DRAFT

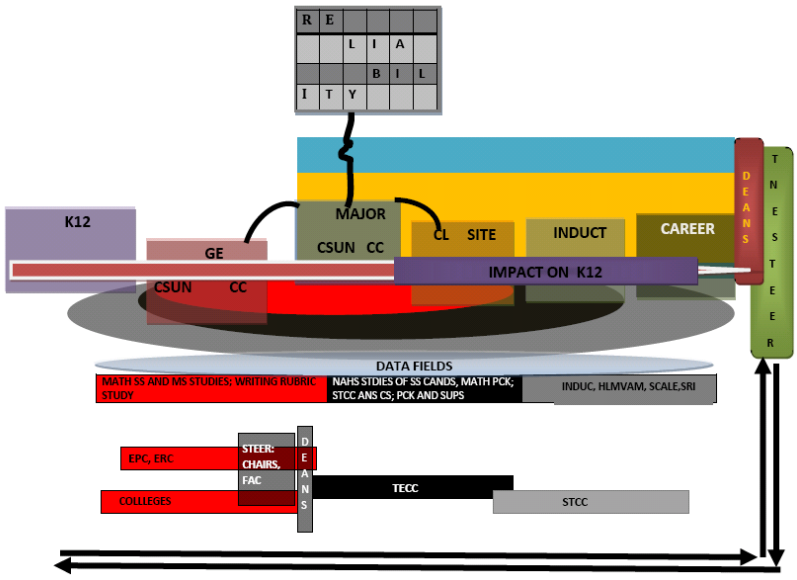
WHERE ARE WE GOING, WHERE HAVE WE BEEN?

CSUN TNE, YR 6

INTRODUCTION: It is the beginning of year six for Teachers of a New Era at CSUN. It has been an odyssey. The project has weathered two principal investigators, both from the Office of the Provost, and three associate directors. Both the executive and steering committees have been remarkably stable, however. Indeed, the committees have weaved together a network of professors and K12 teachers with expertise in research methodology, clinical site management, education and arts and sciences partnerships, subject matter and pedagogical content knowledge.

The original team understood that systematic change, based on evidence, nonetheless would require political work. Hence, the inclusion of campus, system, and LAUSD (Los Angeles Unified School District) leaders was an agile move. So, too, were partnerships with SRI (Stanford Research Institute), CRESST (Center for Research on Evaluation, Standards, and Student Testing), MPR Associates, Inc., and LAUSD's PERB (Program Evaluation and Research Bureau). Together, these consultants, co-researchers, and critics supplemented the CSUN team's skills, especially in methodology, and enhanced the public credibility of this complex project.

This report will focus on the fruits of these partnerships—a profound if unfinished reform in how we conceive of and implement teacher education at CSUN. In year three, as Dan Fallon nudged, pummeled, and cajoled the TNE sites to base change on evidence of pupil learning, CSUN responded by changing its statement of values from "good" to "effective teaching." This signified a reorientation, reflected in the Year 4 summary on evidence, in which we analyzed—with the acerbic help of consultants—our research methods for gaps in alignment, validity, and reliability. We narrowed our scope to longitudinal studies of the antecedents of K12 teacher effects mainly in English and Math college course work. We compared data across teacher preparation programs at CSUN and capitalized on the work of the CSU CTQ (Center for Teacher Quality) to situate findings in the context of CSU trends and, to the extent possible, non-CSU-trained teacher performance.



This chart represents our approach to evidence and change. The arrow, "impact on K12," connects the rectangular stages of teacher preparation. Not completely aligned, these stages both amplify and frustrate within the longitudinal sequence. A narrow blue rectangle and a yellow one bracket these boxes from above; they extend from "major" to "career."

Respectively, they stand for the CSU CTQ's initial HLM (hierarchical linear model) study of the differential effects of CSU and non-CSU trained teachers, as well as the annual survey of teachers and supervisors about the quality of CSU teacher preparation programs.

We rely on this work to triangulate our teacher and program effects. The quantitative methods complement but differ from our qualitative studies, providing cross-corroboration.

The ellipses that bracket the arrow from below reflect CSUN's evidence project. The large grey ellipse, extending back to GE (general education), symbolizes the HLM/VAM (valued added model/method) studies. CSUN constructed a pilot, then contracted with CRESST for a larger exploration of multiple-subject teacher data sets from '99-'03. The red and black figures cover the Math, English, and PCK (pedagogical content knowledge) studies—at CSUN, clinical sites, and teacher work sites. These were mixed-method, relying mainly on qualitative techniques for interviews, examinations, and observations, but they required statistical extractions. The blue-grey oval, dangling beneath the HLM/VAM ellipse, is the CSUN TNE data warehouse. It is a repository for observations of teacher candidates. In sum, it contains "interior" data about candidate experience and performance, whereas CSU CTQ data consist mainly of "'exterior" facts like program, completion, and threshold tests, as well as survey results.

Therefore, CSUN's HLM/VAM complements CTQ's HLM. CSU CTQ's surveys complement CSUN's qualitative studies Together, like two sonar scopes, they amplify the traces of teacher effect. The traces reflect the complex interaction of teacher, pupil, school site, and social contexts. But there is another layer. Teacher effects result indirectly from diverse preparation program effects.

Finally, the boxes and arrows along the right and the bottom abbreviate a more developed diagram and theory of change. They indicate the committees that extract program information from TNE research. In turn, they either overlap in membership with campus bodies or have direct access to the levers of program change. STICC (Student Teacher and Intern Steering Committee), for example, can redesign the clinical network; but TNE faculty must negotiate changes for Math with EPC (Educational Policy Committee) and the Math Department. Proponents for the evidence of learning, in other words, must adapt to the language of FTES and FTEF, tokens for enrollment that drive budget. Evidence, in other words, meets the self-interest of departments.

LONGITUDINAL QUANTITATIVE STUDIES: In 2005-06, we summarized the efforts to construct a model that accounted, over time, for the residual effects of teachers on pupil learning, once we controlled for contextual influences like school site, previous preparation of students, and socioeconomic conditions as indicated by participation in federal aid programs. In this calculus, standardized test scores represented pupil learning. Qualitative evaluations are revealing other dimensions of learning such as engagement and the ability to explain what one knows. Below are the questions that a series of quantitative approaches have tried to answer:

- In what ways do CSUN teacher preparation programs affect K12 pupil achievement, particularly in reading/writing, and Math?
- Do pupils of teachers who graduated from different CSUN teacher preparation programs produce significantly different achievement patterns as measured by standardized NRT's (norm-referenced tests) and district- developed tests? Are there pathways within these programs or weaving among them that have distinctive effects?
- Is there a relationship between teacher preparation factors (such as course grades and test scores) and pupil performance on standardized or district tests?
- Which set of variables have a greater impact on pupil test scores, those relating to teacher preparation programs, those relating to teacher in-service experience (number of years teaching, waivers for special education or emergency credentialing), or those relating to school characteristics (proportion of pupils in school lunch program, etc.)?
- Are there significant differences in K12 pupil achievement patterns that relate to whether the teachers completed their credential program at CSUN, other CSU schools, or non-CSU institutions?
- If there are differences, do they relate primarily to school characteristics, pupil characteristics, or teacher in-service characteristics?

In 2005, a pilot study linking teacher preparation pathways of 200 teachers to K12 learning and achievement suggested differences among the post-baccalaureate Traditional pathway, the ACT (Accelerated Collaborative Teacher) pathway (a cohort program offered at a school site), and the Multiple Subjects Internship pathway for teachers on emergency permits. These pathways represented different approaches to teacher preparation. Data came from 1999-03 to establish a base line.

Multivariate analyses compared (grades 1 – 5) pupil learning. The analyses controlled for the school's Academic Performance Indicator (Academic Yearly Progress on standardized tests combined with the proportion of pupils on the free-lunch program as an indicator of socioeconomic level). Learning was represented by scores in reading, Math, language arts, and writing on standardized tests (Stanford 9, California Achievement Test), an augmented version of the standardized tests that included items aligned to state standards (Augmented Stanford or Augmented CAT), performance-based tests designed to align with state content standards (California Standards Test), and an English Language Assessment test.

