored effectiveness, resulting in significant gains in student academic achievement including learners with special needs, 2) prove to be additive to the introduction of curriculum innovations such as TI MathForward, and 3) be internalized within target schools and persist post-intervention.

The rationale for hypothesis two is based on the logic that novel curriculum innovations (TI MathForward) are more likely to be implemented with fidelity in a competency-based school setting. Basia Hall, MathForward Regional Supervisor for TI, recently reported (personal communications) that her extensive experience implementing the TI program in a number of schools confirms this logic. She stated, “If the principal is not a competency-based instructional leader, the odds for program impact and sustainability are limited.”

Project Goals, Objectives, Program Evaluation and Research Design

In the spirit of “backward lesson planning” (Wiggins & McTighe, 1998), we now elaborate the goals and objectives for the project, linked to program evaluation measures and a data collection plan (i.e., Tables 4 - 7). After elaborating what we hope to achieve and how it will be assessed, we continue with the description of a research design to test the efficacy of the model. Actions emanating from the project goals and objectives are articulated in the management plan beginning on page 28.

Table 4. GOAL 1 (Part A): By the beginning of the 2012 school year in August, the school-university partnership will design and implement in Lubbock ISD a district-based, clinically intensive teacher education program that yields new teachers who are rated as highly competent in subject-area, pedagogy and (by the second year of teaching) produce student achievement gain scores greater than the district average. Grow the reformed teacher education programs to Lamesa and Dallas-Fort Worth by 2015.

Objectives	Program Evaluation		
	Measures	When	By Whom
a. Work with the TTU College of Arts & Sciences to screen and recruit the most talented, experienced and committed teacher candidates into the rigorous competency-based teacher education program	<ul style="list-style-type: none"> Disposition screening & interviews (Habenman) Subject-area course grades and competency exams Communication skills Life experiences and personal traits (tenacity) 	Begin January 2013 Semester Review	TTU Teacher Education Council & COE
b. Offer district immersion-style, competency-based teacher education programs in certification areas of expressed partner district need (e.g., in LISD, Middle School, Bilingual + Math or Science Dual Certification)	<ul style="list-style-type: none"> Partner district need surveys Hiring rates 	Complete by January 2015 Annual Review	Dean and COE Leadership Team
c. Use teacher candidate clinical competency data (subject-area, pedagogy, impact on student achievement) to formatively modify and adjust teacher education programs to better foster graduates' mastery of competencies.	<ul style="list-style-type: none"> Trend analysis on teacher candidates Teacher candidate evaluations Partner district evaluation of graduate competencies Value-added analysis (e.g., EVAAS) 	Begin January 2013 Annual Review	Dean, COE Leadership Team including Director of Teacher Prep
d. By 2015, all TTU COE teacher preparation will be competency-based including expansions to rural West Texas regions and the reform of teacher education programs currently in Dallas-Fort Worth.	<ul style="list-style-type: none"> Comparative analysis of teacher candidate formative and summative competency scores by program, by location 	Complete 2015 Annual Review Begin 2012	Dean, COE Leadership Team including Director of Teacher Prep

Table 5. GOAL 1 (Part B): By the beginning of the 2012 school year in August, the school-university-business partnership will implement and test the impact of a model of technology-enabled competency-based school intervention in mathematics at six historically low-performing middle and high schools in Lubbock Independent School District. This will result in:

