An Evaluation of the Instructional Conversation Model for English Language Learners and Other Students in Elementary Grades Three and Five

Executive Summary

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Funders

This study was funded by the Institute of Education Sciences (IES). IES is an independent and non-partisan agency the mission of which is both to provide scientific evidence on which to ground education practice and policy and to share this information in formats that are useful and accessible to educators, parents, policymakers, researchers, and the public. Among the other goals of its work, IES funds development and rigorous testing of new approaches for improving education outcomes for all students. It supports development of practical solutions for education from the earliest design stages through pilot studies and rigorous testing at scale. With IES support, researchers are learning what works for improving instruction, student behavior, teacher learning, and school and system organization.

The broader dissemination of this publication, along with the project website, is in part supported by the Goizueta Foundation, a private, general-purpose, grant making philanthropy that works alongside forward-thinking organizations in metro Atlanta to inspire motivated young people to learn and succeed. The Foundation’s primary focus is on expanded learning initiatives in the 10-county metropolitan Atlanta region, especially K-12 education. Since its inception, the Foundation has partnered with more than 85 organizations through 555 grants, totaling more than $386 million.
Overview

This report describes the implementation and effects of the Instructional Conversation (IC) pedagogy on third and fifth grade students conducted by the Center for Latino Achievement and Success in Education at the University of Georgia from 2011-2015. Developed in the late 20th century by the Center for Research on Excellence and Diversity in Education, the IC is the linchpin of a complete classroom pedagogy designed to provide responsive and recursive (or student-centered) assistance in contrast to traditional direct instructional (or teacher-centered) models. The goals of the project were to test whether the IC model can improve English language students’ and their peers’ literacy as measured by standardized reading and other subject area tests. To achieve these goals, we tested a model of professional development in which teachers received a week-long initial training in the IC pedagogy, followed by a year of practice and ongoing coaching including a renewal training early in the second, or experimental, year. After a full year of practice, trained teachers were deemed able to fully implement the pedagogy on a regular basis across a variety of subject areas. Additional support was provided as needed through booster sessions and coaching during the experimental year.

In this randomized controlled trial, funded by an IES grant under the title: Improving the Teaching and Learning of English Language Learners (ELLs): The Instructional Conversation Model, the impact of ICs was studied in 61 schools in 16 districts, with 121 teachers fully completing the study. Teachers were recruited to join one of three cohorts, with each cohort studied for a period of two years – one training and practice year and one experimental year. By the end of the project, achievement test data had been collected for a total of 2351 students, in addition to teacher logs, videos of IC lessons, and other assessments of fidelity of implementation and counterfactual evidence.

Key Findings

Overall, the findings from the study indicate that the IC pedagogy improved reading standardized test scores for ELLs in the treatment group 14% above ELLs in the
control group. For non-ELLs, the effect was 10% greater for reading. It may be that as a result of this general impact on reading ability, other content areas were also positively affected. Future research is needed to test this hypothesis.

- Treatment significantly impacted the entire sample (i.e., ELL and non-ELL student test scores aggregated) for both Reading and Social Studies outcome measures ($p<0.05$). For these two outcome measures, the IC intervention produced an approximate 9% and 8% increase in test scores, respectively.
- When models were disaggregated by ELL status, improved performance on Reading, Science, Social Studies, and Math outcomes was only found among ELLs. For ELLs, the intervention resulted in an approximately 15% increase in scores for Science ($p<0.01$) and Social Studies ($p<0.01$) and an approximate 14% increase in Reading and Math ($p<0.01$).

Taken together, the findings suggest that ICs can have a positive effect on elementary school students’ reading achievement, and that this effect, in turn, may positively influence achievement in other subject areas. Results discussed here are relevant to educational policy for ELL students and scaling strategies for teaching English language and literacy to elementary school students. Our conclusions should be contrasted with other commonly used approaches for countering learning and teaching gaps in public education.
Preface

Far too many children of immigrants are disadvantaged in their schooling and are below grade level academically. Even well-intentioned teachers may not have had the training or developed the skills necessary to help these students succeed at the challenges of mastering a second language when the language spoken in school is different from the language they are most used to hearing and using at home. Many school districts, too, do not have the resources to accommodate the needs of these students, who get behind in their studies and then remain behind due to lack of sufficient supports both in the classroom and within the school system more generally. Pedagogies focused on combining rigorous language and cognitive development can help reduce the gaps in student learning, not just for ELLs but potentially for all students.