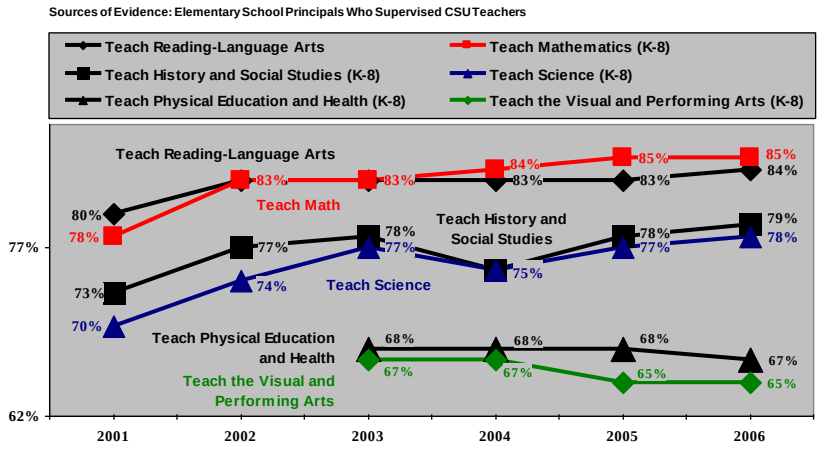
These analyses yielded apparent differences between programs on six tests (SAT 9 Reading 2002, CST Reading 2002, CST ELA 2002, CST Language Performance Standard (English) 2002, SAT 9 Math 2000, and CST Augmented Math 2000). Students whose teachers graduated from one pathway consistently performed at a lower level than did students whose teacher

graduated from either of the other two pathways. Results were most consistent in grade levels 2 and 3, possibly reflecting that more data were available for those years.

At the same time, CSU CTQ was linking the records of 37,000 K12 teachers to their students' performance on standardized tests in Math and English. As in the CSUN study, researchers identified a significant effect of teaching on pupil learning—between 6% and 13%, depending on the stability and nurture at home. A second study focused on a sub-group (under two hundred) of CSU trained teachers to compare the effects of CSU and non-CSU trained faculty. Empty cells were an increasing problem in higher grades. Nonetheless, CSU-trained teacher appear to outdistance others in teaching Math effectively to second language speakers. Overall, the finding was valuable. They hinted, too, at long commitment to diversity.

CRESST's recent discoveries are less aggressive, more skeptical. The scale of the project—over 200 CSUN teacher records embedded in over 10,000 other teacher records and nearly 40,000 student records—magnifies gaps, as CRESST documented. For instance, CSUN ITEP, ACT and Intern graduates compose a fraction of our graduates. Still, they interest us because they pass through organized but different curricula. Because the study builds on students and teachers who entered the system after '99, their records have not yet amassed, diminishing the scope of serial analyses. There is a matter of context, too. The first year of data for teachers was '99; that was Dean Ruche's first year at CSUN. His influence would show two to six years later, depending on whether graduates attended just the credential program or an undergraduate one, too. In fact, 2003—the final year in this study—actually is the end date of the first year of TNE at CSUN. Therefore, preliminary evidence of pupil and candidate learning began to appear by the end of '05.

Despite the incompleteness of the data, the CRESST study reveals that differences in the gain scores of students, whom either CSUN or other institutions taught, was negligible. Other institutions edge CSUN in the link between pupil learning and teaching in reading, barely. There were trends the other way, if one can designate such few data points as such. Limited evidence about ACT and the Intern program suggests a linkage to slightly higher gain scores. These effects echo the school administrators' surveys (above). At the start, they were not flattering for the CSU. Since then trends are upwards; but upwards implies that the original status was lower. (See Graphic Results,'06.)



In theory, the design is robust; in implementation, it is perhaps impractical. The model derives a teacher's added value from calculations of nested influences. As an example, a teacher's effect on students is affected by the previous teacher's legacy. The logistical paradox is this: at the start of the study, those influences are null since they precede the study. At the end of the study, influences multiply; however, at the same time empty cells—missing data—proliferate. The nested structure becomes a beehive. Empty cells especially compromise influences through subordinate pathways like ACT that have fewer Ns in the pool of teachers.

Since the CRESST study began, the quality of data has improved. We have more CSUN teachers, actual performance indicators, and cleaner information because of electronic transfer:

	CRESST HLM DATA SET	**CURRENT DATA SET**
Collection	**Manual from paper files.**	**Electronic**
"N"	**200+ CSUN Teachers**	**1346**
Pathways	**3 (ACT, intern, Traditional)**	**All (ACT, Intern, Traditional, ITEPFO, ITEMJO, FYI, TNE)**
Programs	**Multiple Subject**	**Multiple Subject, Single Subject, Special Education**
Teacher Performance Measures	**0**	**Early Fieldwork, Student Teaching, Portfolios**
Other Measures	**Course grades, CBEST**	**Course grades, various grade point Averages (entry to student teaching, Exit student teaching, core courses) CBEST, CSET**

We need to decide how to continue this quantitative study. We could throw in with CSU-CTQ to complete the analysis by including years after the base line of 1999-03. They should have an even broader CSU N that might amplify the significance of data about pathway. We then could look at more granular issues through the lens of STICC. We have repeated indications that ACT students are faring better, although we have not yet pursued the reasons in depth. Math and English studies beat this drum, as well. Possibly, we could clarify the profiles of effective teaching by mining examples of such in the qualitative studies. We also should correlate CRESST's teacher gain scores or other traces of effectiveness with indicators of the schools' receptiveness to innovation in teaching. This approach might yield empirical evidence about the influence of CSUN on a whole site in the STICC network. We might answer whether deepening professional ties between CSUN and school sites links in some way with pupils' learning.

QUALITATIVE STUDIES IN MATH: In multiple subjects, three studies about Math were under way in '06-07. They function as a composite longitudinal study of emphasizing PCK. The

studies illuminated how CSUN programs prepared teachers to develop in pupils the conceptual understanding of geometric and arithmetical operations. "Composite" signifies that, to date, actual students have not tracked through all three stages in this study—undergraduate content and methods courses, methods courses in Education, and student teaching. One must imagine drawing an arc through dots on a graph, so to speak. The arc connects like but distinct groups of candidates in order to project an image of teachers' development of PCK skills. At this stage, the studies depend on another simulation, too. We have extrapolated pupil effect from the gain in content and PCK of candidates, relying on the work of Deborah Ball. Ball et al. have developed protocols that link candidates' scores to the scores of classroom teachers for whom her research team had records of pupil performance.

The main characteristics of the studies are:

- A group of faculty in Math coordinated their instruction in a 200 level and 300 level Math course for candidates. They operationalized a collective practice of PCK by reviewing their own classroom behaviors that they videotaped. Then, they timed activities and examined them for consistency. They achieved consensus on teaching strategies. Such coordination is rare. We overlook it, as we focus on the alignment of syllabi with standards.

- In a related study, researchers tracked three groups of students. The groups consisted of freshmen and junior ITEPs who received consistent reinforcement of PCK and its linkage to subject matter. A third group, liberal studies candidates received no special treatment; they occupied separate sections. The N of pre-service candidates was 72.

- The research team followed the candidates through two teaching experiences coordinated by Education. The Math team trained the supervisors of the candidates in how to scale their observation and, of course, in recognizing PCK. Then, the supervisors reviewed the candidate when they taught. The researchers also tested the candidates again on a Ball instrument, to assess whether the understanding of PCK grew during the practice of teaching.

- Along the way, the study developed consistent instruments and protocols for supervisors. The frequency and depth of their remarks on PCK became data for a project to align preparation and review in the field.

In the first study, candidates demonstrated meaningful gain in scores because of the treatment. However, as one would expect, the post-tests scores fell below those of experienced teachers, except in content knowledge of geometry. Geometry is not tested by the state. It perhaps escapes the effects of "teaching to the test."

The second study involved 72 pre-service teachers. The four-year undergraduate "experimental" cohort (N = 25) began the program as incoming freshmen, completed two Math subject matter courses specifically designed to emphasize "mathematical knowledge for teaching" for future elementary teachers, a math methods course, and then two student teaching experiences of eight and nine weeks, respectively. They scored as follows in geometry:

Table 1: Means (z-scores) of CKT-M Geometry Measures for Three Groups of Pre-Service Teachers

CKT-M Geometry Measures	4-Year Undergraduate Cohort *n* = 25	2-Year Undergraduate Cohort n = 17	2-Year Undergraduate Control Group *n* = 33
Geometry Class Pretest	- 0.17	- 0.45	---
Geometry Class Posttest	0.85	0.10	---
Student Teaching Posttest	0.58	- 0.20	- 0.41

Scores increased for both experimental groups, against the controlled one. Numerical operations prompted these scores:

Table 2: Means (z-scores) of CKT-M Number and Operations Measures for Three Groups of Pre-Service Teachers

Administration CKT-M Number & Operations- Knowledge of Students and Content Measures	4-Year Undergraduate Cohort *n* = 25	2-Year Undergraduate Cohort n = 17	2-Year Undergraduate Control Group *n* = 30
Mathematics Methods Class Post-test	- 0.004	- 0.481	-0.236
Student Teaching Post-test	0.270	- 0.067	- 0.089
Gains	0.274	0.414	0.147

All groups saw gains. That is a relief. One apparently does learn by doing. Allowing for the disadvantageous comparison with experienced teachers, who provide the norm, one sees significant progress for both ITEPs.