Objectives	Project Evaluation		
	Measures	When	By Whom
a. Ethnically diverse, high-need & historically failing students achieving one and one half grade levels in an academic year & performing at the “commended” (i.e., college readiness benchmark) level on mathematics on the state (STAAR) exam	<ul style="list-style-type: none"> • Calculation of student academic growth on state (STAAR) & district benchmark assessments in mathematics 	Annual (state) Quarterly (district)	Participating School; TI, TTU, & LISD Teacher Leaders & Administrators
b. Demonstrated mastery of mathematics teachers in grades 6-9 in content knowledge, engaging & inquiry-based pedagogy, and measured impact on the academic growth of a range of diverse learners	<ul style="list-style-type: none"> • Rubric-scored observational assessment of teacher’s clarity, rigor & coherency in mathematics content • Rubric-scored observational assessment of teacher’s inquiry-based pedagogy & student engagement in mathematics instruction • Students’ formative progress on benchmark assessments in mathematics & teachers’ impact on student growth using value-added methodology on the state exam 	4 to 6 times per year Ditto Quarterly Annual	TI, TTU, & LISD Teacher Leaders & Administrators Independent Evaluator
c. Demonstrated mastery of teacher leaders & administrators to independently lead the facilitation of competency-based professional development & instructional support at their building maximizing teacher mastery & student achievement	<ul style="list-style-type: none"> • Rubric-scored observational assessment of teacher leader & administrator facilitation skills during PLCs, post-conferences, & leaderships meetings • Teacher “working conditions” survey of the effectiveness of school function & leadership • Formative & summative measures of teacher competency on content, pedagogy, and student learning outcomes (see measures in “b” above) • Formative & summative measures of student learning outcomes (see “a” above) 	4 to 6 times per year Annual Part of review 4 to 6 times per year Ditto	TI, TTU & LISD central admin. Math teachers TTU Ed faculty & LISD Central Independent Evaluator

Table 6. GOAL 2: By the beginning of the 2014 school year in August, the school-university-business partnership will expand the implementation of the pilot tested competency-based school intervention model via distance delivery to schools in districts across the state of Texas improving the achievement of at least 22,155 high-needs students by December 2016.

Objectives	Project Evaluation		
	Measures	When	By Whom
Successfully implement the Competency-based School Intervention model in the rural West Texas school district of Lamesa & in the Dallas and Fort Worth Independent School Districts	TRACKING EXPANSION: Expanded into West Texas rural district by Aug 2014; Initiated model in six DFW school sites by August 2015. RESULTS: Target schools demonstrate Goal 1.B outcomes as measured for Objectives A, B, C	annual	Independent Evaluator

Table 7. GOAL 3: By August 2016, the school-university-business partnership will have disseminated a body of research on the efficacy of the Competency-based School Intervention model through a variety of venues and established a support structure to provide specific and in-depth implementation consultation.

Objectives	Project Evaluation		
	Measures	When	By Whom
Support the successful implementation of the Competency-based School Intervention model with at least five peer school-university partnerships across the country.	FORMAL AGREEMENTS: MOU to consult in at least five school-university partnerships across the country	Annual	Independent Evaluator
	FACILITATION CAPACITY: Scores of the five new school-university partnerships on the battery of rubric-scored assessments of 4-level facilitation processes, instruction and coaching procedures	Annual	Ditto
	RESULTS: Target schools demonstrate Goal 1.B outcomes as measured for Objectives A, B, C	Annual	Ditto

Experimental Design for Testing the Efficacy of the Competency-based Model

Part A: Competency-based Preservice Teacher Education Program

A logic model and research questions for Part A of the competency-based model can be found in Appendix J. Three comparative analyses will be conducted to address the research questions. For questions one and two, a repeated measures MANCOVA will explore whether there is growth in teacher candidates' measured subject-area, pedagogical, and student achievement impact over the course of the teacher education program. This analysis will compare changes over time by program certification area and program location. Second, potential differences in the dependent variables over time will be examined for admitted teacher candidates who scored higher and lower on the screening variables (e.g., subject-area grades, qualifying exams, Haberman dispositions).

The second analysis, conducted post-graduation on an annual basis in partner school districts will use MANCOVA analyses to compare three groups of teachers on competency-based scores (i.e., rubric-scored subject-area mastery, rubric-scored pedagogical mastery, and EVAAS value-added impact on student growth). Comparison groups will be: 1) TTU graduates of competency-based teacher education programs, 2) TTU graduates of traditional teacher education programs, and 3) graduates of other teacher education programs. Covariates for this analysis will be teachers': a) years of service, b) grade level taught, and c) subject taught as applicable. The third analysis will compare TTU graduates from the competency-based teacher education program with the district mean value-added scores. The analysis will further explore differences by years of service, grade level, and subject as applicable.