Developed in the late 20th century by the Center for Research on Excellence and Diversity in Education (CREDE), the Instructional Conversation (IC) is the lynchpin of a complete classroom pedagogy that has been practiced in many US schools, including schools in Louisville, Memphis, Modesto, Indianapolis, rural Georgia, and the Hawaiian Islands. The IC and its supporting principles are endorsed by many policy makers, including the National Association for Bilingual Education, the International Reading Association, and the National Education Association. The IC provides responsive and recursive assistance for students in contrast to traditional to direct instructional (or teacher-centered) models. To date, however, there has been very little evidence on the effectiveness of the IC for elementary school students. The pedagogy was formally tested for its efficacy in helping students to succeed better academically on two occasions prior to the study discussed in this report. These small but important studies tested early versions of the IC (Saunders, 1999; Saunders & Goldenberg, 1999a), and both found positive results of the IC on student achievement. However, the quasi-experimental nature of the first study limits the inferences one can make from it, and the limited delivery of the intervention and nature of the outcome measures used renders the second study problematic as well. Both studies were reviewed by the What Works Clearinghouse and met evidence standards with reservations.
From 2011-2015, the Center for Latino Achievement and Success in Education (CLASE) at the University of Georgia implemented a full enactment of the IC model and tested its efficacy for improving the academic achievement of English language learners in a randomized controlled trial (RCT). This report describes the outcomes of that study, which spanned three consecutive cohorts of students and teachers representing Northeast Georgia school districts with significant ELL Latino populations. The findings of the UGA study show that the IC pedagogy has a positive effect on elementary school students’ reading and English language arts ability. This report describes the RCT’s success and offers lessons about implementing and further studying the effects of Instructional Conversations on elementary-aged students.

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Acknowledgements

This report is based on work supported by The Institute for Education Sciences (IES), the statistics, research, and evaluation arm of the U.S. Department of Education. The mission of IES is to provide scientific evidence on which to ground education practice and policy and to share this information in formats that are useful and accessible to educators, parents, policymakers, researchers, and the public. Among the other goals of its work, IES funds development and rigorous testing of new approaches for improving education outcomes for all students. It supports development of practical solutions for education from the earliest design stages through pilot studies and rigorous testing at scale. With IES support, researchers are learning what works for improving instruction, student behavior, teacher learning, and school and system organization.

The authors and principal investigators of this study owe special thanks to the districts, schools, coaches, and teachers whose participation in this study and made possible a rigorous test of a promising pedagogy. We are especially indebted to Roland Tharp, Stephanie Dalton, the NEA, Noni Reis, and Tasha Wyatt for their guidance, insights and commitment to learning and teaching in shaping the IC model we implemented and evaluated.

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The Authors
Executive Summary

We have yet to develop a public education system, including the preparation of educators and policy makers, in which the most vulnerable students can become proficient in academic language and reading. Although nationally over 20% of children are classified as living in poverty, African American and Latino students are in fact more than three to four times overrepresented at this level and lag over four times behind other groups in reaching proficient levels in reading (National Assessment of Educational Progress, 2015). Similar disparities in graduation rates, standardized test scores, and teaching and learning quality outcome measures remain unchanged. At the same time, the nation is experiencing a dramatic surge in the Latino population (U.S. Census Bureau, 2010; National Center on Immigrant Integration Policy, 2010) that exacerbates the challenge of assisting all low-income students in our schools. English Language Learners (ELLs) represent one in every ten students in the K-12 system (National Center for Education Statistics, 2014) with 77.2 percent as Spanish speakers, predominantly from Latin America. Mostly of Latino origin, ELLs today represent a significant portion of the United States’ school-age population that is often underserved (Bunch, 2013; Lucas, Villegas, & Freedson-Gonzalez, 2008). Many schools are not providing appropriate support or making adequate yearly progress with this population (Bohon, Macpherson, & Atiles, 2005; Portes, Gallego, & Salas, 2008; Bailey and Heritage, 2008). Unfortunately, most teachers remain underprepared in evidence-based teaching skills for ELLs; at the same time, they are subject to increased accountability (Reeves, 2006; Hallinger, Heck, & Murphy, 2014). Nationally, the current educational system still leaves the mostly low-income ELLs years behind the norm in most content areas despite well-meaning educational and language policies (Kena, Aud, Johnson, Wang, Zhang, Rathbun, Wilkinson- Flicker, & Kristapovich, 2014). Programs that actually address the gap in academic achievement for all groups are critically important for schools, districts, states, and the nation as a whole.