Even though the Ns are small, we can surmise convergences with the CRESST study and the CSUN pilot. F-ITEP, again, paces ahead.

The third leg of this study focuses on observations and observers. Observers detected these tendencies in the treated candidates. The team is synthesizing these studies to see just how perceptions of effectiveness correlated with other measure of successful performance.

Category	Observed Lessons
Level 1: Ineffective Instruction	4
Level 2: Elements of Effective Instruction	8
Level 3: Beginning Stages of Effective Instruction – Low	7
Level 3: Beginning Stages of Effective Instruction – Solid	10
Level 3: Beginning Stages of Effective Instruction – High	5
Level 4: Accomplished, Effective Instruction	8

In both the Evidence Report in '06 and the last two SRI reports (and here), reviewers noted that inter-rater reliability was either null or meaningless (all god's "children" being 5s). The reviewers urged that we train raters to align their observations with program outcomes. Now, we have limited evidence of change:

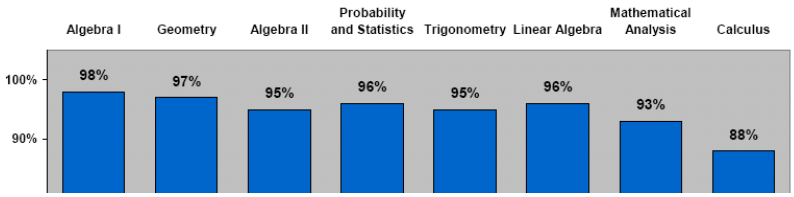
Relative Frequency of Supervisor Comments Specific to Mathematics		
Category	Before	After
Problem Solving	3.6%	8.9%
Explanations/ Justifying Reasoning	5.1%	31%
Representations	9.5%	13.1%
Connections	5.8%	8.3%
Other	2.9%	2.1%

The observers' description and analysis of pedagogical behavior has "thickened" and increased in frequency.

Nonetheless, in a different study of TPE gain scores across two semesters in '06-'07, SRI emphasized that flaws remain. Scaled forms are too compressed (1-3, in some instances) to capture differences. Raters still evaluate highly, and—despite convergence on the high end—their score differed substantially. Forms need reform. Trainers need re-training.

Still, the studies seem to show that PCK can lever subject knowledge in candidates and, so far by inference, in pupils. In the next stages in the study, the team must compile more evidence about changes in candidates understanding and behavior; and the researchers must amplify findings by investigated whether indeed there are gains by pupils. PCK, the most striking changes were changes in the team itself. They regarded teaching empirically; and they collaborated to plan the details of how they would teach the candidates. Not all this implies that the team has routinized

teaching, ignoring the unpredictable values of surprise and paradox; however, there certainly is more aware of teaching as a collection of scripts that prompt the predicted and the unpredicted.



We can frame this work in several contexts, according to David Wright of CTQ and Michael Spagna. Supervisors of CSU-trained teachers (the sample, above, includes middle school and high school Math) rate the instruction favorably. These ratings align with similar evaluations of CSUN-trained teachers, especially over the last three years. By inference, the ITEP students at least match and probably exceed this level, based upon the results of the PCK studies.

However, in the context of the TIMMS studies (right), the results are vexing. Yes, U. S. students apparently exceed the average score in each percentile group of TIMMS testing. However, we are well below the top tier in each segment. This calls into question the relative efficacy of CSU and CSUN preparation and graduates' practice, even when we show gains.

	5th	25th	55th	75th	95th
LOW	43	115	229	310	427
AV	339	415	467	519	591
US	397	462	509	557	623
HIGH	467	549	599	656	731

LONGITUDINAL QUALITATIVE STUDY IN ENGLISH: Faculty in Education and various disciplines in the Humanities completed the first stage of a study of the effects of pre-service instruction in writing on pupil learning. The design team determined that before they focused on pupil learning, they had to understand the approaches of those professors who taught the candidates. Education faculty and professionals, they knew, complain that CSUN undergraduates who become candidates lack school-ready writing skills. Ironically, pre-service college faculty in the arts and sciences often blame K-12 teachers, many of whom CSUN faculty in education taught, for the poor writing skills of freshmen. The design team reasoned that if both groups resented each other's results, there was a probability that their standards did not align.

The designers set up an experiment. Humanities and Education faculty met to interpret the characteristics of effective writing. Readers scored over two hundred essays by ITEP and N-ITEP students, equivalent juniors, and students in freshman writing. They used two different rubrics to score the writing, one developed by composition faculty (B) and one developed by Education faculty and professionals (A). The composition faculty valued argument and organization more than sentence structure and grammar; Education faculty weighted such scaffolding more. The first pair of scores (below) reflects judgments on timed essays. The second set responds to essays the students had time to revise. Mean scores were slightly lower

for the Education rubric than for the composition rubric. The revised essays were rated as more effective according to both rubrics.

	N	Mean	Std. Deviation	Std. Error Mean
Rubric A	101	5.74	1.474	.147
Rubric B	101	5.85	1.590	.158
Rubric A	117	6.52	1.590	.147
Rubric B	117	6.66	1.723	.159

As in Math, the ITEP students out-performed others, on both rubrics, under both conditions.

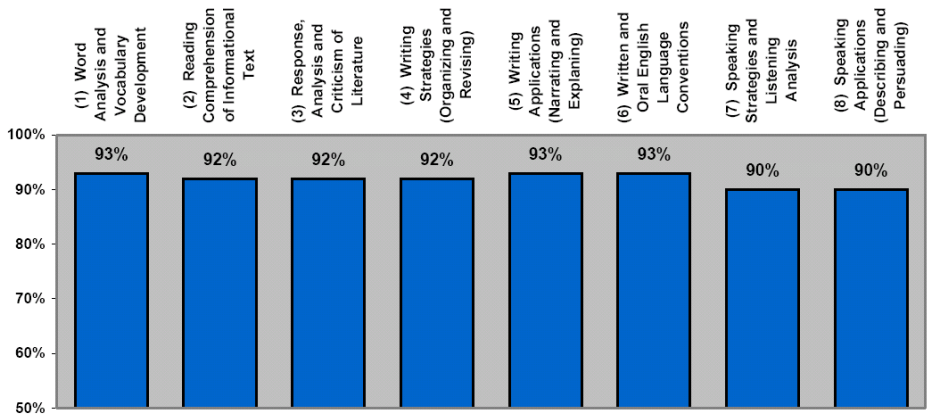
	ITEP Freshman	N	Mea	Std.	Std. Mea
Rubric A	Yes	12	6.92	1.084	.313
	No	89	5.58	1.452	.154
Rubric B	Yes	12	7.00	1.128	.326
	No	89	5.70	1.584	.168
Rubric A	Yes	22	7.32	1.427	.304
	No	94	6.32	1.574	.162
Rubric B	Yes	22	7.55	1.471	.314
	No	94	6.44	1.720	.177

Non-English Language Learners scored better under all conditions. ELLs benefited disproportionately when they had time to revise--and especially when their revised work was rated with the Education rubric.

	ELL	N	Mean	Std. Deviation	Std. Error Mean
Rubric A (timed)	English Speaker	67	6.16	1.483	.181
	English Language Learner	34	4.91	1.055	.181
Rubric B (timed)	English Speaker	67	6.28	1.535	.188
	English Language Learner	34	5.00	1.348	.231
Rubric A (revised)	English Speaker	83	6.82	1.466	.161
	English Language Learner	34	5.79	1.666	.286
Rubric B (revised)	English Speaker	83	6.98	1.623	.178
	English Language Learner	34	5.88	1.737	.298

Scores generally correlate with grades in freshman composition and a grammar course (English 302), though in the cases of students who had taken the grammar course the scores of ELLs were significantly lower than those of non-ELLs for the timed essay scored following the composition rubric.

The results actually clarify a basic problem. With 100% pass rates on CBEST and RICA and reports from school administrators (right) that CSU/N graduate are well prepared in English skills, we feel validated. However, misgivings about quality haunt us.



Implicated in this problem is the misalignment between faculties. How can candidates and pupils understand when writing is effective if their university faculty do not agree? Obviously, "effective" can change with stages in cognitive development. Such change still requires consistent interpretation to make sense. The Math PCK project showed that intentional collaboration abet learning. "It's not the curriculum, stupid," we might say; rather, it is the way—collaborative or apart—with which we teach it.

CLINICAL SITES AND BEYOND: Other work points to misalignment as a problem. SRI has begun to review our TPE (teacher performance expectations) assessments in candidacy. Questions and domains are consistent for single subjects, but scales diverge for multiple subjects, frustrating the effort to chart candidates' progress across terms. The best predictor for doing well on these evaluations is recent enrollment in teaching seminars. Otherwise, evaluations do not correspond with either course grades or perceptible patterns in the students' courses. The curriculum does not affect candidates' evaluations: why? Are the evaluations scaled too high or too low to capture the effects? Do we not train observers to look for those effects? We have achieved alignment on paper between courses and TPEs (above). That indeed is paper validity.

