ELLA/TOEC SCALE-UP

ELLA (English language and literacy acquisition) COACHING SOLUTION SCALE-UP (ECS) and TOEC (Texas Online ESL/Bilingual Certificate Preparation) is a grant proposal impacting the academic life of over 112,500 at-risk English Language Learners, the professional development of over 1340 teachers and the leadership of 270 principals (60 from ECS and 210 from TOEC) in a total of 4500 classroom across Texas based on three projects funded with strong evidence for scaling up: (a) Project English Language and Literacy Acquisition (ELLA) (funded by IES-Award #R305P030032) (b) the Coaching Solution (CS, funded by IES-Award #R305W3257) , and (c) the TOEC (funded by the Texas Education Agency-Award # 09105677110001 and the USDOE OELA Professional Development Grant, *W*orking *A*ll *T*ogether-Award#T195N070187). *Absolute Priority 1* is met via the use of all three components: (a) the CS, virtual coaching, which will increase the number of teachers and principals who are highly effective for improving education for high needs students, English language learners (ELLs) (also who are majority low socio-economic status) via training and mentoring, (b) implementation of ELLA, a longitudinal randomized control trial (CRT), and (c) identification, recruitment, development, placement, and retention of highly qualified/certified teachers of ELLs (ESL/Bilingual) through the use of the TEOC training program. *Competitive Priority (CP) 5* is met with inclusion of K-3 grade levels annually. *CP 7* includes all Limited English Proficient (LEP) students (in this proposal ELL will be equivalent to LEP), and CP 8 is met through the inclusion of rural schools in this regional project within Texas; we also include diverse urban, suburban, and small town Texas districts and three partners, Texas A&M University, Sam Houston State University, and Southern Methodist University. Additionally, we

currently have 7 business partners committed and will secure the remainder of the partners needed for this project's success (Agilix, Istation, Eagle Graphics, Tegrity, E-college, Inline).

A. NEED FOR THE PROJECT AND QUALITY OF THE PROJECT DESIGN

A1. APPROACH ECS/TOEC represents exceptional approaches seeking to meet the priorities of addresses a largely unmet need, particularly for high-need ELL students, as well as being a practice, strategy, or program that has not already been widely adopted. Herein, we discuss concerns, along with the matching approaches for ECS/TOEC under the scope of the grant.

Concern 1. Today's immigrants and English language learners (ELLs) in the U.S. face a vastly different situation than those who immigrated just a generation ago. Greater literacy demands have been placed upon students and workers, and much higher levels of English fluency are needed to compete in the U.S. economy; thus, high levels of literacy are seen as necessary to improve one's social and economic condition. The situation has become critical as nearly 10.8 million school-aged children speak a language other than English at home (National Center for Education Statistics [NCES], 2009). Nationally, in 2007, ELLs comprised 20% of the enrollment in public elementary and secondary schools, and 75% (2.1 million) of these students were Spanish speakers (NCES, 2009). In Texas, alone, over 757,000 children were served in programs for limited English proficient students in 2008-2009, accounting for 16% of the school population (Texas Education Agency, 2010). Unfortunately, on the 2007 National Assessment of Educational Progress (NAEP), 70% of fourth-graders and 70% of eighth-graders identified as ELLs scored below the basic level in reading. In contrast, among non-ELL students, 29% of fourth-graders and 24% of eighth-graders were below the basic level in reading. The picture for mathematics achievement is similar. On the 2009 NAEP 43% of fourth-graders and 72% of eighth-graders identified as ELLs scored below the basic level in mathematics, compared to 18%

of non-ELL fourth-graders and 27% of non-ELL eighth-graders. Our scale-up model will address this problem related to the need for higher levels of English fluency and literacy as it supports teaching and principals regionally to become highly effective teachers/principals whose ELL students achieve high rates (e.g., one and one-half grade levels in an academic year) of ELL K-3 grade level students in English reading and in science by third grade via the use of (a) a scalable model of virtual coaching via Coaching Solutions, (b) a scalable version of Project English Language and Literacy Acquisition for grade K-3, and (c) the trained teachers from ECS to become a part of the online delivery system for certification in ESL/Bilingual education to increase the effectiveness of other teachers in their respective schools, district, and other districts across the region. ***Concern 2.*** Several theories of *second language learning* exist, but there is only one theory of *bi-lingual pedagogy*. Some second language learning theories expand upon a theory of linguistic development (Broselow, 1988; Trueba, 1989), while others, such as Krashen's (1985) "input" theory, focus on learning through communication in natural settings. These theories do not adequately account for what occurs in a classroom, nor do they help in planning curriculum and instruction for programs for ELLs. Trueba (1989) stated that "teams of researchers and practitioners ultimately need to find more useful theories and possible explanations that permit them to improve instructional design" (p.21). Lara-Alecio and Parker (1994) developed a pedagogical model/theory to address these overlooked issues for ELLs (Lara-Alecio is one of the PI of the proposed research.). As reported in more detail by Lara-Alecio and Parker (1994), the Four Dimensional Bilingual Classroom Pedagogical (BCP) Theory originally was developed to identify the interactions of four major instructional dimensions within bilingual classrooms; however, since that time, the Bilingual Observation Protocol (BOP) that was developed and validated from the Theory (Bruce, 1997; Bruenig, 1998), has been applied

successfully to evaluation research in, of course, transitional classrooms, but also, dual language and SEI classrooms. The BCP Theory consists of four dimensions: (a) Language Content, (b) Language of Instruction, (c) Communication Mode, and (d) Activity Structures. This theory, depicted in Figure 1, will allow us in our scale-up model to have a broad view across a region and varied types of schools of occurrences of language of instruction, language of response in relation to communication mode, cognitive response levels, and instructional activity structures within the classroom within subject matter; it was used successfully in Project ELLA. The application of the BOP is on a handheld device for capturing the dimensions in classroom use.

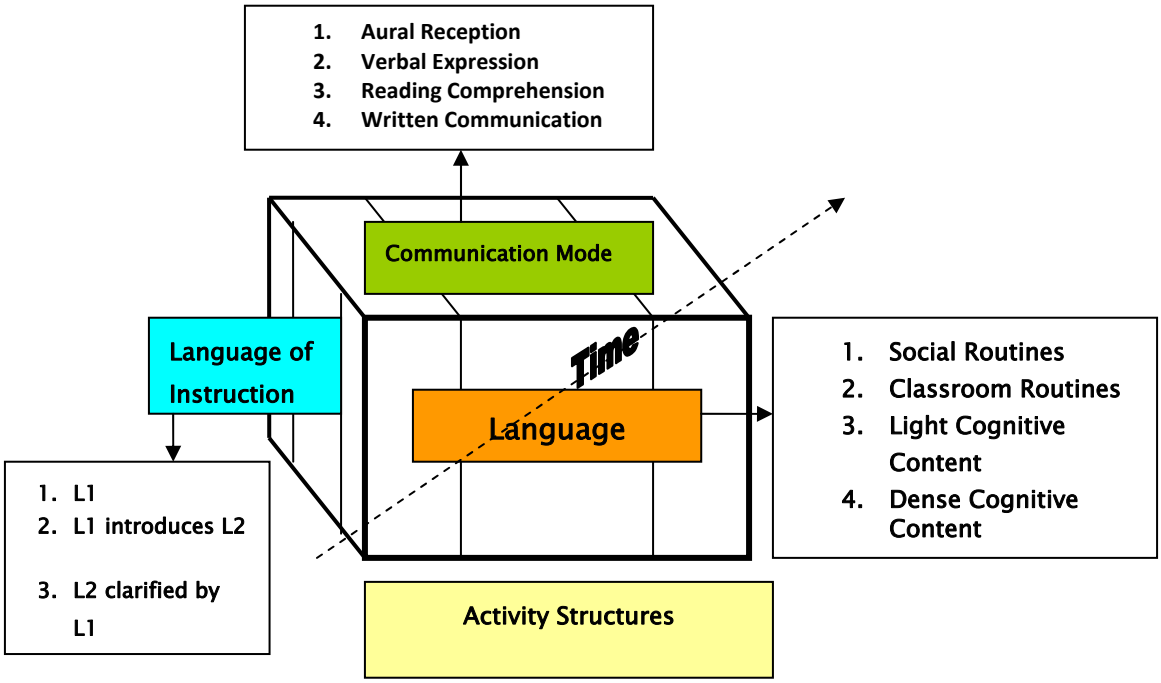

Figure 1. The Four Dimensional Bilingual Classroom Pedagogical

Language Content. The model's "Language Content" dimension derives from Cummin's (1986) influential language acquisition theory distinguishing Basic Interpersonal Communications Skills (BICS) and Cognitive-Academic Language Proficiency (CALP) language competencies. While the BICS and CALP distinction was initially useful, the main limitations (Trueba, 1989) of this

simple dichotomy are that it has obscured all classroom communication on a continuum between BICS and CALP, and has discouraged examination of student progress in this vast "middle area." The theory includes four levels of language content: (1) Social Routines (e.g., social exchanges and conversation), (2) Classroom Routines (e.g., repetitive school-related tasks), (3) Light Cognitive Content (e.g. discussing community news), and (4) Dense Cognitive Content (e.g., entailing conceptually demanding, specialized vocabulary; critical thinking). ***Language of Instruction***. The theory's second dimension, the "Language of Instruction," presents four progressive uses of native [(L1)(Spanish)] and second [(L2)(English)] language in the classroom: (a) content presented in L1 (Spanish), (b) L1 (Spanish) introduces L2(English), (c) L2 (English) supported and clarified by L1 (Spanish), and (d) content presented in L2 (English). Language of Instruction usually refers to the teacher's use of language. ***Communication Mode***. The theory distinguishes two receptive models (Aural, Reading) and two expressive language modes (Verbal, Writing). Cummins' (1986) "reciprocal interaction model" and the "context-specific" model of Diaz et al (1970) both support the practice of multiple modalities for second language acquisition. These modalities (especially Reading, Writing, and Verbal Expression) also are important curriculum skill areas. Their differentiation within the BCP theory indicates that English facility may not be unitary, but may vary by communication mode. ***Activity Structures***. Activity structures are teacher-structured, stable, recurring learning situations, each with its own expectations for teacher and student communication (Brophy & Evertson, 1978; Doyle, 1981). Activity structures are operationally defined in the BCP as combinations of (a) type of teacher behavior (e.g. directing, leading, evaluating, observing), and (b) the expectation for student responding (e.g. listening, performing, discussing, asking questions, answering questions, cooperative learning). Activity Structures of the BCP theory are described in greater detail in