Using G*Power software (Dattalo, 2008) and setting power at .8 with an alpha of .05, we are confident that our sample size will minimize Type I & II errors (i.e., Analysis One: N=500, Analysis Two: N=250, Analysis Three: N=400).

Part B: Competency-based School Intervention

A logic model and research questions for Part B of the competency-based model can be found in Appendix J. A quasi-experimental design will be used to test the research questions. Three treatment conditions will be assessed: 1) TI MathForward curriculum only, 2) TI MathForward curriculum + Competency-based School Intervention, and 3) Control. The schools representing the three treatment conditions will be carefully matched based on demographics, historical student achievement, and teachers' baseline performance on the math subject-area and pedagogical competency scoring rubrics.

The dependent variables for the analysis will include: 1) grade 6-9 student achievement in mathematics—formative benchmark and summative, 2) teachers' math subject-area competency, 3) teachers' pedagogical competency, 4) teachers' "value-added" impact on students' academic growth—formative benchmark and summative, 5) rubric-scored efficacy of teacher leader facilitation of PLC events, 6) rubric-scored efficacy of teacher leader and/or principal facilitation of post-observation conference meetings with individual teachers, 7) rubric-scored efficacy of school leadership team meeting in independently leading competency-based operations. To address research questions five and six, the time-series collection of data will continue for a minimum of one academic year post-intervention.

A repeated measures MANCOVA will be used to explore potential differences among the treatment conditions over time. Again, power analysis, set at .8 and alpha at .05, assures us that

our projected sample size of over 200 teachers is sufficient. In years three through five of the project, potential sample sizes will be significantly greater. This will be necessary for comparative analyses involving teacher leaders and principals.

Expansion Partner Districts & Demographics

After pilot testing the competency-based model, the project will expand to three other partner school districts. First, Lamesa Independent School District (i.e., initial planning during the spring of 2014) will implement the competency-based model in two schools. Lamesa ISD is in a rural community in West Texas (just south of Lubbock) with a student population of 1924 students. Lamesa ISD is majority minority with 74% Hispanic and 6% African-American students. The TEA reports that 74% of Lamesa ISD students are economically disadvantaged. Academically, Lamesa ISD was rated as “unacceptable” on 2010 state accountability ratings. The dominant area of academic struggle for Lamesa ISD students is mathematics.

In 2015, the competency-based school intervention project will expand to Dallas ISD and Fort Worth ISD (i.e., beginning with three schools in each district). The COE at TTU already has existing teacher education programs with approximately 120 teacher candidates in these two districts. Dallas ISD has a population of 156,128 students of whom 68% are Hispanic and 28% African-American. 87% of Dallas ISD students are economically disadvantaged. In 2010, Dallas ISD earned a state accountability rating of “acceptable.” Fort Worth ISD has 80,104 students of whom 61% are Hispanic and 25% African-American. 75% are economically disadvantaged. In 2010, Fort Worth ISD earned a state accountability rating of “acceptable.” Both districts struggle in mathematics and reading at the high school and middle school levels.

Cost per Student Projections

PART A – Competency-based Preservice Teacher Education Program: There are NO additional costs projected in association with the implementation of the competency-based preservice teacher education program. Competency-based reforms will require reallocations of resources within existing college budgets.

PART B – Competency-based School Intervention: The initial start-up cost per student in the six model validation schools is \$157. This includes the net cost for the TI MathForward curriculum and the one-time purchase cost for the Teachscape video capture units (after in-kind cost-share reductions). The operational cost to implement the Competency-based School Intervention model is \$130 per student. This cost is based on the assumption that schools will take an average of 18 months (or two academic years) to reach independent mastery on competency-based leadership and operations. Thereafter, schools will have access to web-based resources and on-call, at-a-distance consultation. This ongoing service is optional and will cost \$3 per student. Given these costs, the projected investment to reach 100,000 students is \$13 million. Over the long-term (post-grant), as IHE capacity for direct school intervention becomes internalized, cost per student will continue to decline.