TPEs Single Subject Credential Program Courses, and Professional Teaching Portfolio Possibilities

*addressed ***concen-trated focus	SED 511	EPC 496S/420	SED 525 (in subject)	SED 554	SED 514	SED 521	496DV/ 417	SPED 401C	HSCI 496AD	SED 555
TPE 1	*		***	*	*	*				***
TPE 2	*		*	***		*		*		***
TPE 3	*	***	***	*		***		***		***
TPE 4	*	*	***	*	***	***	***	*		***
TPE 5	***	*	***	*	***	***	*	***	***	***
TPE 6	*	***	*	*		*		***		***
TPE 7	*		*	*		***	***	*		***
TPE 8	***	***	*	*		*	*	*	***	***
TPE 9	***		***	*	***	*	*	*		***
TPE 10	*		*	***	*	*		*		***
TPE 11	***	*	*	*		*	*	*		***
TPE 12	*	*	*	***	*	*	*	*	***	***
TPE 13	*		*	***		*				***

A study (Julie Gainsburg, Suzanne Scheld, Christina von Mayrhauser, Carrie Rothstein-Fisch, Michael Spagna) of single-subject teachers in Math (CSUN graduates, '04-'06), pinpointed several discontinuities. The study investigated the following research questions:

- To what degree do new credential-program graduates implement CSUN-identified effective teaching practices in their classrooms?
- What factors facilitate or impede implementation of pedagogies taught in the credential program?

The team conducted a qualitative study, investigating teacher practices and rationales for same practices using classroom observations and interviews. They selected a sample population of approximately 20 teachers in their 1st or 2nd year of employment from among the 50 math teachers who completed CSUN's traditional single subject math credential program between fall 2004 and spring 2006. Data was collected based on two days of classroom observations followed by interviews. Analysis involved consideration of frequency, duration, and/or level of identified instructional practices by target teachers to identify high and low implementers.

Additionally, the team conducted a qualitative case study of teachers considered to be "high implementers" from the first study, investigating factors that facilitated implementation of pedagogies taught in the credential program. This second study was accomplished using ethnographic methods. Researchers conducted case studies of new teachers identified as implementing the pedagogy for teaching math that they were taught in the credential program. Data collection was based on in-depth interviews that had been completed in the first study. Data analysis was conducted using the aforementioned ethnographic methodology.

The team recorded the amount of time in each lesson that was devoted to each of 11 teaching modes (see draft for details). The team summed these times across all 16 lessons and found the percent of time each mode contributed to the total. In this way, the team arrived at a breakdown of an "average" lesson for the 10 teachers.

Highlights:

- For nearly 1/3 of the duration of the average math lesson taught by our graduates, pupils individually practice learned procedures, i.e., do "seatwork." In this mode, teachers sometimes allow but do not explicitly encourage pupils to consult with peers.
- For nearly 1/4 of the duration of the average math lesson, the teacher presents math content, taking minimal or no input from pupils. This can take the form of lecture, but it more often includes teachers asking questions of pupils that require short answers that recall taught content.

- Other significant modes are the teacher giving behavioral directives or task instructions (12% of lesson time), pair or small-group practice of learned procedures (8%), and whole-class discussion with significant pupil input to review or apply learned procedures (8%).

- Activities that promote pupil construction of new concepts or procedures are an insignificant part of the average lesson (totaling only 4%).

Caveats:

- The 16 lessons ranged in duration from 40 to 96 minutes. The team did not normalize these data; thus, a longer lesson had greater influence on the average than a shorter one.

- Six of the 16 lessons were repeat visits. Thus, six teachers each had twice the influence on the average that each of the other four teachers did.

- Teachers helped select the lesson to be observed. Thus, they possibly made greater use of modes they believed would impress our team (e.g., group work) than they usually do.

- The time spent on tests or quizzes reported here is probably lower than normal, because the team tried to avoid observing lessons that included tests or long quizzes.

In conjunction with key Secondary Education Department personnel, the team developed a list of research-based "effective practices" that reflected the emphases of our math credential program (see draft for details). The team noted each incident of these practices, and then rated the overall significance of each practice to the lesson (Significant, Marginal, or None). For each practice, the team counted the number of lessons at each significance level. Figure 2 in the attached draft shows, for each practice, the percents of the total set of lessons that displayed each significance level. The protocol, however, left open the question as to whether professors' self-reporting and video-taping f their teaching adequately represented whether each section got the same treatment.

Highlights:

- The most-observed effective practice was giving pupils the authority to judge the mathematical soundness of a solution or method. It was a significant part of 25% of the lessons (4 out of 16 lessons, taught by 3 different teachers).

- Other effective practices were significant in very few lessons. Posing tasks with a high level of cognitive demand was significant in 19% of the lessons (3 of 16 lessons; from 3 different teachers). Other practices were only significant in 0 to 2 lessons each.

- Tasks with a high level of demand, pupil authority to judge, and technology/manipulatives each played at least a marginal role in half (8) of the lessons. Connections to another math topic or to real life, and giving pupils a choice of method each played at least marginal roles in 35% or 44% (6 or 7) of the lessons.

Caveats:

- Six of the 16 lessons were repeat visits. Thus, six teachers each had twice the influence on these totals that each of the other four teachers did.

- Teachers helped select the lesson to be observed. Thus, they possibly made greater use of practices they believed would impress our team than they usually do.

As the research team observed, these results conform to recent findings about the instructional strategies of experienced LAUSD and U. S. teachers. (**See Daley, G., & Valdés, R. (2006). Value Added Analysis and Classroom Observation as Measures of Teacher Performance: A Preliminary Report (Publication No. 311). Los Angeles: Los Angeles Unified School District; Program Evaluation and Research Branch; Planning, Assessment and Research Division; and Jacobs, J., Hiebert, J., Givvin, K., Hollingsworth, H., Garnier, H., & Wearne, D. (2006). Does eighth-grade mathematics teaching in the United States align with the NCTM Standards? Results from the TIMSS 1999 Video Studies. Journal for Research in Mathematics Education, 37(1), 5-32.**) The CSUN graduates sampled for this research moved through the program just as faculty were formalizing of how effective teaching linked through PCK to demonstrable evidence of pupil learning. Thus, such conformity to national practice should not surprise; however, PCK had cachet at CSUN before TNE. Only close collaboration, consistent measurement, and constant feedback can increase the likelihood that PCK, a theory and practice, will escape the orbital inertia of traditional pedagogy.

TNE at CSUN is developing practices to bridge gaps. At Northridge Academy High School, CSUN teacher candidates at NAHS and CSUN-minted teachers in their first or second year described the valuable parts of their preparation. They were thankful for the chance to teach independently but under the watchful eyes of cooperating faculty and K12 teachers. Such early and consistent reinforcement, they said in interviews, increased their confidence with differentiating instruction while pacing and managing a whole class.

Clinical sites, therefore, are an essential element in preparation. In '06-07, STICC established criteria for school sites within a CSUN clinical network. The original three—Langdon, Sepulveda, and Monroe—accommodated TNE cohorts who were full-time on site. Last year SRI reported that candidates appreciated the knowledge gained about school practices; they anticipated a smooth transition when hired. Principal Barbara Charness confirmed that TNE clinical students understood classroom and operational management well when hired. Indeed, SRI reviewed practices at the sites over two years. Their researchers reached helpful conclusions, even if the Ns were small. SRI also observed that candidates did not bring up PCK in interviews. Nor did PCK stamp classroom teaching or observations. Candidates' perceptions of themselves before and after student teaching conformed to larger studies. Entering student teachers usually thought that their assessment and diagnostics were weak at the start. Along with subject matter

knowledge, it grew over time, they believed According to SRI's interviews, bonding with peers and working with a mentor made the clinical experience worthwhile.

A review of API scores for the past three years suggests that CSUN presence in the schools did not transform learning. Scores improved, but the relationship to peers did not change significantly since their score improved, too.