Appendix H1. The BOP is a flexible and comprehensive classroom observational instrument that can be used in different educational settings as (a) an evaluation tool that provides reliable and accurate information of teachers' instructional patterns and their interaction with students and (b) a guide for instruction for teachers with ELLs in various program models. Through the BOP we are able to monitor quality language of instruction and other critical pedagogical components (our data are presented in section B1). ELLA component of ECS addresses the lack of classroom observation studies via the use of the BCP. ***Concern 3.*** Highly qualified, specifically for elementary teachers, is articulated in NCLB as the following: (a) full state teacher certification, (b) a minimum of a bachelor's degree obtained from an accredited institution of higher education, and (c) subject matter and teaching skills competency in each of the academic subjects taught; for elementary teachers, this includes "reading, writing, mathematics, and other areas of the basic elementary school curriculum" (U.S. Congress, 2001). NCLB specifically states that one reason for the teacher quality legislation is to ensure that disadvantaged students "are not taught at higher rates by unqualified, out of field, or inexperienced teachers" (U.S. Congress, 2001). Even though NCLB's teacher quality mandate applies to all elementary teachers, the law does not mandate student testing until third grade, thereby leaving outcomes for students in early grades less understood. However, studying teacher quality indicators as predictors of students' achievement gains in early grades provides a situation in which teacher quality may be more influential than in other grades because of the following reasons: (a) given that elementary students have more exposure to their teacher than students in higher grades, policy-relevant teacher characteristics may be more important in elementary school and (b), cognitive growth occurs more rapidly among young children (Burkam et al., 2004). Thus, any learning gains that might be attributed to encountering a highly qualified teacher could be more

pronounced among students in early elementary levels. The I3 grant defines a highly effective teacher as one that achieves student achievement gains at one to one and a half grade levels over an academic year. Data from our previous IES Randomized Control Trial Study (RCT) suggest that, overall, ELLs receiving intervention delivered by trained, certified teachers obtained a full year gain in English reading and were performing at or above grade norms at the end of 3rd grade in Iowa Test of Basic Skills (ITBS), a norm-referenced standardized achievement test (Lara-Alecio, Irby, Mathes, & Tong, 2010). We will address the concern of highly qualified and/or highly effective in two ways: (a) by supporting teachers and their principals with ongoing staff development (ongoing staff development was a biweekly occurrence in the Project ELLA model and is a component part of the model that supports the strong evidence in ECS/TOEC Scale Up) and (b) by supporting teachers in becoming highly qualified with certification in ESL or Bilingual Education. Additionally, there are no RCT studies reported in principal impact on ELL student achievement; however, a meta-analysis conducted on 70 studies that met established criteria from 5000 studies between 1970 and 2003 yielded 21 principal responsibilities that impact student achievement (Water, Marzano, & McNulty, 2003). Though none of the responsibilities are specific to improving ELL achievement, we will use the Waters et al. meta-analytic findings in our CS as a baseline for training, mentoring, and coaching principals serving ELLs and their teachers in addition to ELLA strategies and components. ***Concern 4.*** There is a problem in that there is still no clear understanding of how to best assist ELLs in acquiring the academic language in a content area, in particular in science, while also learning a second language of English in the most efficient and effective manner. In order to teach science to ELLs, teachers must simultaneously teach the literacy skills for learning science along with rigorous content standards that all students must master. Many instructional practices fail to do merge

language/literacy and science content standards (Merino & Scarcella, 2005). There is considerable debate as to the means by which the ELLs learn best to most effectively develop content, and English oracy and literacy proficiency. For example, Thomas and Collier (2002) conducted a landmark longitudinal study responding to the need to determine which language support programs successfully promote the long-term academic achievement of ELLs. Although their study laid the foundation for ELLA and currently for ECS, it included in the sample, programs that met theoretical design features put forth by experts in the field; however, these programs were "typical programs" that occurred with great variety from district to district and state to state, and sometimes even campus to campus. It is difficult to control for such variability within a large-scale non-randomized trial study. Additionally, according to synthesis of research conducted on science education and student diversity by Lee and Luykx (2006), experimental designs in studies with diverse students are rare, few studies are longitudinal, and many of the studies do not yield concrete evidence related to student achievement. On a related note, some studies have been called into question because of methodological flaws and for failing to answer critical questions. After a review of literature on bilingual education, Gersten and Baker (2002) suggested that research findings have failed to provide answers as to when it is best to introduce academic instruction in English to young learners while August and Hakuta (1997) suggested that the research community had not yet determined the best instructional methods for English language development. For example, the Ramírez study (1992) and the earlier Danoff (1978) were plagued with poor research designs with differing program models in different cities and with students tested at various grade levels. Greene (1997) found the Rossell and Baker (1996) research to have serious methodological flaws: (a) they applied inconsistent criteria in selecting studies to include in the meta-analysis, (b) they confused program types, (c) they understated the

importance of major studies in the field, and (d) they did not apply appropriate meta-analytic methods. In an intervention study conducted by McLaughlin, Snow, August, et.al. (2002), it was determined that the intervention was not clearly defined and varied by year and by teacher; again, the difficulty in control within school settings is demonstrated here. Gersten and Baker (2002) suggested that there might be a greater degree of control with smaller evaluation studies as opposed to larger ones. Our IES-funded RCT, Project ELLA, applied rigorous experimental and quasi-experimental methods controlling for the problematic confounding variables that plagued previous studies. ELLA has provided us with key components that will make scaling it across Texas urban, suburban and rural schools more facile in any of three types of programs for ELLs: transitional bilingual (TBE), dual language (DL), and structured English immersion (SEI) programs. It did not matter regarding the type of program, ELLA curriculum and strategies, quality instruction, increased academic growth in English language and literacy acquisition. Through ELLA we identified, with strong evidence, quality instruction components such as structured, aligned, curriculum for ELLs, on-going professional development and mentoring, classroom observations and feedback, and supportive leadership (See model in Figure 3 and section B1 for strong evidence.). Our goal is to scale ELLA to a variety of types of districts with coaching/mentoring conducted virtually with the same quality of staff development as was provided in Project ELLA. We will control for student, teachers, and school effects and will work to enhance the typical English learning program for ELLs with feasible interventions that educators can access.

A2a. GOALS , STRATEGIES, ACTIONS ALIGNED WITH PRIORITIES

GOAL 1: To assist teachers and their principals serving in K-3 urban, suburban, and rural schools in their development in becoming highly effective related to providing services to ELL

students. ***Objective 1:*** To increase the number of teachers in K-3 urban, suburban, and rural schools who are highly effective in increasing English language and literacy among high needs students who are ELLs***. Strategy 1a:*** Scale ELLA through an ongoing virtual coaching model

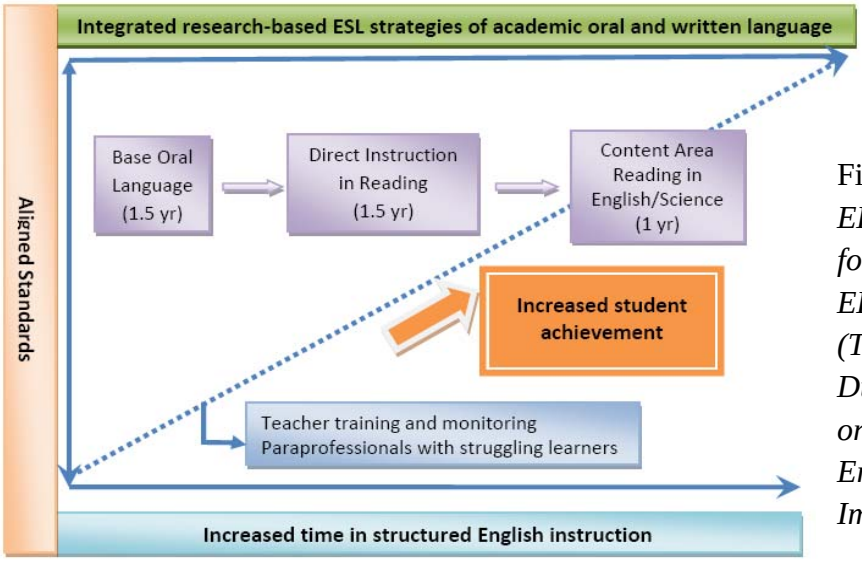

Figure 3. *Project ELLA model (K-3) for any type of ELL program (Transitional, Dual Language, or Structured English Immersion)*

or traditional ongoing face-to-face staff development to impact teachers and their principals in delivering a scalable curriculum and instructional model to ELL students. ***Action 1a:*** Implement ELLA and a biweekly virtual coaching program, via *Coaching Solutions* (CS), for 280 teachers and their 20 principals annually, and implement ELLA and a monthly face-to-face staff development for 280 teachers and their 20 principals annually. ***GOAL 2:*** To scale up three programs to support the increase in ELLs' achievement in reading/language arts and science ***Objective 2a***: To implement across 40 schools, the scalable Project ELLA, and to observe typical practice in 20 schools as a comparison, along with the supporting *CS* for staff development in 20 schools, face-to-face coaching/staff development in 20 schools, and minimal webinars/staff development in typical practice in 20 schools. ***Strategy 2a***: Condition 1—Scale the model to *20 schools* with Project ELLA supported by *CS* (provided to teachers biweekly and to principals monthly with numbers as follows: 20 schools with 1000 nested classrooms (50 classrooms per

school over the 4 years of scaling); 280 teachers nested within 1000 classrooms (14 teachers per school over the 4 years of scaling); 20 principals (1 per school over the 4 years of scaling); 25,000 students nested in 1000 classrooms (1250 students per school over the 4 years of scaling) ***Strategy 2b***: Condition 2—Scale the model to *20 schools* with Project ELLA supported by on-site face-to-face staff development monthly with access to coaches and to principals in those schools monthly with access to coaches with numbers as follows: 20 schools, 1000 nested classrooms (50 classrooms per school over the 4 years of scaling); 280 teachers (14 teachers per school over the 4 years of scaling); 20 principals (1 per school over the 4 years of scaling); 25,000 students (1250 students per school over the 4 years of scaling). ***Strategy 2c***: Condition 3—Utilize the typical practice curriculum and instruction already in place for ELLs with *20 schools* supported by the webinars provided bimonthly and to principals bimonthly with numbers as follows: 20 schools, 1000 nested classrooms (50 classrooms per school over the 4 years of scaling); 280 teachers (14 teachers per school over the 4 years of scaling); 20 principals (1 per school over the 4 years of scaling); 25,000 students (1250 students per school over the 4 years of scaling) ***Action 2a, b, c:*** Implement Project ELLA in 40 schools in any type of ELL program the school houses, along with *CS* or traditional face-to-face staff development (See the model in Section D) and implement webinars/staff development with typical practice in 20 schools and 280 teachers and 20 principals. Hold staff development by condition as specified per condition for the principals of the 60 schools on the project, ELLs' needs, change process, programs and curriculum for ELLs, mentoring teachers, recruiting teachers, retaining teachers of ELLs, and leadership and organizational health. ***Objective 2b:*** To certify 500 teachers (impacting 37,500 ELLs over 5 years) in ESL/Bilingual education via the *TEOC* online program delivered through Texas A&M University. ***Strategy 2b:*** Scale an online certificate program that leads to 500 highly