Capable yet economically disadvantaged students struggle most to develop academic language skills to grasp subject-area content and to develop the abilities required for school success (Foorman, Koon, Petscher, Mitchell, & Truckenmiller, 2015;
Honig, 2010). At present, there is evidence that the language of instruction may not be as critical as teacher quality (Cheung and Slavin, 2012) and that evidence-based methods and strategies for development of students’ reading ability may best facilitate ELLs performance at grade level (Foorman, Francis, Fletcher, Schatshneider & Mehta, 1998; Strickland, Snow, Griffin, Burns, & McNamara, 2002; Uccelli, Galloway, Barr, Meneses, & Dobbs, 2015). Researchers have focused on impacting reading and English language arts subject areas, as together they play a crucial role in mediating student comprehension in all content area standardized tests (Alfassi, 2004). To date, however, adequately designed randomized control trials to test specific teaching approaches for improving ELL student learning outcomes in elementary school are too few to give good reason for scale-ups. Nevertheless, policy changes are needed in order for this population of students to have access to fair educational opportunities.

This report attempts to fill an important knowledge gap, presenting results from a clustered randomized design study based on a promising pedagogical model that was recognized earlier by the What Works Clearinghouse (WWC) as meeting minimal scientific standards including those regarding random assignment and baseline equivalence. The WWC serves as a neutral arbiter of education research rigor using standards for randomized trials designed to limit confounding variables. As Gersten and associates (Gersten, Rolfhus, Clarke, Decker, Wilkins, & Dimino, 2015) note, such evidence-based studies are critical for determining whether larger scale implementations can generate positive effects on school achievement in real world settings. To date, most randomized control trials (Fuchs, Compton, Fuchs, Paulsen, Bryant, & Hamlett, 2005; Fuchs, Schumacher, Long, Namkung, Hamlett, Cirino, Jordan, Siegler, Gersten, & Changas, 2013) and/or reading-focused interventions (Pinell, 1989; Schwartz, 2005) aim to test the efficacy of models aimed at the general population in which ELLs may be of secondary interest. Of particular importance in this study is the question as to whether a specific pedagogy impacts ELL students as one of several target groups. We explore this question with elementary school students in an efficacy trial that includes both ELLs and non-ELLs, in the context of important meta-analytic studies suggesting potential positive strategies for this population (Adesope, Lavin, Thompson, & Ungerleider, 2010; Slavin & Cheung, 2005).
The American Southeast is one of the major areas of the country in which demographic trends indicate a surge in the Latino population, driven largely by immigration to work in regional factories in the 1990s and early 2000s (Mohl, 2003), and consequently a growing Latino birth rate is testing the mettle of 21st century schooling (Portes & Salas, 2015). During the 2014-15 school year, Georgia enrolled 1,883,387 students, with Latinos (primarily from Mexico, Central America and South America) comprising 261,206, or around 13.9% of the total student population. That percentage has been growing steadily, with 13.9% representing a 0.7% increase in Latino enrollment from the 2013-14 school year, which in turn had a 0.7% increase compared to the 2012-13 school year. Statewide, the Latino population increased over 300 percent between 1990 and 2004. Furthermore, 72% of Mexican youth and 70% of Central American youth in Georgia live below the federal poverty level (Hooker, Fix & McHugh, 2014). In some school systems in Georgia, particularly those serving low-income communities, Latino students comprise about half of the student body, and elementary schools with 70-90% Latino students are increasingly common.