SCHL	YR	NUMBER	GROWTH	BASE	TARGET	GR	PEER GR	PEER B	TARGET	VS LIKE	
Langdon	7	726	661	630	9	31	668	658	0.03	0.99	
Langdon	6	807	630	633	8	-3	646	627	-0.02	0.98	
Langdon	5	929	633	626	9	7	627	603	0.00	1.01	
Monroe HS	7	2060	610	607	10	3	564	562	-0.01	1.08	
Monroe HS	6	2958	608	619	9	-11	571	563	-0.03	1.06	
Monroe HS	5	3087	619	599	10	20	593	554	0.02	1.04	
Sepulveda	7	1951	658	655	7	3	660	649	-0.01	1.00	
Sepulveda	6	1862	653	633	8	20	657	642	0.02	0.99	
Sepulveda	5	1829	633	598	10	35	628	606	0.04	1.01	

The school principals and K12 teacher who supervised TNE candidates rated their progress as a professional school, using NCATE protocols. Major categories include:

- Standard I: Learning Community—Developmental Guidelines
- Standard II: Accountability and Quality Assurance—Developmental Guidelines
- Standard III: Collaboration—Developmental Guidelines
- Standard IV: Diversity and Equity—Developmental Guidelines
- Standard V: Structures, Resources, and Roles—Developmental Guidelines

Site teachers and administrators believed that they moved from developing capacity to meet these standards to "at standard."

STICC therefore set about articulating the necessary characteristics of a functional clinical site, according to TNE principles and CSUN experience. The planning and research committee reconstituted the protocol that guided discussions with the original clinical site. Participating schools had to agree as follows, they concluded:

- participate in a Partnership Conversation with CSUN representatives;

- select a P-12 Site Coordinator (receiving a stipend from CSUN) to collaborate with a University Liaison (receiving reassigned time or stipend from CSUN) to plan and conduct a series of activities tailored for the school site that supports the work of student teachers, master/cooperating teachers, and university supervisors; and to identify ways to improve connections and communication between the school and CSUN; and

- allow CSUN to administer to both master and cooperating teachers and student teachers a pre- and post-survey for the purpose of gathering evidence to inform us as we strengthen our collaboration.

Discussions with CSUN site liaisons, cooperating teachers, and school administrators confirmed many of the suppositions in CSUN'S early reflections on successful partnership of universities with K12. So much depends upon collaboration, cooperation, and culture, as participants bridge the habits of two different worlds. Success required these actions, the planners concluded:

- Share information across university and school boundaries
- Build in time for student teachers to meet with cooperating teachers
- Enable student teachers to become familiar with and participate in the out-of-classroom activities of the school
- Orient student teachers to the school. This is particularly important for student teachers who will be assigned to classrooms in which scripted curricula (i.e., Open Court Reading) are used.
- Recognize the challenges and differences among schools' capacity to collaborate in the preparation of teachers.

Eventually the review team settled on twenty-two schools. They represent a sweep of elementary, middle, and high school sites. The student population averages 22,000—3% of LAUSD.

YR=YEAR, #=TESTED STUDENTS, GRO GR=GROWTH SCORE, BASE=SCORE LAST YR, TARGT GRT=TARGETED INCREASE FROM BASE, CI=ACROSS THE SCHOOL, SWCI=CONSISTENT WITH GROWTH ACROSS CATEGORIES IN LIKE SCHOOL, SG=SIMILAR SCHOOL GROWTH SCORE,SB=SIMILAR BASE SCORE FROM LAST YR, GR/GRT= GROWTH OVER TARGET, GR/GR/SIM=COMPARED TO GROWTH IN SIMILAR SCHOOLD													
			GRO		TARGT					SIMILAR SCHLS		COMPS: OVER T; VS SIM	
SCHL	YR	#	GR	BASE	GR T	GR	SCL	CI	SWCI	SG	SB	GR/GR T	GR/GR SIM
ARMINTA	7	465	736	694	5	42	Yes	Yes	Yes	698	684	0.05	1.05
ARMINTA	6	506	694	688	6	6	Yes	No	No	676	668	0.00	1.03
ARMINTA	5	547	688	668	7	20	Yes	Yes	Yes	663	641	0.02	1.04
CANT	7	734	775	762	5	13	Yes	Yes	Yes	768	762	0.01	1.01
CANT	6	800	763	758	2	5	Yes	No	No	751	746	0.00	1.02
CANT	5	781	758	739	3	19	Yes	Yes	Yes	731	716	0.02	1.04
CHIME E	7	126	780	789	5	-9	No	Yes	No	872	870	-0.02	0.89
CHIME E	6	124	791	766	2	25	Yes	Yes	Yes	855	846	0.03	0.93
CHIME E	5	107	766	722	4	44	Yes	Yes	Yes			0.06	
CHIME MS	7	214	753	737	5	16	Yes	No	No	792	787	0.01	0.95
CHIME MS	6	196	741	720	4	21	Yes	Yes	Yes	779	768	0.02	0.95
CHIME MS	5	141	720	713	4	7	Yes	Yes	Yes			0.00	
COLFAX E	7	313	876	840		36	Yes	Yes	Yes	816	806	0.04	1.07

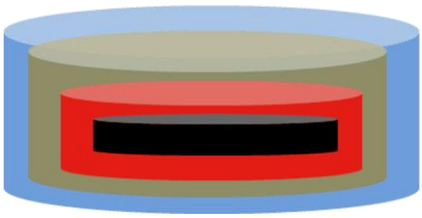
COLFAX E	6	314	842	833		9	Yes	No	No	799	795	0.01	1.05
COLFAX E	5	302	833	788	1	45	Yes	Yes	Yes	756	736	0.06	1.10
FERNAN	7	636	690	675	6	15	Yes	Yes	Yes	675	663	0.01	1.02
FERNAN	6	639	673	668	7	5	No	No	No	678	657	0.00	0.99
FERNAN	5	722	668	645	8	23	Yes	Yes	Yes	643	625	0.02	1.04
GLEDHILL	7	513	786	765	5	21	yes	yes	yes	716	719	0.02	1.10
GLEDHILL	6	494	766	751	2	16	yes	yes	yes	692	681	0.02	1.11
GLEDHILL	5	498	751	744	3	10	Yes	Yes	Yes	709	688	0.01	1.06
GRANADA HILLS HS	7	2907	816	796	4	20	Yes	Yes	Yes	784	779	0.02	1.04
GRANADA HILLS HS	6	2842	809	795	1	14	Yes	No	No	789	786	0.02	1.03
GRANADA HILLS HS	5	2702	795	754	2	41	Yes	Yes	Yes	724	703	0.05	1.10
LANGDON	7	726	661	630	9	31	Yes	Yes	Yes	668	658	0.03	0.99
LANGDON	6	807	630	633	8	-3	No	No	N	646	627	-0.02	0.98
LANGDON	5	929	633	626	9	7	No	Yes	No	627	603	0.00	1.01
LASSEN	7	403	760	730	5	30	Yes	No	No	728	721	0.03	1.04
LASSEN	6	396	731	729	4	2	No	No	No	717	705	0.00	1.02
LASSEN	5	439	729	717	4	12	Yes	Yes	Yes	709	688	0.01	1.03
LIGGETT	7	636	716	703	5	13	Yes	Yes	Yes	712	698	0.01	1.01
LIGGETT	6	678	703	710	5	-7	No	No	No	679	666	-0.02	1.04
LIGGETT	5	746	710	692	5	18	Yes	Yes	Yes	663	640	0.02	1.07
MARLTON (P-12)	7	246	590	593	-3							0.01	
MARLTON (P-12)	6	238	601	677	6	-76	No	No	No			-0.12	
MARLTON (P-12)	5	251	677	622	9	55	Yes	Yes	Yes	660	636	0.07	1.03
MONROE HS	7	2060	610	607	10	3	No	No	No	564	562	-0.01	1.08
MONROE HS	6	2958	608	619	9	-11	No	No	No	571	563	-0.03	1.06
MONROE HS	5	3087	619	599	10	20	Yes	Yes	Yes	593	554	0.02	1.04
MT. GLEASON MS	7	1402	694	712	5	-18	No	No	No	702	699	-0.03	0.99
MT. GLEASON MS	6	1492	712	690	6	22	Yes	Yes	Yes	697	683	0.02	1.02
NAHS	7	767	680	692	5	-12	No	No	No	689	683	-0.02	0.99
NAHS	6	761	705	742	3	-37	No	No	No	713	702	-0.05	0.99
NAHS	5	511	742	B	B	B							
NOBLE	7	720	700	663	7	37	Yes	Yes	Yes	674	659	0.05	1.04
NOBLE	6	803	660	642	8	18	Yes	Yes	Yes	665	646	0.02	0.99
NOBLE	5	1075	642	629	9	13	Yes	Yes	Yes	636	618	0.01	1.01
POLY HS	7	2801	608	602	10	6	No	No	No	569	563	-0.01	1.07
POLY HS	6	3088	609	599	10	10	Yes	No	No	571	573	0.00	1.07
POLY HS	5	3112	599	574	11	25	Yes	Yes	Yes	599	555	0.02	1.00
RANCHITO	7	373	718	691	5	27	Yes	Yes	Yes	716	704	0.03	1.00
RANCHITO	6	378	690	692	5	-2	No	No	No	692	685	-0.01	1.00
RANCHITO	5	418	692	672	6	20	Yes	Yes	Yes	683	670	0.02	1.01
SEPULVEDA	7	1951	658	655	7	3	No	No	No	660	649	-0.01	1.00
SEPULVEDA	6	1862	653	633	8	20	Yes	No	No	657	642	0.02	0.99
SEPULVEDA	5	1829	633	598	10	35	Yes	Yes	Yes	628	606	0.04	1.01
SUTTER MS	7	1508	683	685	6	-2	No	No	No	660	650	-0.01	1.03
SUTTER MS	6	1531	681	653	7	28	Yes	Yes	Yes	647	633	0.03	1.05
SUTTER MS	5	1492	653	634	8	19	Yes	Yes	Yes	625	604	0.02	1.04
VAUGHN MS	7	1531	681	653	7	28	Yes	Yes	Yes	647	633	0.03	1.05
VAUGHN MS	6	1085	705	700	5	5	Yes	No	No	677	661	0.00	1.04
VAUGHN MS	5	954	700	677	6	23	Yes	Yes	Yes	644	725	0.03	1.09
VISTA MS	7	1795	575	554	12	21	Yes	Yes	Yes	612	601	0.02	0.94
VISTA MS	6	1648	552	533	13	19	Yes	No	No	602	589	0.01	0.92
VISTA MS	5	1505	553									0.01	1.02

