

# Critical Education

Volume 4 Number 4

April 15, 2013

ISSN 1920-4125

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## *The Relationship of Teacher Use of Critical Sociocultural Practices with Student Achievement*

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Citation: Teemant, A., & Hausman, C. S. (2013). The relationship of teacher use of critical sociocultural practices with student achievement. *Critical Education*, 4(4). Retrieved from <http://ojs.library.ubc.ca/index.php/criticaled/article/view/182434>

### **Abstract**

*This exploratory study examined whether teacher use of critical sociocultural practices improved student performance on a criterion-referenced English/Language Arts exam or the LAS Links assessments of English language proficiency for English Language Learners. Fifteen urban elementary teachers participated in a year of professional development, which used an instructional coaching model to increase teacher use of critical sociocultural practices. Using a new continuum called Critical Stance, observers measured the degree of fidelity teachers exhibited in using critical practices. Teachers' Critical Stance post-intervention and growth scores were significantly and positively correlated with increased student performance on the English/Language Arts exam as well as on five LAS Links assessments. Both native and non-native English speakers benefited from increased teacher use of Critical Stance. Teacher use of Critical Stance was also a stronger predictor of ELLs' gains in English proficiency than teacher use of higher order thinking.*



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It is estimated that by 2050 newcomers and their descendants will account for 82% of the population growth in the United States, representing almost 20% of the U. S. population (Passel & Cohn, 2008). The impact of these changing demographics on the American education system is imposing. Fix and Passel (2003) report that 10.5 million children of newcomers accounted for 19% of all students in K–12 public education in 2000, and it is estimated that by 2015, children of newcomers will make up 30% of the total school population (Fix & Passel, 2003). Such changes in student demographics are likely to escalate well into the twenty-first century.

Preparing teachers to educate diverse learners effectively is recognized as a pressing concern in the United States (Bartolomé, 2007; Hollins & Guzman, 2005) and internationally (Bernhard, Lefebvre, Chud & Lange, 1997; Cobbold, 2010; The Sutton Trust, 2010). Nevertheless, professional development models and research directly targeting teachers of diverse learners has been largely ignored (e.g., Knight & Wiseman, 2005; Wei, Darling-Hammond, & Adamson, 2010). Recent longitudinal descriptive (Teemant, Wink, & Tyra, 2011) and quasi-experimental (Teemant, 2011) studies have advanced use of an instructional coaching model for teachers of English Language Learners (ELLs) based on the Standards for Effective Pedagogy (Five Standards) (Tharp, Estrada, Dalton, & Yamauchi, 2000). The Five Standards represent research-based sociocultural principles of learning for teachers to use in designing learning activities. The Five Standards include: (a) *Joint Productive Activity*—a teacher and small group of students producing a shared product together; (b) *Language and Literacy Development*—employing sustained opportunities to read, write, or speak with assistance; (c) *Contextualization*—activating students’ knowledge and skills from home, school, and community to learn new content; (d) *Challenging Activities*—defining expectations, and then providing assistance and feedback to students; and (e) *Instructional Conversation*—engaging a small group of students in a sustained, student-dominated, goal-directed academic conversation that questions rationales and assists learning. (See Appendix A.)

Although Teemant (2011) and Teemant et al. (2011) demonstrate positive, statistically significant growth in teacher use of the Five Standards, they also found that coached teachers “consistently underestimate the importance of contextualizing school learning in the lives and communities of their students” (p. 3). In essence, teachers did not go far enough to provide their diverse learners access to the school curriculum. To overcome this challenge, Teemant, Leland, and Berghoff (2012) turned to critical sociocultural theory (Lewis, Enciso, & Moje, 2007) to improve teachers’ understanding of how to use students’ lives as curriculum. They developed and validated a new or sixth Standard for Effective Pedagogy, adding to Tharp et al.’s (2000) Five Standards. The sixth standard is called *Critical Stance* and makes teacher use of critical perspectives incremental, intentional, observable, and actionable in teaching practice.

Using teacher-friendly accessible language, Teemant et al. (2012) defined Critical Stance along a continuum of observable practice for instructional coaching (Appendix B). At the lowest level of implementation, teachers use the standard school curriculum, with no intentional effort to incorporate variety in terms of multiple perspectives, experiences, modalities, resources, cultures, or languages. At the highest level of implementation, Critical Stance asks teachers to consciously engage learners in (a) interrogating conventional wisdom and practices, (b) reflecting upon ramifications, (c) and seeking actively to transform inequities within their scope of influence (Appendix B).

Teemant et al. (2012) established inter-rater reliability and validated this Critical Stance continuum against the Five Standards using the previously validated Standard Performance

Continuum (SPC) (Doherty, Hilberg, Epaloose, Tharp, 2002; Hilberg, Doherty, Epaloose, & Tharp, 2004). After the validation process, Critical Stance became part of the Six Standards Instructional Model (Appendix A). Appendix B contains the *Standards Performance Continuum Plus* (i.e., the SPC Plus), which serves both as growth targets for instructional coaching and a measure of teacher use of the Six Standards.