qualified teachers for serving ELLs**.** ***Action 1b:*** Implement the scalable certificate program with TOEC provided via Texas A&M University's Bilingual Programs, College of Education and Human Development (10 week course for ESL certificate; 15 weeks for Bilingual certificate) and supplement the current materials in the training with video representing quality instruction for ELLs from the teachers being trained via CS in the ELLA model (the teachers who will be able to be certified via the TEOC program will not be on the same school campuses with the ECS teachers). ***Strategy 2b1***: Recruit, train, monitor, mentor, and track for retention teachers for ELL students. ***Action 2b1***: Recruit 500 teachers via an online and telephone marketing campaign, on three cycles annually, to assist them in being highly qualified to teach ELLs**.** ***Action 2b2:*** Train the recruited teachers via the TOEC in 10 weeks or in 15 weeks, depending on the certification sought. ***Action 2b3:*** Monitor the teachers' achievement record with their students on state assessments. ***Action 2b4:*** Track the teachers throughout the grant period to ascertain their retention rates and their service to ELLs**.** ***Action 2b5:*** Provide 210 principals at the schools of these 500 teachers, 5 additional webinars on how to recruit, mentor, and retain teachers of ELLs via CS (half will be a randomly assigned group to receive an additional five webinars/CS per year).

A2b. GOAL, STRATEGIES, ACTIONS RESULTING IN ACHIEVING OUTCOMES Based on the multiplier effect, there will be 112,500 ELLs (75,000 in the ECS; 37,500 in the TEOC program), 1,340 teachers (840 in the ECS; 500 in the TEOC program), 270 principals (60 from ECS; 210 from the TOEC), and 4500 classrooms (3000 in the ECS; 1500 in the TEOC program) impacted. ECS/TOEC Scale Up features (a) use of evidence-based high-tech for training, monitoring, mentoring, retaining teachers and for training and mentoring principals who work with ELLs' teachers, (b) implementation of an evidence-based ELL program that increases ELL

achievement, and/or (c) the evidence-based online certificate preparation program for increasing highly qualified teachers for ELLs. A randomized trial experimental study will be implemented and will be monitored by a highly qualified evaluation team.

B. STRENGTH OF RESEARCH, SIGNIFICANCE AND MAGNITUDE OF EFFECT

B.1 &2. STRONG EVIDENCE AND MAGNITUDE FOR IMPLEMENTATION OF THE PRACTICES The proposed project is supported by strong evidence from three funded research grants; two representing well-designed and well-implemented experimental or quasi-experimental studies at multiple sites and one having moderate evidence, multiple individuals.

Evidence for instructional intervention (ELLA) on teacher behaviors and student outcomes. Project ELLA is a well-designed experimental and quasi-experimental RCT targeting approximately 1000 Spanish-speaking ELLs initially in developing English language and literacy skills in a large urban school district in Texas with 44 individual campus sites. Randomization was achieved by school rather than by student or teacher so as to (a) observe a state law (Texas Education Code, 1995) that mandates a local language proficiency assessment committee to designate the initial instructional placement of each ELL student and (b) minimize contamination of intervention which otherwise would be the case if both intervention and control classrooms were placed on the same campus. Schools were randomly assigned to either the intervention (implementing an enhanced ESL instructional model) or the control group (implementing the typical practice of ESL instruction in the district). Teachers on the assigned campuses were then randomly selected. The same cohort of students was followed from beginning kindergarten longitudinally through 3rd grade in order to monitor the developmental pattern of language and literacy acquisition. Therefore, ELLA has both strong internal and external validity.

To date, we have conducted 7 major studies at different stages of Project ELLA (K-3) and have presented at national, regional, and state conferences, including a presentation to the USDOE Officers and to IES (detailed descriptions of intervention are provided in section D1) on the effectiveness of the intervention regarding teachers' pedagogical behavior and ELL students' English oral and literacy development. Only three are reported in detail due to length (but see Table 1 for all the published studies). For example, in kindergarten year, a comparison study (Lara-Alecio, Tong, Irby, & Mathes, 2009) was conducted regarding teachers' pedagogical practices between treatment classrooms and control/typical classrooms through the use of BOP. Treatment teachers received bi-weekly professional development. There were 9,508 observations collected four times during the academic year from 54 classrooms in 23 schools. Findings indicated that experimental teachers' pedagogical deliveries were influenced by the intervention because they devoted a significantly higher proportion of instructional time in (a) intensive English, (b) cognitive and academic English language, (c) expressive language-related communication, (d) teacher-ask/student-answer type of activity, (e) research-based ESL strategies including academic scaffolding and leveled questions, and (f) academic task rather than social participation task, all of which are considered as effective instructional practice for ELLs (i.e., Gersten & Baker, 2000; Saunders et al., 1998; Cheung & Slavin, 2005), reflecting the quality of teaching. The study also indicated that during ESL intervention, experimental classroom teachers were following the outlined objectives in oral-language acquisition, with an emphasis on teaching cognitively demanding content and vocabulary development. Further, provided with instant feedback from the fidelity check, the teachers are more aware of their pedagogical behavior, which enhances the consistency and quality of project implementation. Therefore, as suggested by our observational study, an early intervention with ongoing teacher

training in intensive English instruction in cognitively demanding areas can provide ELLs with more academic language development opportunities. ***Second study:*** When students completed first grade, we (Tong, Lara-Alecio, Irby, Mathes, & Kwok, 2008) examined the oral language development trajectory over a 2-year period (K-1) using latent growth modeling and found that the intervention promoted ELLs' academic oral language acquisition throughout kindergarten and first grade at a significantly faster rate than was determined among the control students. In other words, the comprehensive intervention produced a difference in accelerating ELLs' oral English development (after Benjamini-Hochberg correction method of multiple group comparison was applied). The magnitude (i.e., Cohen's d) of such statistically significant difference was .68. These students were followed when they matriculated to 2nd grade. In Tong et al. (2010), multilevel modeling approach was applied to address the clustering effect of repeated measure, students within classrooms and classroom within schools (K-2) and revealed that although control students held a higher level of English proficiency upon school entry, students receiving the treatment exhibited a steeper growth and outperformed their control peers by the end of second grade, reflecting a range of phonological awareness, oral language skills, and decoding and reading proficiency. This advantage in the intervention group might be explained by the greater emphasis on phonics, phoneme discrimination, segmentation, and blending through direct instruction and structured standards-aligned lessons in the intervention classrooms. Consequently, our intervention might have filled a critical gap for well-planned, implemented, direct, and monitored curricular and instructional practices that can accelerate subsequent L2 acquisition so that the disadvantages in English proficiency that ELLs bring with them upon school entry can be removed. *One of the 7 studies, currently under review* by the TABE Journal, provides an overall evaluation of the ELLs' performance on a state reading

assessment in grade 3. We found that regardless of the type of ELL program, students in experimental group were able to master the necessary knowledge and skills in academic reading. More importantly, it is the quality of instruction, as reflected in project ELLA that makes a difference in ELLs' English language development and content area learning. Based on strong evidence from these studies with the experimental and quasi-experimental design and the report to the Institute for Education Sciences (2010), we claim that the standards aligned, strategies integrated, content area embedded, direct, and structured ESL instruction with on-going staff development and strong district/ campus/ university collaborations can accelerate ELL students' academic oracy and literacy in English reading skills from K-3 (presentations also have reported growth in science knowledge and skills), and we hypothesize that given the same practice and strategy, strong effects in these studies would be likely to be statistically significant in a larger group of ELLs for this scale-up.

Table 1. *Evidence from Project ELLA to support ECS*

Study	Appear in	Grade level	Outcome measures	Statistical significance	Effect size
1	Bilingual Research Journal	K	WLPB-R Picture Vocabulary (PV), Listening Comprehension (LC)	*p*s < .001	Cramer's *V* = .18 (median)
2	American Educational Research Journal	K-1	PV, LC, Letter Word identification, Word Attack, Passage Comprehension (PC)	*p*s < .001	Cohen's *d* = .68
3.	Journal of Educational Research	K-1	CTOPP Blending Phonemes (BP), Segmenting Words (SW); WLPB-R PC, LC	*p* =. 003	Partial eta squared = .11

4.	Elementary School Journal	K-1-2	BP, SW; PV, LC, Memory for Sentences, Oral Vocabulary; IPT; Letter Name, Letter Sound; DIBELS-Oral Reading Fluency	*p*s < .05	Three level HLM (effect size is not appropriate)
5.	Hispanic Journal of Behavior Sciences	K-1-2	Story grammar; WLPB-R PV, LC	*p*s < .05	Cohen's *d* = .35 (median)
6.	Journal of Research in Reading (under revision)	K-1-2	Texas Assessment of Knowledge and Skills (TAKS), PV, LC	*p*s < .05	partial eta squared > .059