Base and growth scores exceed average by 30 points; however, the scores for schools in this CSUN network correspond closely—within 1%--to scores of similar schools. The academic profile of the sites matches well with CSUN's college-serving area. As expected, scores are lower than on Westside and Midtown, higher than in Southeast and Southwest Los Angeles.

Ideally, CSUN would match the placement of each candidate with sites that could develop their particular strengths and weaknesses. The number of candidates and the logistics of scheduling make this unlikely, as does the rapid turnover of staff in K12 sites. The contract of CSUN with each site, though, does the next best thing. It sets pre-conditions—communication, collaboration, constant assessment—for a responsive environment for the candidates. Measuring responsiveness, however, will require triangulation among self-reported traits, supervisor observations, testing of candidates for value added, and testing of their pupils for value added. CSU-CTQ queries of teachers and supervisors at each site across CSU provide a context.

Program change would follow from the treatment of data and the faculty's judgment about what the data mean and how that meaning fits into CSUN's propositions. Both qualitative and quantitative, over time converge; they enable a longitudinal view of candidate development en masse. Researchers would derive CSUN program effects from the aggregated trajectories of CSUN-trained teachers. When and where Ns are sufficient, CSUN effects emerge as the tail—the delta—when we compare the paths and impacts of CSUN-prepared teachers with the paths and effects of teachers who were prepared elsewhere.

In effect, we would have a nest designed, symbolized on the left. The deeper one penetrates—from (blue) district-wide to (black) CSUN sites, the more necessary it is to do qualitative work since the Ns per program are small. The whole enterprise requires reliable execution of instruments for gathering data and comparably scaled tools. Both STICC and SRI report that extraction still suffers from the inconsistent design of instruments. Faculty try to be faithful to alignments required not just by TNE but NCATE, legacy habits, and other accreditation standards. We end up with too many masters, too little mastery.



In '06-07, STICC designed both interventions and protocols to assess the effects of CSUN's role in these sites. This was a first step in the longer commitment to trace effects on school culture and candidate growth, as well as pupil learning. To that end, researchers grouped the sites into two categories: strong affiliation, based on a history of placements and relations not just with expert teachers but school leadership; and moderate commitment, based on links of individual professors with individual teachers. The STICC team visited the sites several times; the treatment consisted of activities that reinforced PCK for supervising teachers and candidates. The team conducted pre and post surveys of both groups, scrutinized the TPEs of the candidates at completion points in fall and spring, correlated GPAs before and during the site experiences, and looked for differences in tallies according to the category of the site. Generally, teachers at sites

with we thought were stronger ties to CSUN valued working with a teacher candidate and CSUN more:

I would welcome the opportunity to work with another CSUN student teacher	Fall	Spring
Intervention Schools	3.49	3.48
High Intensity Schools	3.29	3.65

I benefited professionally from the opportunity to work with a University Supervisor from CSUN	Fall	Spring
Intervention Schools	2.86	3.13
High Intensity Schools	3.38	3.40

Student teachers attributed slightly greater value to experiences at the sites with stronger affiliation:

Student teaching was a valuable part of my credential program	Fall	Spring
Intervention Schools	3.80	3.83
High Intensity Schools	3.94	4.00

I would recommend this school for future student teaching placements	Fall	Spring
Intervention Schools	3.46	3.79
High Intensity Schools	3.56	3.80

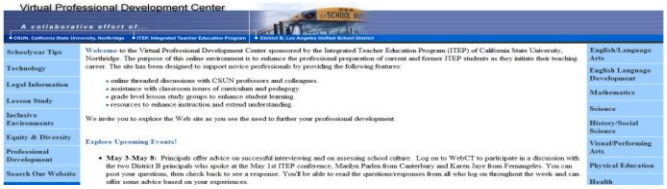
However, neither TPEs nor GPAs corroborate these preferences. While schools with robust culture like CHIME seemed to benefit students from self-selective programs like ITEP, this correlation was an outlier. Nonetheless, the CHIME effect, so deeply entwined with CSUN culture from its start needs investigation. As yet, pupil scores have not been linked, though a cursory treatment would be straightforward. Obviously, institutionalization of common culture and reliable research methodology at these sites is quite challenging, given the variety of CSUN programs, differences in school culture, and logistical challenges to conducting research. "Two roads diverge" . . . and we have chosen. We have left behind the notion of clinical sites for full-time students and opted for a broader network that accommodates a variety of pathways.

INDUCTION: CSUN positioned the final piece in the clinical puzzle this year, the Induction program. The difficulties have been worthy of the Odyssey. The Associate Dean and her stalwart

crew have weathered invidious legislation that penalizes alignment and cooperation, as well as a Scrooge-like approach to funding in which each segment clutches its pennies, refusing to share. Local agents make workarounds on the cheap. The spectacle is a microcosm of a warped system. Policymakers yelp about poor results and misalignment yet cravenly cave in to the self-interests of the largest, loudest lobbies.

Nonetheless, forty-five students enrolled in year 1, split between elementary and secondary. The design of the program, though, deploys TNE findings. Cooperating faculty who offered the first courses met often to coordinate not just syllabi but execution. Direct feedback from the teachers, who share a sense of experimental voyage, facilitated feedback. One of the first courses was Lesson Planning. Previously, SRI reported on problems of alignment in LP. Pre-service, candidacy, and new teacher experiences did not match. Theory, idealized practice, and scripted curricula represented three distinct views. Generally, students thought that this course, like others in the program, encouraged them to reflect on practice and fostered community. Both students and faculty concluded that the demands of work required that faculty decrease the length of assignments. Like CSUN candidates in the other studies—indeed many are CSUN products--they do not cite particular teaching strategies that the course enriched.

In addition, the Induction program rolled out a professional development site on the web. Virtual community would compensate for the dispersion of the students. Postings, blogs, and chats would be avenues for asynchronous deliberation, as well. Faculty reported that, unless forced, students shied from the site. Meanwhile Math is using Elluminate to communicate regularly with community college partners; they are developing on line course with WebCT for graduate level work. So, we likely will see—and test the efficacy of—virtual communities soon.



CAPACITY AND THE FUTURE: As we begin year 6, we are confident about our direction. That is not to imply, however, that the complexity and size of what we have taken does not exhaust us. Still, we have over $1,000,000 in reserve. The endowment is funded. The University committed to a director and staff; it also will reserve funds to support a major qualitative and quantitative study annually. A capable IR Office, cooperation with LAUSD PERB and CSU CTQ, a campus mandate for direct assessment, a data warehouse and a skilled assessment coordinator in the Eisner College support and will support the methods of TNE.

We have focused on the longitudinal effects of Math and English preparation, especially PCK. Recently we have concentrated on finding and fixing chinks in the chain that leads from preparation to field experience. We have coordinated forms and protocols so that evidence about that experience is reliable and comparable. We have hired staff and faculty to increase expertise in data analysis. We have trained supervisors and observers with common material. We have focused Induction course work on fault line between the segments of the University and K12.

Finally, we have cultivated good relations with consultants like CRESST, SRI, MBR Associates, and AED. But the job at the moment exceeds our capacity and acumen; we have miles to go before we sleep, especially in making consistent inter-rater reliability.

The CPRE (Consortium for Policy Research in Education) and CSU Deans' report call for efficiency and integration in gathering, storing, and decoding data. CRESST's HLM and VAM analysis of teacher/pupil learning data from '99-'03 boosted what we know about learning and capturing it as an "effect." However, long-term, such a complex project is too taxing. Further, small CSU peers would see little reward for all their effort. The Ns in similar preparation programs at small universities are dispersed across too many cells—programs—for analysis. Rather, the CTQ should gather pupil data statewide. The office has call on enough information to put trends on campuses and across the system in proper context.