Using a quasi-experimental design, Teemant et al. (2012) documented that instructionally coached teachers made statistically greater use of practices defining Critical Stance than a control group of teachers, as measured by the SPC Plus. They argued that Critical Stance is an important critical sociocultural principle of learning that improves upon the Five Standards by explicitly seeking to empower students through democratic and civic engagement to address society's inequities.

While significantly increased use of Critical Stance by teachers speaks to the efficacy of instructional coaching, Guskey (2000) argues that the gold standard of efficacy for all professional development is evidence of improved student learning. Critical research is typically and understandably conducted from qualitative perspectives given the recognized complexity of studying identity, agency, and power from socially, culturally, historically, politically, and educationally situated perspectives (Kincheloe, 2007; Kincheloe, McLaren, & Steinberg, 2011; Lewis, Enciso, & Moje, 2007). Nevertheless, this paper sets out to explore quantitatively the value of Critical Stance in promoting gains in student achievement, especially among ELLs.

In sum, the purpose of this exploratory study is to begin a conversation about the value of quantitatively linking teacher use of critical practices to student achievement. This study contributes to understanding if, and to what degree, teacher use of Critical Stance—as measured on the SPC Plus—improves student achievement. As Sleeter (2008) has argued, we need to understand how to prepare White teachers to “teach *better* and *more equitably* than the average White teacher does currently” (p. 561) in order to stem the perpetuation of underachievement among diverse learners. Demands for greater accountability for teacher quality and student learning require linking professional development to measures of achievement. This study contributes to identifying if teacher use of Critical Stance improves student achievement.

## Review of Literature

In this section, relevant literature provides the theoretical underpinnings of the paper and defines the new Critical Stance continuum used in instructional coaching, which is the focus of this exploratory study of student achievement. The research questions guiding this study end the section.

### *Theoretical Foundations*

There is a plethora of research describing the ongoing underachievement of culturally, linguistically, and economically diverse students (Calderón, Slavin, & Sánchez, 2011; Morrell & Noguera, 2011; Rodriguez, 2012; U.S. Department of Education, 2009). An equal amount of literature laments the inadequacy of teacher preparation for diverse learners, especially in urban contexts (Cobbold, 2010; Hollins & Guzman, 2005; Sleeter, 2008; Weiner, 1993). Compounding these two challenges is the fact that professional development specifically targeting teachers of diverse learners remains an overlooked area of research and practice (Calderón, Slavin, & Sánchez, 2011; Knight and Wiseman, 2005; Wei, Darling-Hammond, & Adamson, 2010; Willis,

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2009). This is of great concern since, as Guskey (2000) argued, “Improvements in student learning have never been observed in the absence of professional development” (p. 208).

The potential content of professional development for diversity is rich. Multicultural education, English as a second language, special education, teacher education, and critical studies each address ameliorating educational inequities albeit from different but complementary perspectives. There is general consensus among the various fields about what teachers need to know and be able to do in order to “construct culturally responsive and learner adaptive pedagogy, curriculum, and assessment” (Banks et al., 2005, p. 234).

Sociocultural theory (Vygotsky, 1978) and critical theory (Sleeter & Bernal, 2004) provide the theoretical foundations for best practices for teachers of diverse learners. Sociocultural theory advances the education of historically marginalized students by recognizing how social, cultural, and historical conditions impact students’ opportunities to learn (Rogoff, 1990; Tharp & Gallimore, 1988; Wertsch, 1985). Critical theory and research interrogates education by being unapologetically political in exploring economic, racial, linguistic, and institutional barriers to equity (Kincheloe, McLaren, & Steinberg, 2011; Sleeter & Bernal, 2004). Lewis, Encisco, and Moje (2007) articulated that when these two theoretical perspectives are taken together—that is, as critical sociocultural theory—issues of identity, power relations, and personal agency can be addressed in the sociocultural and historical context of schooling.

Several reasons could explain why professional development focused on critical sociocultural perspectives has been neglected for the most underprepared teachers and marginalized students. For example, despite its theoretical importance (Leistyna, 2009; McLaren & Kincheloe, 2007), critical pedagogy has had very limited impact on schooling. Weiner (2007) has stated that critical pedagogy’s dense academic jargon denies teachers access to its content. For Kincheloe (2007), the future of critical pedagogy depends on the degree to which its proponents “develop diverse languages to address divergent audiences” (p. 10).

Sleeter and Bernal (2004) suggest another obstacle to widespread use of critical perspectives is that “the great majority of classroom teachers and school administrators are White and bring a worldview that tacitly condones existing race and class relations” (p. 240). Juárez and Hayes (2010) further argue that “Whiteness serves as a hidden referent” (p. 233) in teacher education programs undermining educational equity. Even if a university teacher education program explicitly and systematically attends to pluralistic, democratic, and critical perspectives, their teacher candidates are often confronted by assimilationist ideologies and practices in the schools (Villegas, 2008). Regardless of the source of challenge, each of these obstacles provide the rationale for renewed efforts to identify, design, and, rigorously evaluate professional development strategies that work to support teachers and improve student achievement in high-need schools.