Evidence for coaching on student outcomes. It is known that better implementation of scientifically-validated reading interventions is related to better outcomes for students (Mathes et al, 2010). Even so, the barriers to high quality implementation of interventions may seem insurmountable to teachers working in isolation and with little support. Coaching is one model of professional development that has been examined as a means to improve knowledge and practice of teachers in general, special, and bilingual (two program types for ELLs) education (Bean, Swan, & Knaub, 2003; Gersten & Kelly, 1992; Garet et al., 2001; Lara-Alecio, Irby, Tong, & Mathes, 2010; Klingner, 2004; Marks & Gersten, 1998). Coaching support has been shown to lower teacher attrition rates (Danielson, 1999; Irinaga-Bistolas, Schalock, Marvin & Beck, 2007). Although coaching has demonstrable impact on teacher change, few studies have examined the effects of coaching on student outcomes, particularly of ELLs. A recent synthesis of technology-based mentoring found no studies that provided data to support the impact that mentoring of teachers had on student outcomes (Gentry et al., 2008). Recently, our research

group established that reading outcomes of first-graders receiving Tier 2 intervention, whose teachers received either text-only technology-based coaching support or on-site coaching, were similar on all measures across multiple domains of reading, but that students in both coaching groups outperformed students whose teachers received assistance by request on measures of reading including phonological awareness and word recognition (Denton, Mathes, & Weiser, 2010). Since then, our group has worked to enhance our technology-based coaching model to make coaching via technology more like coaching by a person (i.e. observations and face-to-face conversations using webcams and teleconferencing). We call this coaching platform the *CS* (Mathes, Cuevas, & Denton, 2009). To date, we have conducted one study with the refined *CS* platform at Tier 2 (which will be the level at which we apply this model) with teachers of first-graders at risk for being identified as learning disabled. In this study, all teachers were provided intensive face-to-face staff development on the implementation of *Early Interventions in Reading* (*EIR*: Mathes & Torgesen, 2005) and in the use of *I-Station's Indicators of Progress (ISIP)* CAT-Driven CPM data (Mathes, Torgesen, & Herron, 2009) to inform instruction, but were assigned randomly to the *CS* or no-coaching conditions. This study established that across all measures of reading administered, the most important factors for predicting outcomes were students' initial status (i.e., pretest scores) and how many *EIR* lessons were completed (Mathes & Weiser, 2010). Commonality coefficient analyses of these coaching implementation variables were able to explain the unique and shared variance of these variables on participating students' post-test scores. Results from these analyses are presented in Table 2. Additionally, due to the evidence from ELLA that support is needed for ELL academic success, coaching/training for the principals will be provided, though no study using the vitual CS has been conducted. However, the material/content for the virtual coaching will be based on three components with numerous

studies. Additionally, for principals we will use the MCREL Balanced Leadership Framework (2003) derived from a meta-analysis (Waters, Marzano, & McNulty, 2003) of 30 years of research related to leadership impact on student achievement. Though data on each item for training, yielded small to medium effect sizes (.15 to .32), no studies have been scaled or have studied those responsibilities in an RCT such as this scale up project will have the opportunity to do.

Table 2.*Variance in Post-Test Scores Explained by Coaching Variables*

Post-Test Measure	Unique Variance of End Lesson	Unique Variance of Quality	Unique Variance of Pacing	Shared or Overlapping Variance
Oral Reading Fluency	73%	1%	4%	22%
WJIII Word Identification	51%	1%	15%	33%
WJIII Word Attack	81%	1%	2%	16%
WJIII Comprehension	82%	14%	11%	7%
WJIII Spelling	90%	5%	2%	3%
TOWRE Sight Word Efficiency	78%	16%	15%	9%
TOWRE Phonemic Decoding	60%	1%	5%	34%
CTOPP Blending Words	91%	1%	2%	6%
CTOPP Blending Non-Words	70%	2%	1%	27%
CTOPP Segmenting Words	60%	1%	6%	33%

Evidence for the TOEC. The projected shortage of teachers for ELLs in Texas alone was estimated for 2014 (within the scope of this ECS grant) to be 14,000 (Texas Education Agency, 2009). The certification intervention (TOEC) was evaluated via an independent evaluation (twice) from the Southwest Educational Development Laboratories. Their evaluation indicated that the

TOEC curriculum was grounded in research and delivered in a strong manner. Since its inception in Fall, 2004, the TOEC has had 327 participants who have become certified as ESL/Bilingual teachers making them highly qualified to teach ELLs. Approximately, 300 participants took the course for professional development purposes only.

C. EXPERIENCE OF THE APPLICANT

C.1. PAST PERFORMANCE OF THE ELIGIBLE APPLICANT Dr. Rafael Lara-Alecio, Prime PI on this ECS project has led a major $6,762,115 grant funded by Institute for Education Science Longitudinal Randomized Trial Study, Project ELLA. It was only one of three funded of this nature in the country. He leads another Discovery Research K-12 National Science Foundation (DRL-0822343), Project MSSELL, three-year longitudinal randomized trial study regarding ELLs and science academic language which follows up on Project ELLA (Dr. Tong is a Co-PI on this grant.). As Dr. Lara's vita indicates, he has been PI of numerous grants sponsored by the USDOE and the Office of English Language Acquisition (and also formerly OBEMLA) and grants from the Texas Education Agency (TEA); grants have totaled over $20,000,000. He is also PI for an international Costa Rican grant for developing English via technology throughout Costa Rica in collaboration with the Costa Rica United States Foundation and the Interamerican Development Bank; this project is designed as a randomized trial experimental study for rural, urban, and urban marginalized schools in Costa Rica. Dr. Beverly Irby has been a Co-PI on the Project ELLA as has Dr. Patricia Mathes. Additionally, Dr. Irby has been the PI or Co-PI on numerous grants from the USDOE for special needs students (special education leadership, first generation college students, and ELLs) via OELA (also OBEMLA), TRIO grants, and OSERS. Currently, through SHSU, she is a PI on a longitudinal DR-K12 NSF

grant. Additionally, Dr. Mathes has been a PI or CO-PI on numerous OSERS grants and scale-up grants as noted in her vita.

C.2. RECORD OF IMPROVED STUDENT ACHIEVEMENT IN SCHOOLS

Dr. Lara-Alecio and the Bilingual Program at Texas A&M University are nationally known and known statewide and respected for the work in the public schools of Texas. Dr. Lara has improved educational achievement of ELLs in Texas and nationally based upon his production of the only pedagogical classroom theory and accompanying observation instrument for teachers who work with ELLs. The TAMU Bilingual Program has the only Texas Education Agency sponsored ESL/Bilingual certificate preparation program in the state that certifies teachers via this alternative route. Dr. Lara-Alecio, with the ELLA project, over the six year grant time period which ended in 2009 aided Aldine Independent School District in reducing the gap between ELLs and non-ELLs to lead Aldine ISD to become the 2010 Broad Foundation winner, the highest honor bestowed on an urban school district in the nation. Dr. Tong has worked with Dr. Lara-Alecio to study and produce results that can be interpreted as evidence-based best practices. Dr. Irby from Sam Houston State University has worked alongside Dr. Lara-Alecio in producing the results for ELLs and for their principals. She has developed the Hispanic Bilingual Gifted Screening Instrument and has worked on statewide task forces such as the Dual Language Initiative Task Force sponsored by TEA. Additionally, she has co-authored with Dr. Genevieve Brown, the Synergistic Leadership Theory, the first published leadership theory in the 21st Century, and that which is inclusive of genders and ethnicities in all types of school districts. Additionally, Irby and Brown have worked with principal and teachers in and out of the state in developing their reflective practice through action research and portfolio development. Sam Houston State University has a strong connection to the school districts in the greater Houston

urban and rural areas. It has a partnership with over 50 districts (recognized or exemplary as noted by TEA) and places student teachers and mentors principals and supervising teachers in working with new student teachers. A recent study by the TEA State Board of Educator Certification indicated that 98% of the principals were extremely satisfied with the teacher quality from SHSU. Irby has served as the doctoral director of educational leadership for four years, the chair of the Department of Educational Leadership and Counseling (one of the largest producers of principals and counselors for public schools in the state) and the Associate Dean for Graduate Programs in the College of Education. For 25 years, Dr. Brown has served as Coordinator of Secondary Programs, Chair of Educational Leadership and Counseling, and Dean of the College of Education at SHSU and has impacted the lives of 1000s of students in the public schools of Texas. Dr. Patricia Mathes is nationally respected for her work in research in early interventions for struggling readers. Dr. Mathes came to SMU in 2003 as the Texas Instruments Foundation Chair in Reading Research. Under her leadership, the Institute for Reading Research has been engaged in several federally funded research grants, including Project Scale-up: Scaling-up Effective Interventions for Preventing Reading Difficulties, Project MAXIMIZE: Maximizing Literacy Learning Among Children with Mild to Moderate Mental Retardation, and Project ELLA: English Language/Literacy Acquisition. In addition, she has initiated several projects through private foundation funding, such as the Texas Instruments Model Demonstration Project, whose objective is to demonstrate the power of providing quality early childhood education services in three area Head Start of Greater Dallas Centers in Dallas, Texas.

D. QUALITY OF THE PROJECT EVALUATION

D.1. RESEARCH DESIGN To evaluate the efficacy of this study, among urban, suburban, and rural districts in Texas that have expressed interest in participating in our project, a design composed of both experimental and quasi-experimental elements will be employed: (a) with random assignment of schools to one of the three coaching conditions (see descriptions below) and (b) a quasi-experimental design using propensity score to create matched groups with the following student characteristics: age, gender, ethnicity, socioeconomic status, family background, previous scores on English language proficiency test (as given by the district to determine ELL status). In addition, all the tests will be administered in the same way to both all participants, K-3. In this design, students and classrooms will be nested within schools across the four years of the study. Additionally, teachers will be recruited across the state of Texas from urban, suburban, and small town Texas districts who sign up for the TOEC. To avoid confounding effect, we will exclude teachers from schools participating in the ESC component and only include teachers from the remainder of districts across the state to participate in TOEC component. Principals from TOEC teachers' schools will be randomly assigned to participate in 5 additional virtual coaching sessions with webinars per year in the project. The teachers and school ratings through the Texas database, PEIMs, will be compared to those principals randomly assigned to the control group that receive only 5 basis coaching seminars. The question becomes does amount of focused coaching make a difference in teacher/ELL student outcomes.

Power Analysis ***<u>For ECS.</u>*** We used Optimal Design (Liu, Spybrook, Congdon, Martinez, & Raudenbush, 2006), a software for multi-level clustered design, to estimate the necessary number of schools so as to ensure sufficient statistical power in the end. The parameters include an alpha level of .05, effect size of .5 (a medium to large effect size), a cluster size of 25 (as required by Texas Education Agency) and an intra-class correlation of .20 (a default value suggested by

What Works for Clearing House, [WWC], 2008). These parameters correspond to the statistical power of .95 with 48 schools. Taking into account the attrition rate which is typical of any longitudinal study of this kind, we propose to begin this research in 60 schools, which corresponds to a power of .98. ***For TOEC.*** There are two levels of evaluation in this component. First, we will use a random sampling strategy from 500 teachers recruited and certified based on the TOEC from various districts across Texas (excluding the 60 schools for randomization to be placed in one of the three ECS coaching conditions) to determine the impact of ELL student growth using the TELPAS over a two year period during the grant period (A power analysis, based on Optimal Design software, using a.05 alpha level, .30 anticipated effect size, and a power of .95 yields a sample of 210). These 210 principals will be randomly assigned either to receive additional training (5 additional webinars each year they are involved in the grant that are based on the training modules from CS in addition to the MCREL Leadership Framework and ELLA strategies) or to remain with the basic 5 training/coaching sessions.