The sustainability of university involvement in competency-based school intervention will result from fee-for-service revenue paid by the partner district institution. If the intervention is measurably effective and sustained, school leaders have expressed intent to pay such fees. Fee-for-service revenue will provide colleges of education and arts & sciences with proceeds to establish K-12 school evaluation and support services as another core business within the college.

Personnel and Management Plan

The lead on this project, Dr. Scott Ridley, is the Dean of the COE at TTU. Before coming to TTU, Dr. Ridley successfully led several large-budget, statewide reform initiatives at Arizona State University funded by the U.S. Department of Education (2009 Teacher Quality Partnership, 2010 Teacher Incentive Fund). In addition to Dr. Ridley, the TTU Leadership Team will consist of six university members; three in each of the two parts of the competency-based model:

Part A: Competency-based Preservice Teacher Education Program

1) ***Dr. Doug Hamman*** (Co-PI) is Director of Teacher Education Programs and an associate professor in Educational Psychology in the COE at TTU. He leads teacher education reforms in the college in partnership with LISD and other districts. He has published extensively on teacher preparation and is currently involved in research with LISD on using value-added methodology to determine teacher effectiveness. 2) ***Dr. Pam Tipton*** (Co-PI) is the Director of Certification and the Assistant Director of Teacher Education Programs in the COE at TTU. Along with Drs. Hamman and Johnson, Dr. Tipton is leading the reform of clinical shaping. She has extensive experience with the Teacher Work Sample (i.e., Renaissance Project) as a measure of culminating competency and is now working to create a system of formative shaping of clinical competency. 3) ***Dr. Peggy Johnson*** (Co-PI) is the Vice Dean and associate professor of Curriculum and Instruction in the COE at TTU. She has been in leadership roles at TTU for a number of years and has extensive experience in teacher education and deep relationship with leaders in a number of partner districts including LISD.

Part B: Competency-based School Intervention

1) **Dr. Jeffrey Lee** (Co-PI) is an associate professor of Mathematics and Statistics at TTU. He is a research mathematician in differential geometry and also is also actively engaged in mathematics outreach efforts in a number of K-12 schools. Dr. Lee is a Co-PI on the Noyce Scholarship grant. 2) **Dr. Shirley Matteson** (Co-PI) is an Assistant Professor of Middle Level and Mathematics Education. She is a National Board Certified Teacher in Early Adolescence/Mathematics. With her research, experience and training, Dr. Matteson will be an important leader in both the teacher education and school intervention components of the competency-based model. 3) **Dr. Fernando Valle** (Co-PI) is an Assistant Professor in Educational Leadership. He is an active collaborator with area K-12 schools on leadership development and has years of expertise working with high-need populations.

LISD: 1) **Dr. Kelly Trlica** is the Chief Academic Officer in LISD. She is in her second year in the district, previously serving as an Assistant Superintendent in Houston ISD. She is responsible for overseeing the comprehensive academic program across the District, including supervision of campus principals, instructional program implementation, and student achievement. 2) **Dr. Lisa Leach** is the Assistant Superintendent in LISD for Curriculum & Instruction. She is in her second year in the district, previously serving as Assistant Superintendent for Roosevelt ISD. Her responsibilities include planning and implementing the systemic curriculum, instruction, and assessment program for the district. 3) **Amador Vasquez** is the K-12 Mathematics Coordinator in LISD. He is in his first year in the district, previously working for the Region 1 Education Service Center in Edinburg, Texas. He is responsible for the district-wide mathematics program.