#### *The Five Standards Instructional Coaching Model*

Teemant (2011) and Teemant et al. (2011) document one such effort to develop and evaluate a professional development model for teachers of diverse students based on the work of Tharp et al. (2000). Tharp et al. have delineated a model of classroom instruction based on the combined use of small group activity centers (teacher-directed and independent centers) and use of the Five Standards to shape interaction. Building on the tenets of sociocultural theory (Vygotsky, 1978), the Five Standards require social interaction to make the co-construction of knowledge possible in what is called the zone of proximal development (ZPD). A student’s ZPD becomes the

site for teachers—or any more knowledgeable other—to provide assistance to students in learning. Modeling, questioning, and feedback are some types of assistance (Gallimore & Tharp, 1990). Learning is achieved by progress through the ZPD from being regulated or assisted by others to being self-regulated until finally new learning is internalized and automated (Tharp & Gallimore, 1988). As Moll (1990) explained, what a person “can perform collaboratively or with assistance today they can perform independently and competently tomorrow” (p. 3).

Individual standards and combinations of the Five Standards have been linked to improved student achievement in a variety of experimental, quasi-experimental, and longitudinal studies (e.g., Doherty & Hilberg, 2007; Doherty, Hilberg, Pinal, & Tharp, 2003; Estrada, 2004; Estrada, 2005; Estrada & Imhoff, 1999; Saunders & Goldenberg, 1999; Tharp, 1982). Most recently, a quasi-experimental study in the Midwest (Teemant, 2011) and a longitudinal study in California’s Central Valley (Teemant et al., 2011) have investigated the efficacy of instructional coaching with the Five Standards as a professional development strategy for mainstream teachers of English Language Learners. These studies have relied upon the Standards Performance Continuum (Doherty et al., 2002) as the measure of teacher fidelity to the Five Standards instructional model.

Instructional coaching is considered a highly effective professional development strategy (Cornett & Knight, 2009; Joyce & Showers, 1995; Sailors & Shanklin, 2010). It provides teachers instructional support in the classroom, on an ongoing, collaborative, and extended basis, with a focus on content and student learning, which are characteristics of high quality professional development (Desimone, 2009; Garret, Porter, Desimone, Birman, & Yoon, 2001; Wei et al., 2010). Cornett and Knight (2009) reported that coaching research has demonstrated improvement in teachers’ attitudes, practices, feelings of efficacy, and student learning; however, more rigorous research is needed to determine what content, models, and coaching targets are most effective with which populations of teachers and students (Cornett & Knight, 2009; Knight & Wiseman, 2005; Neuman & Wright, 2010; Vanderburg & Stephens, 2010).

Teemant et al. (2011) and Teemant (2011) have proposed the Five Standards as the sociocultural content, process, and performance targets of instructional coaching. The Five Standards themselves, as principles of learning, operationalize both the coach-teacher and teacher-child learning relationships. Learning is made possible through rich language and literacy use, goal-directed conversation, collaboration, feedback that improves performance, and purposeful activation of previous knowledge and experience in the learning of new content. In coaching and in the classroom, the highest level of fidelity to the model is achievement when at least three of the five standards are part of every small group interaction.

Teemant et al. (2011) demonstrated positive teacher change in use of each of the Five Standards as documented by classroom observations and self-report data. Teachers who were initially low users of the Five Standards closed the gap with initially high users by the end of seven coaching cycles. Teemant (2011) demonstrated that teachers sustained their increased use of the Five Standards one year after coaching. Unpublished results by Teemant and Hausman (2012) also document statistically significant growth in teachers use of higher order thinking skills, as measured by activity ratings using Bloom’s (1967) taxonomy: Know, comprehend, apply, analyze, synthesize, and evaluate.

Despite the existent proof of positive impact on teacher learning, these studies also demonstrated the need for further improvement. For example, teachers tended to situate their students weakly in collaborative learning as retrievers and replicators of content rather than thoughtful producers of new content. Teachers also did not consistently integrate students’ real

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community lives and experiences into learning the school curriculum. These shortcomings in implementation made the need to explicitly incorporate critical perspectives into the Five Standards model transparent.

### *Critical Stance*

Teemant et al. (2012) defined, achieved inter-rater reliability, and validated Critical Stance as a sixth standard, adding a critical sociocultural principle of learning (e.g., Freire, 1994; Vygotsky, 1978) to Tharp et al.'s (2000) five sociocultural principles. They built the new continuum upon work by Lewison, Flint, and Van Sluys (2002), who identified four pedagogical dimensions to taking a critical perspective: (a) disrupting the commonplace, (b) interrogating multiple viewpoints, (c) focusing on sociopolitical issues, and (d) taking action and promoting social justice.