This report presents implementation and findings of a study focused on a language-responsive teaching method proposed to build a solid foundation for school success, particularly with the growing population of English Language Learners in the state of Georgia. The Instructional Conversation (IC) is one of Five Standards for Effective Pedagogy that define a pedagogical system developed by the Center for Research on Excellence and Diversity in Education (CREDE) and is often regarded as its linchpin. The Five Standards are integrated in pedagogical system that provides responsive and recursive assistance for students in contrast to traditional to direct instructional (or teacher-centered) models. This approach originated in the research of Tharp & Gallimore (1988) to improve native Hawaiian children’s academic learning that was later extended to other diverse groups. Our report describes the first student results from a randomized efficacy trial of three consecutive cohorts of teachers and students in 16 school districts with large to moderate ELL Latino populations. The project’s practical significance lies in its potential for transforming teaching quality and raising the achievement level of a growing population of vulnerable students.
Key findings in this report include the following:

- When IC professional development is operationalized as defined in this study to promote meaningful and challenging conversation, student school learning can improve in reading and other areas.
- The impact on Reading test performance was strongest for ELLs, and non-ELL students in the experimental group also benefitted significantly.
- While both ELLs and non-ELL students gained significantly from the IC intervention, significantly improved performance on Science, Social Studies, and Math outcomes was only found among ELLs.

Background on the Instructional Conversation

The intervention called Instructional Conversation (IC) is a regularly-scheduled teacher-led event with three to seven students, lasting about twenty minutes, with a clear instructional goal. The teacher leads through topic control, and thus the event is instructional. But the ordinary courtesies and shared regulations characteristic of conversation apply. That is, students regulate their own speaking turns, everyone participates, and the teacher speaks no more than 50% in either time or turns. The IC allows for close monitoring by the teacher of students’ comprehension and language development, as well as for close assistance by the teacher at the points needed either by individual speakers or by the group. The IC’s capacity for this ongoing assessment and assistance is in marked contrast to whole-class “discussions,” events well known for teacher domination and participation by only the most able and verbal students (Cazden, 2001). By contrast with typical whole-class discussions, the IC is designed to give students the opportunity to dialogue with the instructor about content in an open and responsive forum. This gives students sufficient language input as well as ample time to practice with the language through real exercises and to connect the content information to their own lives. The IC offers the teacher sufficient time and space to model correct forms and to respond collaboratively, extensively, and intensively to the student, offering the corrective feedback theorists argue is necessary for the learner to “notice” the correct forms of language (Krashen, 1985; DeKeyser, 1998) and to develop implicit knowledge out of meaning-focused communication (Ellis, 1998). The topics of
ICs are taken from the curricula of academic disciplines: reading, science, mathematics, social studies, and English language arts.

The IC model is one of the Five Standards for Effective Pedagogy, derived from a thorough integration of studies focusing on successful educational programs for cultural and linguistic minorities (Tharp, et al, 2000).

The Five Standards for Effective Pedagogy are:

- **Standard I: Teachers and Students Producing Together (Joint Productive Activity).** Facilitate learning through collaborative and problem-based learning between teacher and students.
- **Standard II: Developing Language and Literacy across the Curriculum (Language and Literacy Development).** Develop competence in the language(s) of instruction (English) and of the academic disciplines (e.g.: science and mathematics) throughout the day.
- **Standard III: Making Meaning by Connecting School to Students’ Lives (Contextualization).** Embed curricular instruction in the interests, experiences, and skills of students’ families and communities.
- **Standard IV: Teaching Complex Thinking.** Consistently challenge students towards their next level of cognitive complexity.
- **Standard V: Teaching through Instructional Conversation.** Develop students’ cognitive and linguistic skills through facilitated conversation-based lessons.

The Standards reflect essential features for effective teaching and learning. Standards I and V describe teacher student interaction patterns. Standards II and IV are generic instructional outcome goals, and Standard III is a process standard for introduction of new content.

Research has examined teachers’ use of these Standards, both separately and in combination, with multi-methods including case studies of multiple classrooms, short-term randomized designs, quasi-experimentation in single classrooms, and longitudinal studies of entire schools. Most studies have shown positive relationships between
teachers’ use of the Five Standards and student achievement, including other favorable outcomes. These standards are associated with increased second language learning and positive affective development for ELLs (Estrada, 2004, 2005). Other studies have found the IC positively related to students’ acquisition of thematic understanding of literature (Saunders et al, 1997; Saunders, 1999; Saunders and Golderberg, 1999a).