TI: *Basia Hall*, a Texas Instruments MathForward Supervisor, coordinates and monitors the implementation of the MathForward program, serves as a mentor to the TI Implementation Specialists, and acts as a liaison between TI and district administration. She has 36 years of teaching and administrative experience. Basia was a recipient of the Presidential Award for Excellence in Mathematics Teaching, co-authored the Texas Essential Knowledge and Skills for high school, as well as multiple mathematics education resources including a high school mathematics textbook series for a national publisher, and state level professional development trainings.

The Haberman Educational Foundation: *Delia Stafford*, President & CEO of the HEF, Inc. She is a former classroom teacher, instructional specialist, and director of the first school-based alternative teacher certification program in America in Houston Independent School District.

Independent Evaluator: The TTU-LISD-TI-HEF partnership has identified an independent evaluator with strong credentials in program evaluation and methodology. ***Dr. Jane Lincove*** is an assistant professor in the LBJ School of Social Affairs at the University of Texas at Austin. She is the Co-Director of the School's Project on Educator Effectiveness & Quality (PEEQ) program. Dr. Lincove, along with Dr. Cynthia Osborne and their staff have worked with the TEA on state level education evaluations and have extensive expertise.

This school-university-business partnership team represents the highest levels of leadership in their respective organizations, thus assuring institutional commitment to and resources for this project.

The management plan for the project is detailed on Tables 8 through 11. The actions steps are broken down by project goals. This proposal ends with a brief summary of the potential strategic implications of the competency-based model.

Table 8. GOAL 1 (Part A) Work Plan: By the beginning of the 2012 school year in August, the school-university partnership will design and implement in Lubbock ISD a district-based, clinically intensive teacher education program that yields new teachers who are rated as highly competent in subject-area, pedagogy and (by the second year of teaching) produce student achievement gain scores greater than the district average. Grow the reformed teacher education programs to Lamesa and Dallas-Fort Worth by 2015.

- a. Work with the TTU College of Arts & Sciences to screen and recruit the most talented, experienced and committed teacher candidates into the rigorous competency-based teacher education programs
- b. Offer district immersion-style, competency-based teacher education programs in certification areas of expressed partner district need (e.g., in LISD, Middle School, Bilingual + Math or Science Dual Certification)
- c. Use teacher candidate clinical competency data (subject-area, pedagogy, impact on student achievement) to formatively modify and adjust teacher education programs to better foster graduates’ mastery of competencies
- d. By 2015, all TTU COE teacher preparation will be competency-based including expansions to rural West Texas regions and the reform of teacher education programs currently in Dallas-Fort Worth.

Activities	Milestones	Timeline	Responsible
• Create a TTU-LISD planning team to determine implementation timelines and key personnel	• Competency-based teacher education reform is co-owned	June 2011	Hamman
• TTU-LISD agreement on competency measures and “hard” timelines for calibration training	• Competency is operationally and uniformly defined by school-university partners	August 2011	Hamman
• Training of TTU and LISD leaders, mentors, faculty on the competency measures	• Inter-rater reliability and teacher understanding of how excellence is defined	December 2011	Hamman, Tipton
• Review and revision of existing teacher education courses to ensure explicit facilitation of teacher candidates’ clinical competencies	• Explicit, actionable integration of theory and practice in the teacher education program	March 2012	Hamman, Matteson, Tipton, Johnson
• Launch fully-reformed competency-based program with three formative performance assessments per semester	• First pilot program leading college reforms	August 2012	Hamman, Matteson

Table 9. GOAL 1 (Part B) Work Plan: By the beginning of the 2012 school year in August, the school-university-business partnership will implement and test the impact of a model of technology-enabled competency-based school intervention in mathematics at six historically low-performing middle and high schools in Lubbock Independent School District. This will result in:

- a) Ethnically diverse, high-need and historically failing students achieving one and one half grade levels in an academic year and performing at the “commended” (i.e., college readiness benchmark) level on mathematics on the state (STAAR) exam;
- b) Demonstrated mastery of mathematics teachers in grades 6-9 in content knowledge, engaging and inquiry-based pedagogy, and measured impact on the academic growth of a range of diverse learners; and
- c) Demonstrated mastery of teacher leaders and administrators to independently lead the facilitation of competency-based professional development and instructional support at their building maximizing teacher mastery and student achievement.