Formally, Teemant et al. (2012) designed Critical Stance to be a transformative principle of learning requiring knowledge production and dialogic inquiry. Along the Critical Stance continuum (Appendix B), observable teacher practices define movement toward use of increasingly critical practices. At the lowest level of implementation, use of Critical Stance is not observed; that is, teachers use the standard school curriculum. At the emerging level of implementation, teachers intentionally incorporate some form of variety in terms of multiple perspectives, experiences, modalities, resources, cultures, or languages. At the developing level, teachers continue to incorporate variety and intentionally position students to engage in extended activities that produce new knowledge. When Critical Stance is implemented at the highest or enacting level, teachers consciously engage learners in (a) interrogating conventional wisdom and practices, (b) reflecting upon ramifications, (c) and seeking actively to transform inequities within their scope of influence.

In a quasi-experimental and correlational design, Teemant et al. (2012) documented statically significantly teacher growth in use of Critical Stance from pre- ( $M = .95$ ;  $SD = .42$ ) to post-intervention ( $M = 2.07$ ;  $SD = 1.04$ ) as a result of instructional coaching. This growth in use of Critical Stance ( $M = 1.19$ ;  $SD = 1.12$ ), however, was less growth compared to the other Five Standards: Joint Productive Activity,  $M = 1.80$ ,  $SD = 1.06$ ; Language and Literacy Development,  $M = 1.96$ ,  $SD = .77$ ; Contextualization,  $M = 2.10$ ,  $SD = 1.20$ ; Challenging Activities,  $M = 1.78$ ,  $SD = 1.29$ ; and Instructional Conversation,  $M = 2.75$ ,  $SD = 1.13$ . As Leistyna (2009) suggested, creating “dialogical spaces where all the lived experiences and worldviews can be heard” (p. 52) proved to be challenging for teachers conceptually as well as practically given the reality of pacing guides and benchmark testing.

In sum, this exploratory study is informed by relevant literature from sociocultural (Vygotsky, 1978; Moll, 1990) and critical perspectives (Lewis, Encisco, & Moje, 2007; McLaren & Kincheloe, 2007), notions of effective professional development (Borko, 2004; Garret, Porter, Desimone, Birman, & Yoon, 2001; Wei et al., 2010), and diversity teacher preparation (e.g., Cochran-Smith, Davis, & Fries, 2004; Sleeter, 2008; Villegas & Davis, 2008). While previous studies (Teemant, 2011; Teemant et al., 2011, Teemant et al., 2012) provide important “existent proof” (Borko, 2004, p. 5) of the efficacy of instructional coaching, the current study explores whether a particular professional development strategy impacts student achievement.

### *Research questions*

Empirically, this study explores whether teacher use of Critical Stance, as a measure of critical pedagogy, improves diverse students' achievement on standardized English/language arts tests and English Language Learners' English proficiency. Findings contribute to understanding the value of target-based instructional coaching in use of Critical Stance for teachers of diverse learners.

The research questions guiding this study are as follows:

RQ1. Is teacher use of Critical Stance significantly correlated with students' English/Language Arts achievement, using post-intervention and pre- to post-intervention growth scores?

RQ2. For students' designated as Limited English Proficient, is teacher use of Critical Stance significantly correlated with students' English/Language Arts achievement, using post-intervention and pre- to post-intervention growth scores?

RQ3. Is teacher use of Critical Stance significantly correlated with English Language Learners' English proficiency, as measured by listening, speaking, writing, comprehension, and overall LAS Links assessment scores?

RQ4. What are the relationships among increased teacher use of Critical Stance and higher order thinking with English Language Learners' Overall LAS Links performance?

### **Method**

This correlational study used teachers' post-intervention and pre- to post-intervention gain scores to quantitatively explore relationships between use of Critical Stance and measures of student achievement. First, the relationship between Critical Stance and the English/Language Arts portion of the Indiana Statewide Testing for Educational Progress—Plus (ISTEP+) was explored (RQ1), with special attention to English Language Learners (RQ2). Second, the relationship between Critical Stance and several domains of the LAS Links English language proficiency assessments were explored (RQ3). Finally, regression analysis was used to assess the relationship of Critical Stance and higher order thinking with performance on the overall LAS Links test (RQ4). The context, participants, instruments, instructional coaching intervention, and analyses are described below.

### *Context and Participants*

This study of student achievement, supported by U.S. Department of Education funding, used student data collected in 2008-2009 as part of a larger two-year study of instructional coaching (Teemant, 2011). Following an orientation on expectations, benefits, funded activities, and informed consent, the entire school staff voted to participate (90% agreement) whether they personally planned to participate in the professional development or not. Participation in the professional development was voluntary. Participating teachers were paid \$2,000. Thirty-six teachers (15 control; 21 experimental) in the urban elementary school participated, with 21 being instructionally coached in use of the Six Standards; that is, the Five Standards plus Critical Stance.

During the 2008-2009 intervention year, teachers were on average 45 years old, with 16.5 years of experience, and had an average class size of 13.3 students. The school had 18 regular

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classrooms and 40 teachers. Teachers were predominately White (88%) and female (88%). Among the 422 students, 75% were Hispanic and 16% African American, with small populations of White, Asian, and multiracial students. Ninety-five percent of students were on free/reduced lunch, and 35% were Limited English Proficient (LEP) students.