What should the campuses do? As the deans suggest, campuses must determine together a) the common data set that they want the CTQ to assemble and b) the local "thick data"—candidate TPEs, previous experience, and observations—that they must gather through common forms with common scales. This approach to data capitalizes on the structural strengths of the Chancellor's Office and the campuses. Right now, CTQ distributes responses to common queries that it asks across programs. But the campus programs have yet to coordinate field observations, campus pathway data, and candidate interview queries that can complement the central work. This tact conflicts, however, with the preferences of some campuses and virtually all accrediting agencies. Each campus, they believe, must erect its own leaning Tower of statistical Babel. The charts below show what data campus now collect. Red indicates what they—not CTQ—have access to. Thick data about candidates from the campuses must be matched with K12 teacher and pupil data. CTQ is expert at amassing the latter files. Together CTQ and campus experts can clean, line up, and analyze the matched files.

Table 1: Number of CSU Campuses Collecting, Analyzing, and Using Data on Teacher Preparation Programs

Category	Number of Campuses		
	Data Collected	Data Analyzed	Data Used/ Reported
1. Candidate Demographics and Information	11	6	4
2. Candidate Educational, Professional and Personal History	7	3	1
3. Admission Check Points	11	9	3
4. Fieldwork Experience and Placement	8	5	2
5. Progress Monitoring and Candidate Readiness Check Points	10	7	3
6. Program Completion Check Points and Performance Assessment Scores	8	5	3
7. Program Completer Competence and Retention	3	2	2

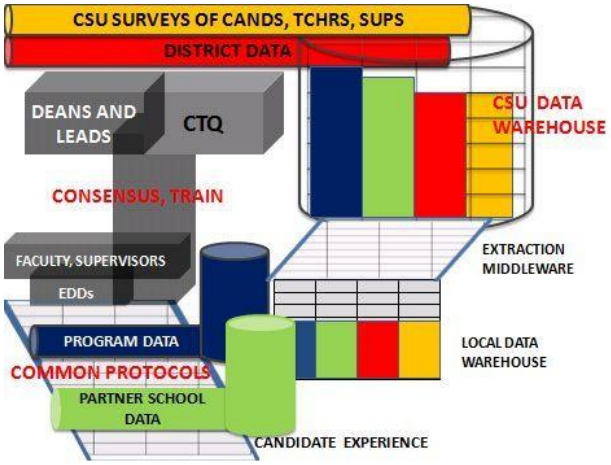
Table 2: Top Ten Areas of Data Available on Reporting Campuses

Variable	Number of Campuses Reporting	% Campuses Collecting Data
Age	16	100
Gender	16	100

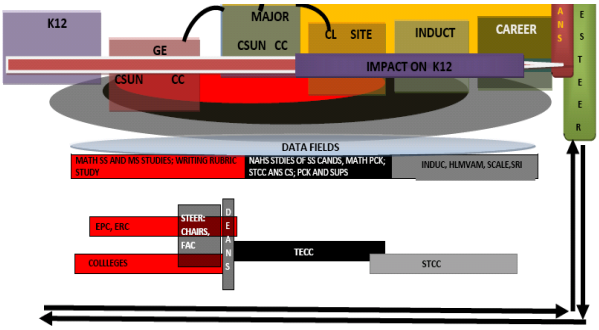
Ethnicity	16	100
Subject Matter	16	100
Quantity of Supervisor Observations	16	100
Final Assessment by Supervisor – TPE Based	16	100
Final Assessment by Master Teacher – TPE Based	16	100
CBEST/RICA Passage	14	88
SMPP verses CSET (for single subject only)	14	88

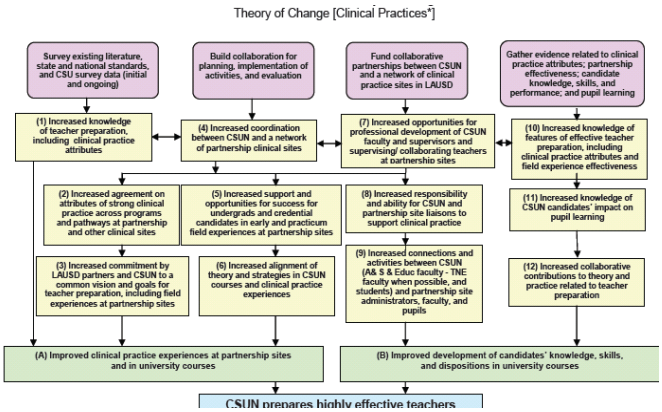
If agencies in California could achieve a common ID, candidate's work in K12 and community college could be included in the analysis with greater ease. Digital transcripts would aid this process.

Ultimately, a CSU data enterprise that focused on direct evidence of candidate and pupil learning would have these dynamics, as the chart below illustrates. On the left, a campus extracts from candidate experience, the academic program data, and school site data (observations, etc.) These data feed into—if needed—middleware—that populates the CSU data warehouse. Piped into that are large quantities of teacher and pupil data. Then, campuses can extract reports. Deans and lead faculty, working with the CTQ, coordinate the enterprise. These constituencies much achieve consensus on items, protocols, forms, training, reports, validation of assessment, etc. Now, we also have an emergent army of EDDs. We need to harness that energy and intellect to the large project at hand—collection, cleansing, analysis, and reporting.



So, it is natural to ask, what at CSUN; who decides? We already have a decision structure in place; refer to the bottom half of the left chart. The steering committee, guided by the executive sub-group and informed by the research team, chooses research projects. We support a limited number of initiatives.





In fact, as the left chart shows, we have mapped the ways in which evidence feeds into reformed practice, and reformed practice into evidence. We do understand that CSUN TNE is more than a research project. It is an institutional change project.

Over the past two years, we have learned to do evidence studies.

- We have learned, in this process that successful studies are parsimonious; then they are replicable and comparable.
- We have learned that "less is more"; the fewer studies, the more concentrated our research talent.
- We have learned how to take multiple looks at phenomena. Effects are visible traces of cognitive acts; effects are mute, they do not interpret themselves. As the qualitative studies show, interviews, observations, samples of materials and self-reporting together provide multiple perspectives on effects so that we can deduce intention.
- We have learned that when instruments are not aligned, sample sizes and cells too small, and inter-rater interpretations not reliable, the data are compromised.
- We have learned that we are gap-toothed. What we teach does not align consistently with what we say we teach. What we say and what we do differ in pre-service, candidacy, and fieldwork, etc. While this exaggerates the matter, alignment is a deep concern. Hardly a study does not conclude this.
- We admit that we are about pupil effects; we claim that PCK is the best way to increase learning. We have made great strides in getting empirical evidence about teachers and candidate. We sprawl across the two-yard line, arm stretched toward the goal, the hand squeezing the ball. To cross the line, we must manipulate the quantitative study so that we get statistical clarity on pupil learning.
    - To clarify the picture of what it is, we will need to have fewer cells so we can amass data. The more robust the data, the fewer the pathways since pathways must be compounded into highways—broadened from, say, ACT and ITEP to "cohorted and integrated."
    - We must develop behavioral indicators of conceptual understanding in pupil to supplement reliance on test scores. If we compare stats with such indicators, we might be able to read back to a profile of an effective teacher and, from that, an effective school site. Such indicators might include students' demonstration of conceptual understanding through questions, peer interactions, and work samples.
    - We cannot label a school sit or a CSUN K-12 partnership as effective unless we demonstrate how teacher and candidate, knowledge, dispositions, and approach to teaching incarnate pedagogical acts that, in turn, produce traces of pupil learning, in test scores and behaviors.

- We must design the STICC schools to have an evidence catchment that pools data in order to nourish decisions and change. Qualitative data about CSUN and K-12 partnerships must correlate with teacher and/or candidate effects, as well as test or behavioral indicators of pupil learning.

- The re-categorization of groups of schools within the network reveals that we have no solid data to justify the categories. We know from the past that, given the chance, we will take refuge in organizational tasks and interpret activity as evidence. "Been there, done that," right?

- We must un-confound, in our studies, evaluations of teachers and pupils from evaluations of programs and processes. In terms of our studies the former are means to achieve the latter. Nonetheless, since the means are living and breathing, we must be careful not to attribute final causation to them; and we are honor-bound to apply successful treatments quickly, even if this truncates an experiment.

- We must continue to leverage LAUSD and CSU-CTQA studies; we should explore how these units can contribute to our understanding of effective sites.

- We must re-conceive the TNE faculty appointments.

    - They belong to no person, no department, no college.