Sampling ECS. The research for the ECS component utilizes cluster random sampling to randomly assign schools to one of the three conditions (see description below). There are two reasons for randomization at school level: (a) when school is the unit of randomization, we will be able to avoid contamination/bleeding over the coaching conditions on the same campus; and (b) the state law (Acts 1995, 74th Leg., ch. 260, § 1, eff. May, 30, 1995) prohibits random assignment of students to different language learning program types, e.g., bilingual, ESL, etc., and parents reserve the right to determine which program type their ELL children be placed (given the availability of these programs). However, students in each program will be attending the same school and living in the same neighborhoods. Thus, possible effects of school, socio-economic status, and culture of specific neighborhoods will be diminished. To further mitigate

the inability to assign students randomly to program type, we will apply a robust matching scheme (i.e., matching based on the propensity scores) to ensure initial language and literacy equivalency of our groups. At the beginning of Year 1 we will also collect scores from oral language proficiency tests given by the respective districts (as required by TEA). Qualitatively, 120 of the teachers and 40 principals the ECS model that participate over the four years in a strand (K, 1, 2, 3) will be the purposive sample for helping to understand more deeply the implementation of ELLA via CS or face-to-face staff development.

The Conditions For the ***ECS component*** of the project***,*** schools will be randomly assigned to implement one of the three conditions: (a) English language and literacy acquisition (ELLA) model with *CS,* (b) ELLA model with face-to-face staff development, and (c) comparison group/typical practice with minimal webinar/staff development. In the ***second component of the project, TOEC****,* 100 teachers per year will be recruited for the online certificate preparation program for ESL and/or Bilingual education; recorded teachers' classroom instruction as exemplars will be added in the second year of the project to the TOEC training modules. A description of the full ELLA model with Coaching Solutions follows. ***ECS COMPONENT:***

ELLA Model. ELLA has two levels and three tiers included in the scalable model with each level discussed herein. The two levels are: Level 1- Teachers' Professional Development, Monitoring, and Mentoring/Coaching and Level 2- Student Achievement. The three tiers includes the first tier of general curriculum for all students, the second tier of the ELLA English language development curriculum which is for all ELLs, and the third tier which is for the struggling learners. ***LEVEL 1: Professional Development ELLA Model***. Condition 1 (Condition 2 will be a face-to-face monthly modification) Bi-weekly professional development workshops are provided to teachers with 6 hours per month with the following activities: (a) reviewing and

practicing upcoming lessons, (b) reflecting on and discussing student learning, (c) assessing pedagogical progress as a teacher in the intervention, and (d) being instructed on the ESL strategies (e.g., academic language scaffolding-visual and modeled talks, flexible grouping, shared reading, leveled questions, manipulatives, and total physical response (see Appendix H2 for incorporated lessons). For example, in kindergarten year teachers are provided biweekly professional development sessions on the following strategies: (a) enhanced instruction via planning, (b) support for student involvement, (c) vocabulary building and fluency, (d) oral-language development, (e) literacy development, (f) reading comprehension, (g) parental support and involvement, and (h) reflective practice via portfolio development. In each of the lessons there are three to five strategies required for teachers to implement in teaching. Teachers in treatment group follow a script with minimal L1 clarifications. from K to 3. They are trained not to translate or code-switch between the two languages. The *CS* will be used to deliver professional development on ELLA Condition 1, to monitor the classroom, to observe, and to provide feedback (the same number of observations will take place in the classroom live in Conditions 2 and 3). CS' space is comprised of staff development information, video demonstrations (Coaches guide teachers to specific video demonstrations by placing links to specific routines into teacher space),and access to a larger community beyond their classroom. This community is partitioned into four spaces: *Coach Space, Community Space*, *Team Space,* and *Data Space*. The final space on the *CS* is the *Data Space*. This space provides teachers with access to all child level data collected as part of the project. Of greatest relevance are graphic representations of up-to-date CPM data from *ISIP,* which is accessed through a portal within the *CS*. Using the *CS* platform, our coaches will provide student focused coaching following a 4 step process: (a) data collection and review; (b) webcam classroom observations and

teleconferencing, (c) one-on-one and team discussions, and (d) referencing teacher resources. The first step, data collection and review, requires teachers and coaches to examine student data with *ISIP* and other measures added. The second step, webcam classroom observations and teleconferencing, provide a venue for the coach to directly observe instruction using the BOP. An added benefit is that images captured digitally can also be viewed by the teacher for up to 10 days after an observation. Coaches are able to pull short clips of instruction to illustrate for the teacher both positive and less desirable features of instruction. Observations are followed by teleconferences, focused on reflection, in which observed instruction is discussed in terms of student behavior and achievement. *CS* will be applied for the principals but with differing information input and based on the 21 principal responsibilities (Waters et al.).

Level II ELLA Student Instruction. Level II is composed of three tiers. *Tier I* is composed of the regular language arts, math, science, and social studies instruction in the native or target language. *Tier II* is the structured and direct English intervention, ELLA, delivered to treatment students during an extended ESL block with (75 minutes in kindergarten, 90 minutes in 1st, 2nd, and 3rd grade daily) with an objective to develop English language and literacy skills with science threaded as the content area. The instruction includes various components: (a) Santilliana Intensive English (Ventriglia & Gonzalez, 2000) in teaching second language learners content areas implemented in K and 1, replaced by Early Intervention in Reading II (EIR, Mathes, Torgesen, Menchetti, Wahl, & Grek, 2004) in 2nd grade, and again replaced by *C*ontent *R*eading *I*ntegrating *S*cience for *E*nglish *L*anguage and *L*iteracy *A*cquisition ([CRISELLA], Irby, Lara-Alecio, Mathes, Rodriguez, & Quiros, 2007) in 3rd grade; (b) *S*tory-re*T*elling and higher-order thinking for *E*nglish *L*iteracy and *L*anguage *A*cquisition ([STELLA], Irby, Lara-Alecio, Mathes, Rodriguez, & Quiros, 2004), which selects authentic literature from children's background and

uses Bloom's Taxonomy for leveled questions identified as easy, moderate, and difficult; and (c) teacher-conducted daily oral language to develop students' oral language (10 minutes in K and 1), modified to academic oral and written language in science (AOWLS) in 2nd and 3rd grade to illicit students' writing. *Tier III* is the intensive small group instruction via communication games (Quiros, Irby, Lara-Alecio, & Mathes, 2004) for an additional 20 minutes to struggling students identified by teachers via students' classroom functional ability. During the second semester of 1st grade, Early Interventions in Reading Level 1 (Mathes et al., 2004) replaces communication games. It is a more aggressive reading intervention and is continued with Early Interventions in Reading, Level 1 and 2, in 2nd and 3rd grade. Following language developmental patterns, the intervention focuses on oral language acquisition during the first two years (K and 1) and moved on to direct teaching of reading fluency and comprehension in 2nd grade, and finally targeted content-area reading in 3rd grade. An in-depth description of Tier II and III in grade 3 follows. ***STELLA***. STELLA was designed to be delivered in a 20-minute lesson in kindergarten and first grade and then increases to 35 minutes during second and third grade. It is a completely scripted component which included vocabulary words, pre-selected ESL strategies and leveled questions for higher order thinking skills. Teachers receive scripts with one story book per week. The books cover both narrative and expository stories that supported the science content being taught in CRISELLA (see the following section). During instruction, teachers introduce vocabulary, provide students opportunities to participate in discussion, ask leveled questions, and encourage students to work in pairs and/or small groups. ***CRISELLA (grade 3).*** In 3rd grade, Content Reading Integrating Science for English Language and Literacy Acquisition (CRISELLA) replaces EIR with lesson plans that can overlay any science text/curriculum. We chose for ELLA, Scott Foresman's (2006) third grade science text due the exemplary scaffolded

expository reading passages that help second language learners develop science academic language and expository reading skills. (The text is not the basis of the instruction- only one of the tools.) Teachers receive scripted lesson plans that integrate prereading skills, vocabulary building activities, partner reading, graphic organizers, hands-on inquiry activities, cooperative grouping, scaffolded questions, vocabulary extensions, fluency practice, and direct teaching of reading skills (e.g., sequencing, comparing and contrasting, drawing conclusions, main idea and details, cause and effect, and making inferences). The scope and sequence is used to align the curriculum with the state standards (i.e., the TEKS) and the national science standards. In addition, there is a 35 minutes/week for Texas Assessment Knowledge and Skills (TAKS, a state standardized measure in reading) preparation passages related to science content presented in CRISELLA and STELLA. Each lesson within the chapter begins with sound preview and word knowledge. The teacher supports students with pre-reading skills through guided practice on sounding out, pronouncing, and defining vocabulary words and any challenging words that may appear in the lesson reading. The teacher then sets the purpose for reading and students partner-read a small section of the lesson from the textbook. Student partners are assigned based on fluency rates, with one partner having slightly stronger reading skills acting as a peer-tutor. The teacher then focuses on any pictures, diagrams, and captions by asking specific questions so that students are aware how visuals could assist in understanding the text. The teacher then asked leveled questions to monitor comprehension, and students were encouraged to re-read and find evidence to support their responses. Such cycle of partner-reading, emphasizing visuals, and leveled questions repeated until students read the entire lesson. Partners close out the lesson by completing a lesson summary activity. Throughout the lessons within the chapter the students are exposed to vocabulary extension mini-lessons, hands-on science activities, guided inquiry, and

several opportunities to practice the target expository reading skill. Each chapter concludes with independent student reading of leveled readers that summarize the content, review of vocabulary words, and a chapter assessment. ***Academic Oral and Written Language for Science AOWLS***. Daily oral language activity is used in kindergarten and 1st grade. Pre-selected questions to spark student discussion on a variety of topics are embedded with science content as a district requirement because of the necessity to pass a high stakes test in science by 5th grade. In 2nd grade, we continue integrating academic language through AOWLS. This science-based component is created using science-related visuals to scaffold concept development, encourage oral language, and stimulate written languages. This component is integrated in STELLA in 3rd grade. ***TOEC Component***. In this component, the Online ESL Certification Prep Course will assist inservice teachers in developing knowledge and skills for teaching English language learners (ELLs). Educators who participate in this course will increase their knowledge base for teaching ELLs and will learn to design effective instruction for ELLs. The 10-week online course provides comprehensive coverage of the teacher competencies tested on the TExES ESL Supplemental Examination (#154). Some of the lesson topics include: language acquisition theories, approaches and methods of second language teaching, including components of ELLA, assessment of ELLs. This program is self-paced; convenient and flexible, and earns 120 hours of professional development (the program is a recognized professional development program by the Texas Education Agency, State Board of Educator Certification). Additionally, the college credit may be earned should the inservice teacher wish to apply the coursework toward a master's degree.