For this correlational study, teachers were included in the database if they had both pre- and post-intervention Critical Stance scores. In total, 15 of the 36 teachers (14 female; 1 Latina; 12 coached) were included. The 194 students (89 female; 105 male) of these 15 teachers represented five grade levels (K = 24; 1<sup>st</sup> = 58; 2<sup>nd</sup> = 50; 3<sup>rd</sup> = 27; 5<sup>th</sup> = 10; 6<sup>th</sup> = 25). Ninety-seven percent of these students were on free/reduced lunch, and 99% were Spanish speaking, with 1% Vietnamese. For the ISTEP and post-intervention Critical Stance analysis, 190 students were included. Only 106 students (44 native & 62 non-native English speakers) had the required data for the ISTEP-Critical Stance growth analysis and the regression analysis with Critical Stance and higher order thinking on I-STEP scores.

### *Instruments*

This study relied on ratings of teacher use of Critical Stance continuum and student data from the ISTEP English/Language Arts exam and the LAS Links assessments. A brief description of these instruments follows.

**1. Critical Stance continuum.** The classroom implementation of Critical Stance was measured using the Teemant et al. (2012) continuum, which was patterned after Doherty's et al. (2002) Standards Performance Continuum or SPC. When Critical Stance is added to the SPC, the classroom observation tool is called the *SPC Plus* (Appendix B). The underlying dimension of Critical Stance is civic engagement in a democracy. Five levels of implementation are defined for Critical Stance by observable teacher actions that move toward use of increasingly critical sociocultural practices. On the "not observed" end of the Critical Stance continuum, instruction is focused on appropriate content-area standards for the grade level. The teacher relies on the textbook and worksheets devoid of any effort to connect to students' lives or experiences inside or outside the classroom. At the "emerging" level, the teacher would include some type of variety in instruction, such as using multiple modalities or types of texts, inviting multiple perspectives, or valuing and respecting students' cultural, linguistic, or social identities. At the "developing" level, the teacher uses variety, and also invites multiple perspectives or requires students to generate new knowledge or make original contributions. At the highest level of Critical Stance (i.e., "enacting" level), the teacher consciously engages learners in (a) interrogating conventional wisdom and practices; (b) reflecting upon ramifications; and (c) actively seeking to transform inequities within their scope of influence. Therefore, Critical Stance requires collaborative inquiry, reflection, higher order thinking, and connecting school curriculum to real world problems or injustices that matter to students. To achieve the "integrating" level for Critical Stance, the teacher would have to be using at least three of the Six Standards in a single learning activity. For example, instruction would also have to be collaborative, dialogic, challenging, and language and literacy rich.

The five levels of the continuum are as follows: 0= not observed; 1= emerging (some element present); 2= developing (partial enactment); 3= enacting (fully enacted); and 4= integrating, which is achieved when the instructional model is fully enacted (i.e., the 3 x 3 rule within a single activity). Four points are available per standard. For this study, Critical Stance scores from the post-intervention observation and a growth score generated by subtracting a teacher's pre-intervention score from his/her post-intervention score are used.

Doherty et al. (2002) described high inter-rater reliability and concurrent validity with similar instruments for the SPC, while Teemant et al. (2012) articulated the development process for the Critical Stance continuum. For this study, three raters established SPC-Plus inter-rater reliability. Classroom raters had six years of experience using the SPC instrument as instructional coaches and external evaluators. Intraclass Correlation Coefficients (Shrout & Fleiss, 1979) were calculated using a two-way (Rater x Standard) mixed effects ANOVA model (McGraw & Wong, 1996), where raters were identified as the random effect and the standards were considered fixed effects. An average measure of reliability was used because each standard was rated eight times by three raters. Intraclass Correlation Coefficients for each standard are considered high and appropriate for high stakes decisions (Walsh & Betz, 1990): Joint Productivity = 1.00; Language/Literacy = .84; Contextualization = .98; Challenging Activities = .97; and Instructional Conversation = .96; Critical Stance = .98.

**2. Measure of English/language arts achievement.** In Spring 2009, elementary students in grades 3 to 6 were administered a new version of the ISTEP+. This paper-and-pencil criterion-referenced test had both multiple-choice and open-ended applied skills questions (Indiana Department of Education, 2011). For this study, the English/Language Arts exam results were used as a measure of student achievement based on associated Indiana Academic Standards, which were adopted in 2000. The cooperating district provided the researchers with student level ISTEP+ data for each participating teacher.

**3. Measure of English proficiency.** The Language Assessment System (LAS) Links is a standardized K-12 assessment of English language proficiency used as an accountability measure by districts. The reliability and validity of LAS Links has been established and reported by CTB McGraw-Hill ([www.ctb.com](http://www.ctb.com)). The assessment provides information on non-native speaker's proficiency in four domains of English development: reading, writing, and listening. A comprehension score was derived from combining listening and reading scores. The individual scores combine into an overall score. The overall score provides a level of proficiency for a student, where one represents the lowest level and five represents fluency. Results can be reported as raw or scale scores, which account for the level of question difficulty from year to year.