Activities	Milestones	Timeline	Responsible
• Sign MOU agreement to ensure fidelity and timeliness of model implementation by TTU, TI and LISD	• All parties have a clarity on expectations and signed commitment meet them	Dec 2011	Ridley TTU
• Hire independent evaluator with strong methodological skills (Dr. Cynthia Osborne at UT Austin)	• External evaluator/consultant in place before treatment schools are assigned	Dec 2011	Ridley TTU
• Determine the treatment status of LISD schools: a) TI only, b) TI + Competency-based, or c) Control	• A clear research design is set at the beginning of the validation study	Dec 2011	Ridley TTU Trlica LISD
• Hire Lead School Intervention Coordinator. and graduate students	• Front end expertise on school reform & grad students to foster analytical turnaround	March 2012	Ridley TTU
• Jointly select competency criteria and rubrics for content-area knowledge, pedagogical skills, and agree on benchmark assessments and frequency	• Absolute clarity on what constitutes competency – content-area, pedagogy, formative student academic growth	March 2012	TTU and LISD leadership
• Train and calibrate on the competency rubrics: site teachers, teacher leaders, principals, TTU faculty	• Clarity and inter-rater reliability on competency criteria by leaders and site educators	May 2012	TTU & LISD leaders & site educators

<ul style="list-style-type: none"> • Enact TEACHSCAPE and set structure and timeline for captures and analysis of classroom teaching, PLCs, post-conferences, school leadership meetings 	<ul style="list-style-type: none"> • Establish and normalize the capacity for “real time” analytical turnaround 	May 2012	TTU & LISD leaders
<ul style="list-style-type: none"> • Create a highly accessible database for recording and analyzing rubric and student performance data. 	<ul style="list-style-type: none"> • Quick and easy access to competency data and trends 	May 2012	Ridley TTU
<ul style="list-style-type: none"> • Set a structure and timeline for using competency scoring and student achievement data to plan “just in time” PLC events, post-conferences, teacher leader, principal and leadership team professional development 	<ul style="list-style-type: none"> • All interventions (focus and nature) are driven by competency data: observed, rubric-scored performances, student achievement data – interventions are “just in time” to address need 	May 2012	TTU & LISD leaders
<ul style="list-style-type: none"> • Train teacher leaders and principals to enact 4-to-6 cycles of rubric-scored teacher evaluation – each cycle to include a pre-conference, teaching observation and post-instruction-conference 	<ul style="list-style-type: none"> • Teachers receive individualized feedback and support on a continuous basis; teacher leaders and administrators become instructional experts 	June 2012	TTU & LISD leaders; site leadership teams
<ul style="list-style-type: none"> • Set site performance criteria for scaffolded phase out by TTU personnel 	<ul style="list-style-type: none"> • Benchmark and mastery performance levels set to foster school leadership team independence 	July 2012	TTU & LISD leaders
<ul style="list-style-type: none"> • Pilot web site and resources with LISD educators 	<ul style="list-style-type: none"> • Ensure the value of resource post-intervention 	Jan 2013	TTU leaders
<ul style="list-style-type: none"> • Refine the model as necessary using competency and student data and analysis of participant survey data 	<ul style="list-style-type: none"> • Design research orientation with constant improvement of the model 	ongoing	TTU & LISD leaders

Table 10. GOAL 2 Work Plan: By the beginning of the 2014 school year in August, the school-university-business partnership will expand the implementation of the pilot tested competency-based school intervention model via distance delivery to schools in districts across the state of Texas improving the achievement of at least 22,155 high-needs students by December 2016.

- a) Successfully implement the competency-based facilitation model in the rural West Texas school district of Lamesa and in the Dallas and Fort Worth Independent School Districts.