    - They should be occupied by faculty, especially in the arts and sciences who have demonstrated research, organizational, or teaching skills within the TNE and TNE-like projects at CSUN. We also should consider K-12 practitioners.

- We should view the STICC network as a working laboratory. Unless logistics point us a different way, we should run our studies through some of these schools, to gather data about pathways, profiles, and partnerships.

CREDITS

Assessing CSU Teacher Preparation in Relation to K12 Student Learning: Preliminary Findings Based on Incomplete Evidence

- William Wilson Vice-Assistant Chancellor
- David Wright Principal Investigator
- Nohoon Kwak Evaluation Statistician

CSUN Evidence Plan, '06

- Theory of Change: Spagna, Cabello, Theodoulou, Humphrey, Rusche
- Longitudinal/Multi-site: Crowe, Spagna, White, Theodoulou
- Data Warehouse: Cabello, Huber, Kay
- HLM/VAM: Choi, Huber
- Studies 1, 2, 3: Spagna, Cabello
- NAHS: Ericson/NAHS Team
- Induction: Eaton, Chong/Team
- Clinical Sites: Prosenjak/Team
- CRRT: Montano, Gudoski/Team
- Liberal Studies: Cahn, Adams/Team
- Social Sciences: Graves, Donaldson, Andrews, Burke/Team
- English: Barnard, Clark/Team
- Science: Herzog, Najy-Shadman/Team
- Math: Zeitlin, Gold, Mason/Team
- Chancellor's Office: Wright, Wilson
- Drafting, Editing: Bishop, Cabello, Eaton, Handler, Hellenbrand, Herzog, Humphrey, Rusche, Spagna, Theodoulou, White

Clinical Sites Report

Site Directors

- Natalie Messinger, Langdon
- Cathy Nachum, Sepulveda
- Paul Graber, Monroe

CSUN Departmental Liaisons to the Clinical Sites

- Debra Patterson, KIN
- Mary Schliff, MUS
- Larry Oviatt, ART
- Sandy Ritter, SPED
- Bob Kladifko, ELPS

Clinical Site Administrators

- Kathleen Spearman, Langdon Principal
- Barbara Charness, Sepulveda Principal
- Lynda Shwartz, Monroe Principal
- Mark Simmons, Monroe Assistant Principal

Evaluation of Teacher Preparation with a Focus on Math and English Teachers in California High Schools

- Center for Teacher Quality The California State University February 2006

The Excellence in Teacher Preparation Initiative

- Victoria Costa, Fullerton (Chair)
- Elaine Chin, San Luis Obispo
- Joseph Jesunathadas, San Bernardino

- Jinyi Li, Northridge
- Jonah Schlackman, Los Angeles
- Pia Wong, Sacramento

- Carol Bartell, TNE Project Facilitator
- Philip Rusche, Deans' Liaison
- Skip Meno, Deans' Liaison
- David Wright, CSU Chancellor's Office

Field Experience and PCK

- Nancy O'Rode
- In addition, 10 university supervisors participated in the project, which included two who also serve as Field Placement Coordinators for the multiple subject program options. University supervisors worked on the three subject matter projects based on their areas of expertise in the various fields. Student teaching seminar instructors were included in the math project because they needed to reinforce use of the materials with the student teachers during the student teaching experiences.
- David Kretschmer
- Greg Knotts

MKT in Math, Including Longitudinal Study

- Rita Basta
- Michelle Erickson
- Jerrold Gold
- Pam Mason (Teacher in Residence)
- Grace Mendez
- Joel Zeitlin
- Hillary Hertzog
- Nancy O'Rode
- Maria Czech
- David Kretschmer

Induction Report

- Arlinda J. Eaton, Associate Dean

Induction/Professional Growth Committee

- Nancy Burstein, Chair, Special Education
- Sandra Chong, Associate Professor, Elementary Education
- Chair: Arlinda J. Eaton, Associate Dean, Michael D. Eisner College of Education
- Bonnie Ericson, Chair, Secondary Education
- Marilynn Filbeck, Professor, Family and Consumer Sciences
- Stephanie Penniman, Teacher, Plummer Elementary School, LAUSD

- Nancy Burstein, Chair, Special Education,
- Sandra Chong, Associate Professor, Elementary Education,

- Arlinda Eaton, Associate Dean, College of Education,
- Bonnie Ericson, Chair, Secondary Education,
- Marilynn Filbeck, Professor, Family and Consumer Sciences, and
- Stephanie Penniman, 5th Grade Teacher, Plummer Elementary School
- Susan Belgrad
- Mike Rivas
- Tae Chang (EED)
- Ken Berry (SED)
- Norm Herr (SED)
- Bill de la Torre (ELPS)
- Jack Winkelman (HSCI)
- Judy Lombardi (SED)
- Theresa Montano (CHS)
- Sally Spencer (SPED)
- Susan Belgrad
- Bonnie Ericson
- Sandra Chong
- Julie Gainsburg
- Peggy Taylor Presley, Coordinator of the Teacher Support Unit in LAUSD
- Matt Worland, Technology Technician in the College of Education, monitored the Virtual Professional Development Center (VPDC).
- Elizabeth Adams (Liberal Studies)
- Rachel Freidman Narr (Special Education)

The NAHS Study

9 NAHS faculty served as master teachers for student teachers, most for both fall and spring Semesters

- B. Cantwell
- L. Culp
- S. DaLie
- M. Katz
- S. Mereu
- Milis
- N. Parmar
- R. Shufelt
- W. Williams

5 or more additional NAHS faculty opened their classrooms to early field experience observers

- D. Arias
- T. Burk
- S. Eller
- C. Mitchell
- B. Scott

1 NAHS teacher served as the clinical practice liaison to CSUN – organizing meetings, addressing questions, facilitating strong assignments, participating in focus group discussions, etc.

- S. DaLie

3 NAHS teachers served as small learning community liaisons to 3 CSUN colleges/facilitators

- P. Heywood
- Milis
- Mitchell

3 CSUN faculty (AMC, HHD, EDUC) served as small learning community liaisons to NAHS

- Cheng

- K. Sakatani,
- M.J. Sariscsany

12 CSUN faculty from 6 colleges served on the NAHS Planning Committee and participated in Monthly meetings; discussions addressed effective teaching, features of effective clinical sites, research plans and outcomes, and ways to promote ongoing activities and communication

- Cheng
- B. Ericson
- M. Franklin
- B. Lasky
- E. Nagy-Shadman
- D. Nguyen
- M. Rivas
- K. Sakatani
- MJ Sariscany
- S. Scheld
- Taylor, J. Thomas

NCATE Standards for Professional Development Schools

- Nancy Prosenjak, Professor, Elementary Education

Results of a Study of a Teaching-Credential Program's Impact on Recent Graduates: Report to the CSUN Department of Secondary Education

- Julie Gainsburg
- Suzanne Scheld
- Christina von Mayrhauser,
- Carrie Rothstein-Fisch
- Michael Spagna

SRI Study: Measuring Teacher Candidate Performance

- Haiwen Wang
- D. Humphrey

Teachers for a New Era Evidence Committee

- Julie Gainsburg, Suzanne Scheld, Christina von Mayrhauser,
- Carrie Rothstein-Fisch, and Michael Spagna

The Student Teaching and Internship Coordination Committee (STICC) Study

Written by:

- Arlinda J. Eaton, Associate Dean, Michael D. Eisner College of Education
- Nancy Burstein, Chair, Special Education
- Beverly Cabello, Chair, Educational Psychology and Counseling
- Bonnie, Ericson, Chair, Secondary Education
- David Kretschmer, Chair, Elementary Education

STICC Study Group

- Elaine Adelman, Internship Coordinator, Elementary Education
- Nancy Burstein, Chair, Special Education
- Arlinda J. Eaton, Associate Dean, Michael D. Eisner College of Education
- Bonnie Ericson, Chair, Secondary Education
- Julie Gainsburg, Assistant Professor, Secondary Education
- Steve Holle, Student Teaching Coordinator, Elementary Education
- David Kretschmer, Chair, Elementary Education

- Greg Messigian, Lecturer, Special Education
- Robin Mlynarik, Lecturer, Elementary Education
- Nancy Prosenjak, Professor, Elementary Education
- Sally Spencer, Teacher Education Coordinator, Special Education

Teacher Effect Change Model: Latent Variable Regression in 5-Level Hierarchical Models for Evaluating Teacher Preparation Programs

- Kilchan Choi (CRESST/UCLA)

Teacher Performance Expectations Review

- SRI staff

Writing, Literacy

- Elizabeth Adams
- Ian Barnard
- Tina Bertacchi-Love
- Pamela Bourgeois
- Beverly Cabello
- Sandra Chong
- Irene Clark
- Theresa Montaño
- Kathleen Dudden Rowlands
- Renee Ziolkowska