LAS Links is administered to newcomers for program placement, and then yearly in January or February as a yearly measure of English development. The tests are either administered individually (speaking for all grade levels) or in groups depending on grade level and domain. For the speaking domain, students identify, describe, or tell a story based on the use of objects in pictures. For the listening domain, students listen to and then answer questions based on directions, expository passages, or narrative stories. For reading, students read and answer questions on three reading passages, as well as questions focused on word analysis and usage. For writing, students write sentences, an essay, and response to multiple-choice questions about writing conventions.

### *Instructional Coaching Intervention*

Teacher growth in use of Critical Stance was documented as part of a year-long instructional coaching intervention during 2008-09. The growth targets for coaching were the Five Standards plus Critical Stance or the Six Standards. Evaluators and the instructional coach used the SPC Plus (Appendix B). Coached teachers participated in a two-phase professional development intervention. They first participated in a five-day, 30-hour summer workshop on the Six Standards Instructional Model. Readings, video clips, the SPC-Plus, and dialogic small group learning activities were used to teach the Six Standards instructional model. Each of the Six

Standards received roughly equal attention. Teachers were provided specific help in learning how to phase in use of multiple, simultaneous, and diversified activity centers over a 12-week period. Teachers learned how to establish norms, expectations, and procedures for successful group work (Hilberg, Chang, & Epaloose, 2003). Then teachers were individually coached seven times across the year during their language arts block. The instructional coach was an expert in the Six Standards with over six years of coaching experience. Although this study focuses on teacher use of Critical Stance and student achievement, more information about the instructional coaching protocol and the significant, patterned, and sustained teacher growth outcomes can be found in Teemant (2011), Teemant et al. (2011), and Teemant et al. (2012).

### *Data collection and analysis*

Three baseline observations of teachers during language arts instruction (30 minutes in length) were conducted prior to the professional development (spring 2008;  $M = 85.42$  minutes;  $SD = 7.85$ ). Two 30-minute post-intervention observations were conducted (spring 2009;  $M = 55.86$ ;  $SD = 6.8$ ). Change scores were generated for teachers who participated in both pre- and post-intervention observation rounds.

Two types of analyses were conducted: Pearson Product Moment Correlation (PPMc) coefficients ( $p \leq .05$  level, 2-tailed test) and multiple regression analysis. Specifically, four correlations were calculated to explore relationships between teacher use of Critical Stance (CS) and student achievement: (a) post-intervention CS score with ISTEP+; (b) growth CS score with ISTEP+ scores; (c) post-intervention CS score with English Language Learners' LAS Links assessments (i.e., listening, speaking, writing, comprehension, and overall); (d) growth CS score with English Language Learners' LAS Links assessments. The final relationship was calculated by regressing teacher growth in CS and teacher use of higher order thinking on Overall LAS Links performance. Correlation effect sizes ( $r^2$ ) less than .10 are defined as small, less than .30 as medium, and .50 or above as large (Cohen, 1988). The null hypothesis is assumed for each analysis since no previous research was found exploring relationships between a quantitative measure of Critical Stance and student achievement.

## **Results**

In this section, the results are presented by research question. Findings exploring the relationship between Critical Stance and students' ISTEP English/Language Arts achievement (RQ 1 & RQ2) are followed by LAS Links assessments of English language Proficiency (RQ3). Using a simple linear regression, relationships of teacher use of Critical Stance and higher order thinking with students' English proficiency attainment (RQ4) are presented. The discussion and implications of findings are presented in the final section of this paper.

### *English/Language Arts Achievement*

To explore the relationship between teacher use of Critical Stance and students' 2009 I-STEP+ English/Language Arts achievement (RQ1), Pearson product-moment correlation (PPMc) coefficients were calculated using post-intervention and pre- to post-intervention growth scores. Using post-intervention teacher use of Critical Stance and English/Language Arts achievement, a medium and positive correlation between the two variables was found ( $r = .331$ ,  $n = 190$ ,  $p < .001$ , two-tailed.) This finding suggests that teachers' post-intervention use of Critical Stance was significantly correlated with increases in students' language arts achievement.

A PPMc coefficient was computed to assess the relationship between teachers' Critical Stance growth score (post-intervention minus pre-intervention score) and students' I-STEP+ English/Language Arts achievement. The correlation was positive and medium in size between the two variables ( $r = .368$ ,  $n = 106$ ,  $p < .001$ , two-tailed.) Teachers' growth in use of Critical Stance was correlated with increases in student ISTEP+ achievement.

PPMc coefficients were run for teachers' growth in use of Critical Stance with ISTEP+ English/Language Arts for native English speakers ( $n = 44$ ) and students designated as Limited English Proficient ( $n = 62$ ) (RQ2). Correlations demonstrate that teacher growth in use of Critical Stance was significantly related with ISTEP+ English/Language Arts scores for both native ( $r = .496$ ,  $p = .001$ ) and non-native speakers ( $r = .246$ ,  $p = .054$ ). For non-native speakers of English, the correlation was significant with a small effect size, while the effect size was approximately double for the native speakers. Overall, while use of Critical Stance was important for all learners, Critical Stance had a stronger influence on native English speakers' ISTEP performance.