Use of the Five Standards has been linked to factors critical to school performance such as motivation, self-perceptions, attitudes, and inclusion (Dalton and Youpa, 1998, Padron and Waxman, 1999, Estrada 2004, 2005). Active research and practice in Instructional Conversation are present in many US schools, including schools in Louisville, Memphis, Modesto, Indianapolis, rural Georgia, and the Hawaiian Islands. The IC and its supporting principles are endorsed by many policy makers, including the National Association for Bilingual Education, the International Reading Association, and the National Education Association.

**Studying the Instructional Conversation Pedagogy**

This randomized controlled trial involved three cohorts of 3rd and 5th grade teachers in 58 schools and 16 school districts in Northeast Georgia with moderate Latino/ELL density. The study hypothesized that once the critical components of the IC model were fully implemented by teachers, student reading achievement would significantly improve for both ELL and other students. The evaluation trial employed randomized block design wherein students were nested within classrooms/teachers, nested within schools. Teachers were randomly assigned to either the treatment or control condition. 3rd and 5th grade teachers were selected because the academic outcomes of interest from standardized tests given to Georgia students at the end of these two grades allow for developmental contrasts and avoided contamination. Following WWC standards, the outcome variables are student scores from the Georgia Criterion-Referenced Competency Tests (CRCT), tests given to both 3rd and 5th grade students across five content areas (English Language Arts (ELA), Reading, Math, Science, and Social Studies). In the efficacy year for the third and final cohort, the CRCT test was replaced with the Georgia Milestones exam, which combined Reading and ELA from the CRCT into a single subject area (ELA), along with Math, Science, and Social Studies. Experimental teachers in each cohort participated for two years: the first, a
practice year of professional development required to implement the IC model and the second, and subsequent, year the efficacy or trial year. The practice year allowed teachers to develop expertise in the IC with ongoing feedback and coaching. During the efficacy year, teachers implemented the model and researchers collected measurements of implementation fidelity and student test scores. Control teachers were also provided incentives to conduct ‘business-as-usual’ teaching and allow collection of videos and logs. 2011 served as the practice year for Cohort 1 with 2012 as the efficacy year; Cohort 2 participated in 2012 and 2013; and Cohort 3 in 2013-2014. A total of 263 teachers were randomly assigned to either treatment or control conditions in the five-year study. After attrition and withdrawals, a combined sample of 121 teachers completed the study. Although sample loss was 54%, actual attrition – sample loss related to outcomes – was quite low. According to the What Works Clearinghouse Procedures and Standards Handbook, Version 3.0, “a decision to change a school’s curriculum or to reassign teachers could lead to attrition that may or may not be related to the intervention being evaluated” and so may not create the potential for bias. In fact, only three of the 263 teachers recruited to the study withdrew for reasons having to do with the study itself. The remaining withdrawals reflected circumstances well beyond the parameters of the study, including pregnancies, household moves, transfers to other grades and schools, and transfers into administrative posts.

The intervention was predicted to improve ELLs’ development and success in school especially in reading. Its relationship to student achievement was also examined in the following areas:

- **Other content areas** (e.g. science and math)
- **English Language Proficiency**, especially as measured by comprehension, vocabulary, and other areas addressed in ELP tests.
- **Cognitive Development**, especially in concept-formation and overall cognitive non-verbal reasoning, and
- **Affective Development**, especially in students’ sense of belonging in school and self-esteem in academic and social domains.

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1 See chapter 1 of the complete Final Evaluation Report for details about attrition in this study.
The study proposed to measure the academic achievement through the reading achievement test that is part of the aforementioned Georgia state tests, as this sub-test is instrumental to and most highly associated with academic success and literacy in general. Apart from the main thrust of the study, we explored the nature of the interplay between self-concept, language development, and cognitive development. The study’s model of change posits that the IC intervention might impact, indirectly, all three areas in students’ development. Theoretically, that may, in turn, explain changes in students’ academic test performance. The model remains to be tested rigorously in the future, once significant intervention effects are established. In this study, we evaluated the intervention effects with both ELL and non-ELL students, but could only begin to explore the conceptual model. This is because of limitations in research design (i.e.: sample size and randomization at the student level).