D.2. SCALABLE MODEL

Current theories of scaling in education (i.e., Elmore, 1996; Denton & Fletcher, 2005) and public health (i.e., Goodman, & Steckler, 1989) suggest 5 stages in the process of taking an innovation to scale: (a) Development, (b) Tests of Robustness, (c) Capacity Building, (d) Scaling, and (e) Networking. During the *Development* and *Tests of Robustness* phases, the innovation is designed and evaluated through field-based research in controlled contexts. Our previous IES research projects represent movement through each of these stages. If an innovation is found to be effective in controlled contexts, the *Capacity Building* and *Scaling* phases begin. The networking aspect of Scaling is beyond the scope of the current proposal, although the current scale up work will facilitate networking. Capacity building includes (a) development of materials and technologies that support high quality sustained implementation of the innovation are developed including staff development and support materials and (b) recruitment and placement of personnel who possess prerequisite skills that facilitate successful initial implementation of the innovation. ECS Scaling phases move though a 4 year life-cycle starting with initial Implementation (Year 1), moving to Sustaining (Year 3), and Maintaining (Year 3), and ending with Institutionalization (Year 4). Across the life cycle on-site technical support provided to schools is dramatically decreased. Initially the original research team continues responsibility for staff development and on-going support to district personnel, and continues to monitor the quality and fidelity of implementation, and continues to collect student outcome data. At this point, sustainability becomes an issue, as schools must decide whether to continue or discontinue the innovation. If schools opt to maintain the innovation, there is a need to release staff development and support responsibilities to a larger cadre support personnel. Once the transfer for providing staff development and support has been transferred to other personnel including personnel within the school, the innovation is considered to have been institutionalized. If the

educational practices maintain their effectiveness under this model, widespread diffusion is possible, and the phase of *Networking* is begun, in which a large cadre of professional trainers and coaches provide staff development and ongoing technical support for implementation of the innovation in widely separated geographic areas. Based on these scaling theories, a conceptual model with number of teachers/classrooms *per school* for this scale-up research project is depicted in Figure 3 (The TOEC model shows years and scaling, it is holistic and not by school.).

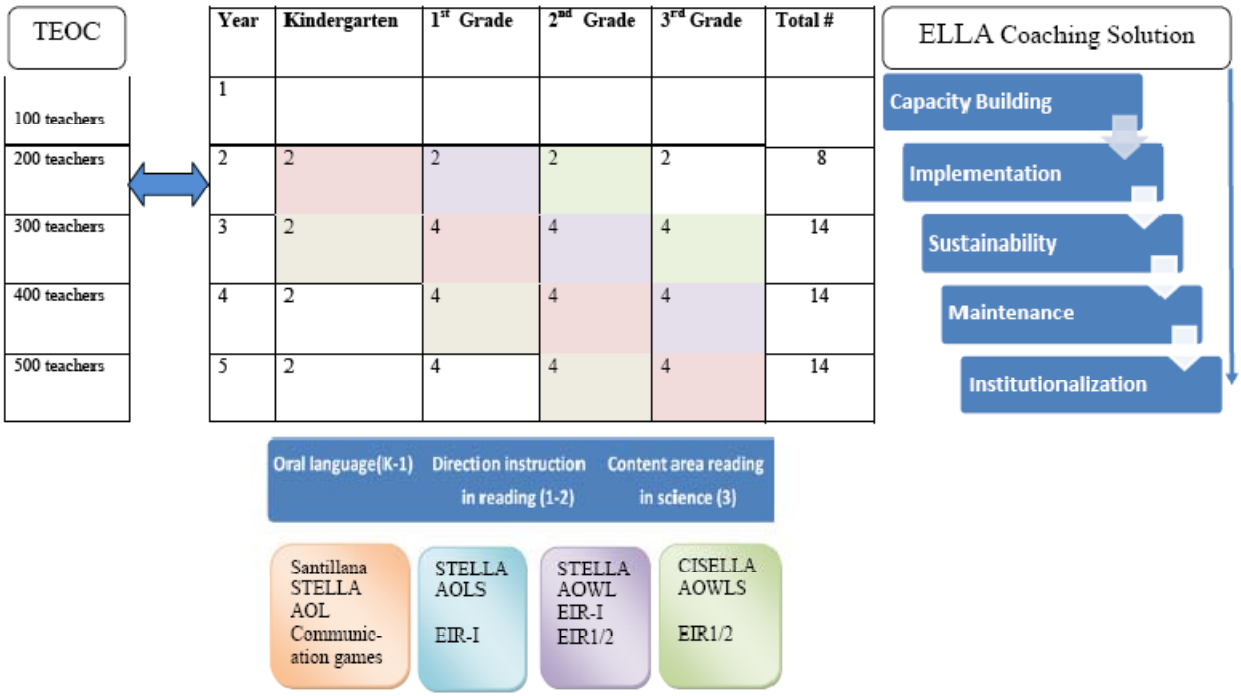

Figure 3. *ELLA Coaching Solution Scale-up Model*

D.3. ASSESSMENT TOOLS

The efficacy of the proposed scalable model will be evaluated both quantitatively and qualitatively. Quantitative outcome variables measuring students' English language development are listed in Table 3 by construct, instruments, and test cycle. Pre/post assessment results will be collected annually and analyzed each year and collectively over the five year of the grant. In cases where there are multiple measures within the same construct, composite scores will be

calculated, or Benjamini-Hochberg correction procedure will applied to take into account multiple outcome measures in the same outcome domain tested with multiple comparison groups, following the guidelines provided by What Works for Clearing House (WWC, 2008). The following tests will be used Test of Phonological Awareness-2nd Edition: PLUS (TOPA-2+), Istation's Indicators of Progress (ISIP), Texas English Language Proficiency Assessment System (TELPAS), Dyned English placement, Stanford Achievement Test (10th edition), Test of written expression (TOWE), Naglieri Nonverbal Ability Test (second edition)—NNAT2 . For the teachers, the following measures will be used: BOP, Teacher Observation Record and Teachers' Sense of Efficacy Scale and for campuses- Organizational Health Index (OHI). Other qualitative instruments will be developed. See Appendix H3 for the Level of Measurement, Constructs Measured, and Measurement Cycle. We share a less familiar specific test***. Istation's Indicators of Progress*** (*ISIP*: Mathes et al., 2009) is a computerized CPM system that uses a computer-adaptive testing algorithm (CAT) to monitor student growth in critical areas of reading across time and provides web-based teacher reports that give teachers and coaches easy access to data collected by the network and analyzed by the backend data management system and is designed to measure growth in reading every month and across academic years. Its development was supported originally by an OSEP Steppingstones Technology grant (Mathes & Torgesen --#H180G60004) and by NIH SBIR funding. Because *ISIP* is IRT based, rate of growth is presented in terms of an ability index based on a theta score. Change in the ability index score is presented graphically. There are two levels of *ISIP*: Early Reading for Grade Pre-k to 3 (*ISIP-ER*), and Advanced Reading for Grades 4 to 10 (*ISIP-AR*). Each level has been linked to one omnibus ability index scale. *ISIP-ER's* seven subtests include *Phonemic Awareness, Letter Knowledge, Alphabetic Decoding, Connected Text Fluency, Vocabulary,* and *Comprehension,* all

of which are designed to assess the five domains of early reading (i.e., Phonemic Awareness, Phonics, Fluency, Vocabulary, and Comprehension) and require no more than 30 minutes per child with little adult supervision. ***RESEARCH QUESTIONS*** In this experimental longitudinal scale up project, we week to answer the following nines specific questions: 1. How effective is the ECS scalable model in promoting ELL K-3 students' overall academic growth in English?; 2. How effective is the ECS scalable model in promoting ELL K-3 students' overall academic growth in English in rural areas?; 3. Are there student, teacher, or school characteristics that predict success in academic outcome for ELL students?; 4. Do student, teacher, and/or school characteristics interact with condition (i.e., ECS virtual support, ECS with face-to-face support, and non-ELLA typical with minimal virtual support) to predict success in academic outcome for ELL students?; 5. How effective is the ECS scalable model in preparing, recruiting and maintaining highly effective teacher/principal force?; 6. Does the virtual coaching in scaling up the implementation of ELLA make a difference in teacher performance and student achievement as opposed to face-to-face staff development?; 7.To what extent do highly qualified teachers (TOEC) improve ELLs' student achievement based on state assessments?; 8. To what extent do principals who participate in the ECS component training change their campus culture?; 9. To what extent do two randomized groups of principals (TOEC) alter ELLs' annual growth on TELPAS?; 10. How do teachers and principals participating in ECS/TOEC perceive the ELLA model and the TOEC component for improving achievement for ELLs? ***Quantitative Analysis*** The efficacy of each coaching condition (in ECS) will be evaluated quantitatively using SAS PROC MIXED (SAS Institute, 1997) through use of multilevel modeling of individual growth curves to describe and predict learning rates (Raudenbush & Bryk, 2002; Francis, Schatschneider, & Carlson, 1998). The statistical methods employed will permit estimation of (a)

the mean rate of change and an estimate of the extent to which individual's growth differs from this mean rate, and (b) correlates of change. The research design includes one between-subjects factor (coaching condition) and one within-subjects factor (i.e., time; pre-post, time series, or post-only). Additionally, the design indicates that students are nested within teacher within a year and within school across the 4 years. Employing a hierarchical linear model (HLM), we will investigate change in academic performance over time while taking into account the nested structure of the data (in this case, time nested with students, students nested within teachers and schools). Information from all levels of nesting (student characteristics, teacher level variables, and school information) can also be incorporated simultaneously to assess the relative impact of various student, teacher, and school factors that may impact change in language development and academic achievement. Dependent variables include English language skills (measured by instruments listed in Table 3) at student level, teacher efficacy and pedagogical behavior at teacher level, and school culture at school level. ***Qualitative Analysis***. Qualitative analytic methods provide fertile descriptions and explanations of processes that may be outside the purview of traditional quantitative methods. The qualitative data in the proposed research include field notes, questionnaires, and transcripts of interviews. Qualitative data will be entered into the data management system, Qualrus, reviewed, and coded according to themes for the purpose of identifying trends or patterns. Coding themes will include variables that affect the integrity of implementation and student outcomes of the two interventions and variables that support or interfere with their sustained implementation. Data, researcher, and method triangulation will be employed to address credibility (internal validity) and reliability of the data. Additionally, low inference descriptors will be used in reporting the data which also address the issue of credibility.