### *English Language Proficiency*

To explore the relationship between teacher use of Critical Stance (post-intervention and growth score) and non-native speakers' English language proficiency (RQ3), PPMc coefficients were computed with 2009 LAS Links assessments. First, the PPMc coefficient between the post-intervention Critical Stance use and students' overall LAS Links scale score showed a significant and positive correlation ( $r = .292$ ,  $n = 287$ ,  $p < .001$ , two-tailed.) This medium effect size indicates that teachers' post-intervention use of Critical Stance was correlated with students' overall English proficiency.

Table 1 presents the relevant correlation coefficients between teachers' growth in use of Critical Stance and English Language Learners' LAS Link assessments, as measured by scores in

Table 1  
Pearson Product Moment Correlations for Teacher Growth in Use of Critical Stance and 2009 LAS Links Assessments

LAS Links Domains	Growth Score $r$	$r^2$
Listening	0.413*	0.169
Speaking	0.407*	0.166
Writing	0.408*	0.166
Comprehension	0.505*	0.302
Overall	0.489*	0.239

N = 194      \*  $p < 0.001$  level (two-tailed)

listening, speaking, writing, comprehension, and overall (RQ3). Three patterns are noteworthy. First, teacher growth in use of Critical Stance is significantly and positively correlated with each of the five assessments. Second, the strongest relationships—with large effect sizes—are between teacher growth in use of Critical Stance and the comprehension and overall proficiency scores.

Third, medium effect sizes were also found with listening, speaking, and writing assessments. In sum, teacher growth in use of Critical Stance was significantly correlated with higher levels of ELLs' overall proficiency, as well as proficiency in listening, speaking, writing, and comprehension.

### *Critical Stance, Higher Order Thinking, and Student Performance*

Given the significant and positive growth in teacher use of Critical Stance (Teemant, Leland, & Berghoff, 2012) and higher order thinking (Teemant & Hausman, 2012), this study also explored the relationships of these variables with ELLs' overall LAS Links (RQ4). Table 1 already present the correlation ( $r = .489$ ,  $n = 194$ ,  $p < .001$ , two-tailed) and large effect size ( $r^2 = .24$ ) between growth in use of Critical Stance and Overall LAS Links. Higher order thinking was also significantly correlated to Overall LAS Links ( $r = .326$ ,  $n = 155$ ,  $p < .001$ , two-tailed). Therefore separate bivariate correlations indicated ELLs' English proficiency increased as teachers' increased their use of both Critical Stance and higher order thinking in the design of learning activities.

Table 2 presents findings from an analysis in which Critical Stance and higher order thinking as independent variables were regressed on student performance on the Overall LAS Links assessment. The regression analysis was statistically significant,  $F(2, 152) = 32.90$ ,  $p < .001$ . Collectively, the predictors explained 29% of the variance in Overall LAS Links scores. However, only the regression coefficient for Critical Stance was statistically significant with a large standardized  $b = .51$  ( $t(154) = 6.54$ ,  $p < .001$ .) The regression equation for Critical Stance and Overall LAS Links performance is:  $\hat{Y} = 460.15 + 24.13X$ . For every one-unit increase in teacher use of Critical Stance, there was a corresponding increase in Overall LAS Links performance of 24 points. The regression coefficient for higher order thinking and LAS Links performance was not statistically significant or different from zero:  $t(154) = 1.01$ ,  $p = .314$ . Therefore, teacher growth in use of Critical Stance was the stronger predictor of ELLs' English proficiency.

Table 2  
Regression Analysis of Growth in Use of Critical Stance and Higher Order Thinking on the 2009 Overall LAS Links Assessment

Independent Variable	<i>B</i>	$\beta$	<i>t</i>
Critical Stance Growth	24.13	0.51	6.54*
Higher Order Thinking Growth	2.96	0.08	1.01
$R^2 = 0.29$ , $F(2, 152) = 32.90^*$			

\* $p < .001$

## **Discussion and implications**

While critical sociocultural perspectives are viewed as key components in the preparation of teachers for culturally, linguistically, and economically diverse students (Bartolomé, 2007; McLaren & Kincheloe, 2007), the evidence for such practices has largely been qualitative in nature. This study explored whether a quantitative relationship could be established between increased in-service teacher use of Critical Stance as a result of instructional coaching with

measures of student English/Language Arts achievement and English proficiency. The relative importance of increased use of Critical Stance in comparison to higher order thinking was also explored. A brief summary of findings follows, with discussion and implications for theory, practice, and further research.