Activities	Milestones	Timeline	Responsible
<ul style="list-style-type: none"> Determine areas of academic need in the expansion district and create a cross-university competency-based facilitation team (e.g., reading, special education) 	<ul style="list-style-type: none"> The competency-based model and related TTU resources to address needs are flexible and driven by partner district data 	Spring 2014	TTU Leaders
<ul style="list-style-type: none"> To ensure fidelity and timeliness of model implementation make signing of an MOU a pre-condition of expansion into a particular district/school 	<ul style="list-style-type: none"> All partners and participants are aware of the model, the intensity of implementation and the outcome targets 	Spring 2014 & 2015	TTU Leaders and Expansion Leaders
<ul style="list-style-type: none"> Determine a not-for-profit fee-for-service pricing structure 	<ul style="list-style-type: none"> A break-even cost structure is established ensuring post-grant sustainability and expansion 	Fall 2014	Ridley TTU
<ul style="list-style-type: none"> Use LISD validation data to shape the program for expansion including the development of online modules representing model components: 1) innovative curriculum, 2) competency-based facilitation, 3) video capture technology, and 4) evidentiary research 	<ul style="list-style-type: none"> Expertise from model validation is made accessible on the web to enhance awareness of the model and implementation components 	Fall 2014	TTU Leaders

Table 11. GOAL 3 Work Plan: By August 2016, the school-university-business partnership will have disseminated a body of research on the efficacy of the competency-based facilitation model through a variety of venues and established a support structure to provide specific and in-depth implementation consultation.

- a) Support the successful implementation of the competency-based facilitation model with at least five peer school-university partnerships across the country.

Activities	Milestones	Timeline	Responsible
<ul style="list-style-type: none"> Develop a national special-interest-group of interested school-university partnerships in competency-based school facilitation and teacher education (e.g., AERA) 	<ul style="list-style-type: none"> A national network of school-university partnerships is activated to research and spread best practices around competency-based reform 	Spring 2013	Ridley and TTU leaders
<ul style="list-style-type: none"> Use project web site and Web 2.0 design to enable interested school districts and universities to learn about the model and implementation sites 	<ul style="list-style-type: none"> Interested schools and universities have imitate access to the model, to research and participants 	Spring 2013	TTU leaders
<ul style="list-style-type: none"> Link to the Gate Measures of Effective Teaching (MET) Project to highlight competency-based facilitation and the impact of school culture & leadership on teaching effectiveness 	<ul style="list-style-type: none"> Another variable in the effective teaching research campaign is linked to the national collaborators 	Spring 2013	TTU leaders
<ul style="list-style-type: none"> Across the country, use school district interest in the model as leverage to encourage universities in their area to engage in competency-based facilitation 	<ul style="list-style-type: none"> Model awareness and expansion are stimulated by the interest of either schools or universities in a given region of the country 	Spring 2015	TTU leaders

Summary

Over its history, American education has evolved from apprenticeship models (trades, agriculture) to industrialized schooling dominated by the transmission of knowledge. The 21st century world now demands critical thinking and the masterful application of academic disciplines to pressing new world challenges (e.g., the technology-enabled power granted to non-state entities in world politics). Educating our population for conceptual understanding alone is no longer sufficient in a competitive, global economy.

If history helps predict the future, then we will soon adopt internationally rigorous academic standards as well as standards focused on 21st century skills (critical thinking, problem-solving, communications, and technology integration). Yet, if our educator preparation for these reforms is handled in the usual knowledge-level manner, this initiative will, in time, also prove to be just another passing idea.

American education will make no significant and sustained progress until we move our preparatory focus to higher-order competency-based learning targets (i.e., skillful performances built on masterful application of knowledge and reasoning). Masses of American students will demonstrate globally exemplar application of 21st century skills when we shape the development of these competencies in our teachers. It can and must be done.

This proposal is *quite* a commitment for \$3 million. The aspirations and the work are realistic given the funds because our partnership is already committed. What the i3 grant will provide are needed extra resources and obligations of leadership that will buoy our metamorphosis from facilitators of conceptual understanding to exhibited competency.