Answering the Research Questions: *Questions 1 and 2* will be addressed with a series of HLMs

that investigate the effects of coaching condition in ECS. Specifically, data from students who start in kindergarten or 1st grade in Year 1 and who stay throughout 3rd grade (Year 5) will be collected and analyzed. When only two time points are measured, we will regress the posttest measurement onto the pretest to estimate residualized change. When multiple time points are available, we will estimate growth curves to look at differential changes over time and overall mean level differences. *Questions 3 and 4* are concerned with determining differential effects of coaching conditions using student, teacher, and school level characteristics. Same student data (from questions 1 and 2), with the addition of teacher variables (such as amount of English language usage) and school variables (such as school culture, type, and % of ELLs) will be included in this model to assess their impact on change in the achievement variables. Inspecting interactions between preexisting student characteristics and coaching conditions will inform us about possible individual difference variables that impact the effectiveness of intervention. These analyses amount to an inspection of cross-level interactions in an HLM framework. We will also simultaneously examine the relative contributions of child, teacher, and school level characteristics on change in achievement outcomes. *Questions 5 and 6* will be addressed by following the same teachers over 3 or 4 years regarding their teaching efficacy and behavior over time with HLM analysis. When only two time points are measured, we will regress the posttest measurement onto the pretest to estimate residualized change. When multiple time points are available, we will estimate growth curves to look at differential changes over time and overall mean level differences. *Questions 7* will be addressed with 2-level HLM, with teacher as the unit of analysis at level 1 and school at level 2. Student achievement will be reflected as the average class rating (hence, teacher level data) determined by TEA, the state education agency, and will be collected annually. To answer *Question 8*, univariate repeated measures will be conducted

with school culture as the dependent variable and the time as within-subject factor. To answer *Question 9,* HLM approach will be applied with level 1 individual students' TELPAS rating collected at least over a two year period and level 2 school/principal as the unit of analysis. To address *Question 10*, field notes and qualitative data will be taken during the coaching sessions; documents will be analyzed on the CS sites; reflections will be analyzed from the teachers and principals (this was a component of ELLA as teachers completed portfolios of work during the year.) Specifically phenomenological study of the teachers and principals engaged in the scaling up of ELLA and the institutionalization will be engaged qualitatively. During the first year of the project, the qualitative component of the project will be refined including measures, trustworthiness, and credibility of the data and this aspect of the scale up study.

D.4. ELEMENTS AND APPROACHES TO FACILITATE REPLICATION

ECS/TOEC Scale Up will provide not only the quantitative date that can sufficiently support the application of the ELLA intervention that includes the Coaching Solution for both teachers and principals and the TEOC that includes the online certification and the Coaching Solution with the components of ELLA taught along with the principal responsibilities and applied theory mentioned, but it will also provide qualitative data in terms of implementation standards and institutionalization related to the scaling of projects already mentioned. Implementation steps will be documented and tested each year of the project with the Curriculum/Instruction Coordinator and Management Coordinator from SHSU and a notebook for step-by-step implementation of ELLA will be kept. The TOEC Coordinator will do the same for the TOEC component. Materials for the program will be formulated through scale up to be available either online via the Language Diversity Network or via a publisher. For the most part, ELLA materials are available commercially for ease of access.

D.5. & D.6. PROJECT EVALUATION RESOURCES AND RIGOR AND INDEPENDENCE OF RESEARCH EVALUATION Aspects of data analysis will be conducted by Dr. David Francis, the external independent evaluator at University of Houston. He will supervise, Dr. Oi-man Kwok, the quantitative internal evaluator at TAMU and Dr. Anthony Onwuegbuzie, the qualitative internal evaluator at SHSU. Each of the internal evaluators will have graduate assistants assigned from the project and data managers/assistants assigned as well. This team will work together, external to the PIs, but in collaboration with the PIs on garnering the data to review and analyze. The external evaluator will provide quality assurance that there is fidelity in handling of the data and in the analysis and interpretation. The Educational Research and Evaluation Laboratory (EREL), which is housed in the Educational Psychology department in the College of Education at TAMU, includes office spaces for ECS/TOEC staff and an open-access computer lab equipped with 10 Dell desktop computers installed with statistical software including Mplus, HLM, SPSS, AMOS, SAS. Dr. Kwok, the internal evaluator will supervise data analysis in this lab, along with his assistant, Dr. Yoon. Qualitative data analyses will be conducted by a Qualitative Data Manager and graduate research assistants under the supervision of Dr. Tony Onwuegbuzie, qualitative data analysis expert and internal evaluator for project for qualitative data. The lab is established in the Lunenburg Doctoral Research and Distance Learning Lab in the Teacher Education Center at SHSU. It has ample space with a large conference table for meetings via distance so that such meetings can take place between the External Evaluator and the Internal Evaluator at TAMU. The specific objectives are to (a) facilitate acquisition of data, (b) develop tools and procedures for ensuring and monitoring the accuracy and confidentiality of all collected data, (c) facilitate communication and compiling of data, and (d) provide statistical support in the evaluation of the research questions. Of great

relevance is the use of electronic data capture for most of the measures. EREL will use TELEFORM software for electronic data capture. TELEFORM forms allow for hand printed as well as a variety of limited entry and bubbled data fields that eliminate the need for manual entry of data, which greatly facilitate building the database for large samples (for any group administered test/or individual not computerized). Data collected qualitatively will be input at SHSU into Qualrus, a qualitative data management system.

E. STRATEGY AND CAPACITY TO BRING TO SCALE

E.1. THE NUMBER OF STUDENTS TO BE SERVED The total number of students to be served is calculated from two components. First, in ECS (Figure 2), there will be 8 teachers (2 per grade level, K-3) in the initiation of the project (Year 2). In Year 3, 2 more teachers will be added at each grade level except kindergarten. No more teachers will be added in the rest of the project, and each campus will have 2 kindergarten, 4 first grade, 4 second grade and 4 third grade teachers from Years 3-5. Therefore, the total number of teachers in all three conditions is estimated to be 840 (14 x 60 schools). These teachers will be placed in their respective condition for the life of the project for either 3 or 4 years, and therefore, the total number of classrooms to be taught by these teachers over the life of this grant is 50 per school. Accounting for all students in the classrooms, there will be a total of 75,000 students to be impacted by this project (50 classes x 25 students/class x 60 schools). Further, at grade 3, the TAKS, the standardized Texas reading assessment, will be administered to all the students (including typical practice control condition); there will be 14 teachers/classes per school, with 25 students per classroom and we estimate that over the life of the project 21,000 (14 x 25 x 60) third grade students will take TAKS to determine students' passing rate and school/district accountability. Sixty principals will also be impacted by the ECS scale up model. During Year 1, TOEC will be provided to 100

teachers, in Years 2-5, another 400 teachers will be added with 100 per year. Therefore the numbers will be the same with each of the previous years multiplying the effect with more students in their classrooms, for example, it is estimated that over five years 12,000 students will be impacted by the first cohort of 100 teachers (100 x 25 x 5). The total number of individuals impacted over the five years will be 500 teachers in 1,500 classrooms and 37,500 students. With ECS and TOEC, we will reach a total number of **1,340** teachers, 4,500 classrooms, and **112,500** ELL students over the life of this project.

E.2.CAPACITY FOR SCALING We have 38 varied school districts with over 280 campuses represented at this point in time with an initial invitation in targeted districts in East Texas alone. We tested the capacity with this initial number. We will continue to build our list for ample stratification we believe without limitations. Additionally, there are, as indicated in the first paragraph of the grant, ample school districts in each category. We have ample resources to conduct the intervention with an office at a school site in Houston near the airport for ease of access to any of our consultants. Additionally, the personnel are in place and have agreed to work with us in scaling this project. The capacity in terms of materials is developed, strong, and appropriate. Additionally, we have already garnered support from private businesses and will have total support prior to initiating this grant.

E.3. FEASIBILITY OF REPLICATION The model of replication of ELLA will be able to be replicated with a total program package finalized by the end of scale up. Principals and teachers will know what to do and how to implement such a program that increases academic achievement among ELLs and facilitates their teachers in becoming highly effective in the classroom teaching ELLs. The nuances for rural schools will be noted and how to implement it there will be well articulated. The CS will continue and all materials will be available either via

online at the Language Diversity Network at TAMU, or commercially. It is the intent that all materials for the ELLA model are easily accessible for teachers and principals. The qualitative data will provide us additional information on implementation ease. The TOEC will be able to be replicated via its online venue at TAMU.

E.4. ESTIMATE OF THE COST OF THE PROPOSED PROJECT The cost of the proposed project is standard to the goals and objectives intented to reach. The total number of individuals impacted over the five years will be 1340 teachers, 270 principals in 4,500 classrooms and 112,500 at-risk English language Learners. 112,500/5 = 22,500 students per year, Total budget assigned included Indirect cost ***Y1:*** 7,942296/22500= $352.9 per student without including Training teachers and principals. ***Y2:*** Total budget assigned included Indirect cost y2 : 7,714241/22500= 342.86 without including Training teachers and principals. ***Y3***. Total budget assigned included Indirect cost y3 : 7.423,826/22500= $329.95 per student without including training teachers and principals. ***Y4.*** Total budget assigned included Indirect cost y4 : 7,522,942/22500= $334.35 per student. ***Y5.*** Total budget assigned included Indirect cost y5 : 6,823,165/22500= $303.25 without including Training teachers and principals. ***TOTAL***. average for the five year life: 37426471/112,500= $332.67 without including Training teachers and principals.

E.5. DISSEMINATION PLAN The dissemination of the work from ELLA will be coordinated by Kathleen Leos. Policy issues will be addressed within the scalable model and placed in the hands of the media, unions, school boards, teacher and administrator organizations, state agencies, and federal policymakers beginning the first year of the project and continuing throughout. Additionally, no less than 20 papers will be produced for professional journals, an average of 2 annually. Presentations will be made at national and state conferences annually

promoting the project. The project will be prominent in the websites of the three universities. All districts in the state will receive emails related to the ECS/TOEC on a semester basis.

F. SUSTAINABILITY

F.1. RESOURCES FOR SUSTAINABILITY We will be able to operate this project beyond the scope of the time limit due to the fact that the materials will be in place for the models with easy access by school personnel. Additionally, the funders, the ones that we currently have with us, will continue support of such efforts with school districts across the state and nation. The TEA is supportive of the components, particularly of the TOEC which they continue to support with funding as evidenced by another $500,000 contract upcoming to TAMU. Additional resources to support the project are being garnered and that will be a factor in who we obtain as final additional partners.