### *Summary of Findings*

Four quantitative findings stand out related to teacher use of critical perspectives in teaching. First, teacher use of Critical Stance as an instructional practice is positively correlated with a medium effect size with student achievement in English/Language Arts, using both post-intervention and growth scores (RQ1). Second, this positive relationship between teacher use of Critical Stance and student English/Language Arts achievement is significant for both native (large effect) and non-native English speakers (medium effect) (RQ2). Third, teachers' use of Critical Stance, as measured by post-intervention and growth scores, is positively and significantly correlated to ELLs' performance on LAS Links (RQ3). Correlations with English proficiency in listening, speaking, and writing have medium effect sizes while comprehension and overall proficiency have large effect sizes. Finally, while both higher order thinking and Critical Stance are statistically correlated to Overall LAS Links English Proficiency, this study demonstrates that Critical Stance is the more powerful predictor of ELLs' English proficiency (RQ4) when both predictors are included in the same model. In sum, these findings provide evidence of predictive validity for use of Critical Stance on measures of student achievement (Pedhazur & Schmelkin, 1991). Therefore, Critical Stance can be considered a value-added component of professional development for teachers in highly impacted schools.

### *Implications*

Several implications emerge from this exploratory study for lessening the theory-practice divide between critical educators and most teachers, especially in an effort to develop “diverse languages to address divergent audiences” (Kincheloe, 2007 p. 10). First, as Huerta-Charles (2007) and Weiner (2007) suggest, one unnecessary obstacle to use of critical pedagogy is the field's dense linguistic load. The development and successful use of this new Critical Stance continuum for instructional coaching demonstrates that critical sociocultural practices can indeed be made accessible to teachers.

Another obstacle to use of critical perspectives rests in the conceptual denseness of critical pedagogy. As Huerta-Charles (2007) found, university “students still felt lost after taking several classes based on the foundational principles of this perspective” (p. 251). This study demonstrated that it is possible to use small, manageable, and observable teacher actions as the starting place for becoming critical educators. Less, in this case, actually became more in terms of teacher classroom practice. Teachers' very moderate growth in use of Critical Stance paid off with significant dividends in terms of student achievement.

Of course, moving from practice to theory or theory to practice is not a new challenge in teacher preparation. Written case studies (Shulman, 1992) and video ethnographies of practice (Harris, Pinnegar, & Teemant, 2005) are examples of how teacher education has tried to capture the complexity of teaching. Unlike university-based coursework, instructional coaching, by definition, is authentically complex, bringing the shared experience of classroom practice into play as praxis (Freire, 1994). The positive instructional coaching and achievement outcomes for this study suggest that critical educators, especially those housed at the university, need to imagine new professional spaces, schedules, and courses that allow moving into the school house—or at

least partnering better with those who live there—as valued university practice. As Gallimore and Tharp (1990) argued, “Without performance assistance for themselves, there is no chance teachers will ever learn to assist the performance of their students. Without assistance, there is no chance teachers will ever abandon the viewpoint common in American classrooms” (p. 201).

Another university-public school challenge for critical educators to bridge is the difference in perception of what counts as evidence for policy and best practice decisions. Today, the national, state, and local dialogue about quality schooling centers obsessively on test-based accountability (Ravitch, 2010). As Kincheloe, McLaren, and Steinberg (2011) argue, such traditional views of research are largely seen as responsible for the “reproduction of systems of class, race, and gender oppression” (p. 164). Nevertheless, linking critical pedagogy to quantitative gains in student achievement meets the demand for test-based accountability while allowing democratic and transformative teaching practices to be enacted. Such quantitative findings should be seen as one tool among many that are used to advocate for use of more critical sociocultural teaching practices.

In this study, all of the students—native and non-native speakers of English—were culturally, linguistically, or economically diverse. The positive learning outcomes with Critical Stance stand as evidence against the narrow and prescriptive use of scripted and decontextualized textbook curricula with diverse learners. More innovation is needed to improve teacher fidelity to Critical Stance. Nevertheless, these findings support the value of instructional coaching as a professional development strategy (Cornett & Knight, 2009; Joyce & Showers, 1995; Knight, 2009; Sailors & Shanklin, 2010). They also provide predictive evidence supporting use of critical sociocultural practices with diverse learners.

Future research should improve upon this correlational study using more rigorous methods. For example, positive student achievement outcomes should be established with experimental designs. Furthermore, mixed methods designs (Teddle & Tashakkori, 2011) should be explored adding qualitative richness to quantitative coaching and achievement outcomes. Kincheloe, McLaren, and Steinberg (2011) argue, “a new level of educational rigor and quality” (p. 165) can be achieved by engaging teacher-scholars in gathering, analyzing, and interpreting data from critical perspectives.

## Conclusion

Improving teacher accountability for diverse students’ learning outcomes requires linking a professional development approach to measures of achievement. As Hollins and Guzman observed, this has largely been “unchartered territory in the field of research on teacher education. (2005, p. 512)” This exploratory study contributes predictive evidence linking teacher use of critical practices to increased student achievement. Instructional coaching to Critical Stance warrants further investigation as a professional development strategy for teachers in light of the positive achievement benefits accrued to both native and non-native speakers of English.

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ISSN 1920-4175

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