F.2. CONTINUATION OF THE ELLA MODEL BEYOND THE GRANT PERIOD

The Advisory Board, made up of Claude Goldenberg (confirmed), Robb Clouse (Solutions Tree-unconfirmed), Robert Marzano (unconfirmed), two marketing experts (to be named), will work with the team to develop a sustainable plan for modeling ECS/TOEC beyond the grant period. This Advisory Board will meet once a year and in between on call via SKYPE. With the resources and braintrust of the Advisory Board, the model will be able to be sustained over time and as evidenced in the scale up project with lessons learned in implementation. Dissemination of the results and the model is also a component part of sustainability; our dissemination coordinator will also be an ad hoc member on this board. A plan will be in place year one with refinements made throughout the project, revisited by the Advisory Board and Research Team.

G. QUALITY OF THE MANAGEMENT PLAN AND PERSONNEL

G.1. THE ADEQUACY OF THE MANAGEMENT PLAN The following management plan/timeline in Table 4 clearly details adequacy to achieve the objectives of ECS/TOEC project, as well as the time frame for each activity and each objective, and the person responsible for each. The PIs will meet virtually biweekly with a management chart developed and checked off will monitor the implementation of the components of the grant and the quality of intervention.

Table 4. *Management plan ECS/TOEC*

Phases	**Management Plan for Project Implementation and Deliverables** **Key Project Staff Responsible (PIs, Curriculum Coordinator-CC, Data Coordinator-DC, School Coordinators—SCs, Independent Evaluators-IE)**	**Responsible Person**	**Yr 1**	**Yr 2**	**Yr 3**	**Yr 4**	**Yr 5**
I.	• Meeting with TAMU Research Foundation to review all subcontracts and establish budget procedures • Select Advisory Board	PI-R. Lara-Alecio	X				
	• Random selection of 60 schools with ELLs and assignment to 3 coaching conditions; establish qualitative design fully; review quant design • Hire graduate research assistants at TAMU, SHSU, and SMU • Hire DC, CC, and SC and other personnel • Order materials for upcoming years	External Evaluators Project	X X	X	X	X	

		Directors/PIs					
	• DC, CC and SC trained in the interventions and in coaching and mentoring techniques	PIs	X				
II.	• Pre-testing with occur at the beginning of each year for incoming students only with established measures on English oral and literacy skills in both treatment (conditions 1&2) and control groups • Train SCs in BOP	DC, SCs		X	X	X	X
	• Post-testing will occur at the end of each year for all students	DC, SCs		X	X	X	X
	• Classroom observation to be conducted periodically from the beginning and continuously over time	SCs	X	X	X	X	X
	• Meetings with advisory board	PIs	X	X	X	X	X
	• Dates/schedule developed for data collection	External/Internal Evaluators;data managers; collaboration with PIs	X	X	X	X	X
	• Develop webinars/trainings	Directors/PIs/ Faculty/Consultants	X	X	X	X	X
	• Advertise/recruit TOEC	TOEC	X	X	X	X	X

		Coordinators					
	Annual and final report	PIs & Research Team	X	X	X	X	X
III.	• Evaluation of the impact of project, data analysis • Final report written and submitted to Districts and USDOE	External/internal evaluators PIs, Evaluators, & Research Team					X

G.2. QUALIFICATIONS OF KEY PROJECT PERSONNEL *Dr. Rafael Lara-Alecio*, PI and PD, is a Professor of Educational Psychology and Director of the bilingual/ESL Programs within the College of Education and Human Development at Texas A&M University. He has served as PI of multiple U.S. DOE funded projects, including Field Initiated Research, an IES longitudinal research grant (approximately $7,000,000) focusing on the academic improvement of second language learners and has conducted several program evaluations, and a National Science Foundation research grant targeting English language learners' academic vocabulary and science achievement in middle school. He has managed multimillion dollar budgets. His primary expertise is bilingual/ESL education, bilingual/ESL assessment and evaluation, and curriculum development and implementation for ELL students. He is bilingual/biliterate in both English and Spanish. In addition, Dr. Lara-Alecio is an experienced elementary and secondary school teacher. His career has focused on improving quality education for second language learners and their families. He is the author and/or co-author of over 60 publications including refereed papers, book chapters, books, technical reports, and textbooks for ELL children grades PK-3. He will

devote 50% effort for 9 months. *Dr. Beverly J. Irby*, Co-PI for curriculum coordination and principals training, is a Professor and Chair, Department of Educational Leadership and Counseling, Sam Houston State University. Dr. Irby, bilingual in English and Spanish, has served as PI or Co-PI of multiple research projects related to the academic improvement of ELLs, including US DOE Field Initiated Research, IES and NSF founded projects working with Dr. Lara-Alecio. She served in the public schools for 15 years as teacher and administrator and 19 years at university level. In addition to having a strong background in psychometrics, supervision, and administration, she is the author and/or co-author of numerous refereed articles, chapters, books, and curricular materials for Spanish-speaking children including an article in *Science and Children* and *The Science Teacher*. She developed the science components of the *DLM Early Childhood* Program for SRA McGraw-Hill. She teaches research at the masters and doctoral level to educational leaders and her two most recent books are research books for educational leaders. She will devote 50% time per year. *Dr. Fuhui Tong*, Co-PI, is an Assistant Professor of Educational Psychology in the Bilingual/ESL Programs within the College of Education and Human Development at Texas A&M University. She has been engaged as key personnel on multiple U.S. DOE funded projects, including Field Initiated Research and an IES longitudinal research; she is also the Co-PI for the NSF research grant working with Dr. Lara-Alecio. Dr. Tong has conducted several program evaluations on federal funded projects and her primary expertise is bilingual/ESL assessment and evaluation, second language acquisition, and longitudinal data analyses and structural equation modeling. Dr. Tong has a bachelor degree of science with 5 years ESL teaching experience. She has been committed to working closely with rural and urban school districts in Texas serving a high percentage of culturally and linguistically diverse students. She will devote 50% effort for 9 months. *Dr. Patricia G. Mathes*, Co-PI for

coaching solution., is the Director of the Institute for Evidence-Based Education, Texas Instruments Chair of Reading, and Professor of Teaching and Learning. Dr. Mathes is also a former special education resource room teacher. She received her Ph.D. in 1992 from Peabody College of Vanderbilt University in Education and Human Development with an emphasis in Learning Disabilities and Reading. She has served on the faculties of Pediatrics at the University of Texas –Houston Medical School, the College of Education at Florida State University, and Peabody College for Teachers at Vanderbilt University. Since 1991 she has been conducting large-scale classroom based reading intervention research with funding from the U.S. Department of Education Institute of Educational Sciences, the National Institute of Child Health and Human Development, the National Science Foundation, as well as foundations and state agencies. Dr. Mathes brings to our team a long history of developing and empirically testing the efficacy of widely respected interventions designed to prevent reading failure. She is also a primary author of the ISIP assessment tool that is being utilized in the current research. She has actively disseminated this work in numerous articles, chapters, and books, and made intervention materials available to schools. *Dr. Genevieve Brown*, Co-PI for principal training, is Dean of the College of Education, SHSU. She has credibility in the field of education throughout the state having served as a public school administrator and having connections with all areas of the state via her administrative organizational board service at the state and national levels over the years. Her expertise in administrative leadership is grounded in major research in the field and development of a 21st century leadership theory. She has had the honor of being a Cocking Lecturer at NCPEA and has been named an AERA's Willystine Goodsell Awardee. She has worked closely with Dr. Fairman who developed the OHI which will be used to assess the organizational health and growth over time. As a published scholar in the field, she will oversee

the principal component, along with Dr. Irby, of the grant in terms of training development. Her time will be 10%.

G.3. THE QUALIFICATIONS OF THE INDEPENDENT EVALUATORS

Dr. David J. Francis, independent external evaluator, is the Hugh Roy and Lillie Cranz Cullen Distinguished Professor of Quantitative Methods and Chairman of the Department of Psychology at the University of Houston, where he also serves as Director of the Texas Institute for Measurement, Evaluation, and Statistics and Co-Director of the Texas Learning and Computation Center. He is a Fellow of Division 5 (Measurement, Evaluation, and Statistics) of the American Psychological Association and is the immediate past Chairman of the Executive Board of the Council of Graduate Departments of Psychology. He is also a member of the Independent Review Panel for the National Assessment of Title I and the National Research Council's (NRC) Board on Testing and Assessment. Dr. Francis is a frequent advisor to the Department of Education on statistical issues, assessment and accountability, and English Language Learners. He was a recipient of the 2006 Albert J. Harris Award from the International Reading Association, and has received the University of Houston's Teaching Excellence Award, the Excellence in Research and Scholarship Award at the Professor level, and in 2008 received the Esther Farfel Award, which recognizes career accomplishments in research, teaching, and service, and is the highest award given to faculty members at the University of Houston. Dr. Francis' research has been funded by numerous federal, state, and local agencies, including the National Institute of Child Health and Human Development and the Institute of Education Sciences (IES).. His areas of quantitative interest include modeling of individual growth, multi-level and mixture modeling, structural equation modeling, item response theory, and exploratory data analysis. *Dr. Oi-man Kwok*, independent internal evaluator, is an Assistant Professor of

Educational Psychology at Texas A&M University and currently serves as the co-PI for two federally funded projects: a five-year research grant funded by NICHD to examine the longitudinal impact of grade retention on at-risk children, and a four-year research grant funded by Institute of Education Sciences to examine both short-term and long-term effects of the Early Reading Intervention (ERI) program on kindergarten children at risk of reading difficulty. His research projects have included the application of Structural Equation Modeling (SEM) and Multi-Level Modeling (MLM) techniques and examination of measurement invariance in different ethnic groups. He has also co-authored several published articles and chapters on longitudinal design, measurement and analysis issue. Kwok's work has appeared in peer-reviewed journals, including *Journal of Consulting and Clinical Psychology, Journal of Clinical Child and Adolescent Psychology, Journal of Educational Psychology, Journal of School Psychology*, *Multivariate Behavioral Research, Psychological Methods,* and *Structural Equation Modeling. Dr. Tony Onwuegbuzie*, Internal Evaluator for Qualitative Research, is a Professor of Research at SHSU. He is a world-renowned scholar in mixed methodology. He has over 500 presentations on quantitative and/or qualitative research methods, has been invited keynote/workshop over 60 times, and has 5 books. He has been journal editor of AERA's Educational Researcher and has published over 200 refereed journal papers, along with over 100 other refereed publications. He is one of *the most cited* authorities in mixed methods and qualitative research. He has served as consultant of PI on numerous grants.

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