ELLs are often taught using TESOL and similar practices that focus on basic language development goals and often fail to promote higher order learning. The IC intervention targets memory, strategy transfer, attention control, meta-cognition, and inference, all critical tools for improving academic performance through cognitively challenging practices. In particular, IC conversational teaching strategies may advance ELLs’ development through elements of teacher IC professional development such as modeling, classroom management, and small group instruction skills to increase student participation, comprehension and motivation. Using a cultural-historical framework (see Portes & Salas, 2011), this study hypothesized that small group interaction with frequent verbalization of ideas and focusing on metacognition and strategy transfer would improve students’ academic performance.

Our primary hypothesis was that there would be a significant improvement in academic reading achievement for ELLs in the experimental group by comparison with their peers in the control group. We expected that if this was so, experimental group ELLs’ performance in other content areas would also significantly improve over those in the comparison group. Secondly, we hypothesized that the IC intervention would also significantly benefit non-ELLs in their academic achievement in general. In other words, an overall positive effect was predicted for all experimental students over those
in the control group regarding the outcomes we examined. The specific research questions associated with these hypotheses are:

**RQ1:** Do ELLs in the intervention perform significantly above those in the control group in terms of higher levels of achievement, as measured by standardized tests?

**RQ2:** Do non-ELL students exposed to the intervention achieve at a statistically significantly higher level than those in the control group?

**Implementing the IC model in Third and Fifth Grade Classrooms**

Over the course of the study, experimental group teachers implemented small group instruction using the IC strategies regularly each week, with each IC lesson averaging roughly 20-30 minutes. Teachers were encouraged to implement the IC discussions in small groups across content areas and lesson types by integrating vocabulary, phonemic awareness, and reading comprehension with science, mathematics and social studies. As the IC is the linchpin of the pedagogical system, counterfactual evidence was collected and monitored through logs and video-taped observations in order to document differences in small group instruction. Our approach was unique in that video-recorded lessons for both experimental and control group teachers were assessed by researchers trained in scoring a rubric-based method with the intent of determining adherence to the core tenets of the IC and the other related components of the CREDE pedagogy. Although all teachers used whole group instruction, direct instruction, choral responding, and rote learning were minimized in the experimental classrooms and quality student talk was maximized.

Given the general hypothesis that academic outcomes of the students taught using the IC method depended on the consistent and successful implementation of the instructional conversation pedagogy, the project focused early on creating a strong, multi-faceted professional development program designed to offer teacher participants the necessary theoretical foundation in the cognitive, social and cultural aspects of second language learning alongside opportunities to apply and practice the strategies integral to effective ICs. One principal goal of this study’s professional development
program was to ensure that the participants had a clear understanding of the five fundamental standards of effective teaching for diverse students (see Tharp et al., 2000) and how best to integrate them in daily practice. The project developed and modeled tools and skills necessary to implement the culturally and linguistically responsive pedagogy in experimental classrooms.

   To ensure that teachers were given the support necessary to effectually implement the IC pedagogy, the research team designed the professional development model mindful of the need to: support educators’ construction of their own knowledge through the development of their conceptual understanding of theory; translate theory into practice by working on real-life topics and challenges; maintain regularly scheduled times for joint productive collaborative activities and role-play; keep training focused directly on the curriculum and programs teachers are teaching; and provide opportunities for ongoing support from knowledgeable colleagues and peers.

   Based on these criteria, the professional development program integrated components intentionally designed to: solicit, prior to training, teachers’ background knowledge and understanding of strategies for teaching ELs, and introduce foundational aspects of socio-cultural theory (Cole, 1996; Portes, 1996; Tharp & Gallimore, 1988; Vygotsky, 1978) regarding CREDE’s Five Standards of Effective Pedagogy. It provided authentic opportunities to apply the theory in practice and to plan lessons around specific Georgia state standards. Finally, it afforded regular and consistent in-class and in-service support from veteran teacher-coaches; and create face-to-face and online opportunities for peer interaction and lesson sharing.

**Consistency of IC Teacher Practices**

The investigators developed tools to ensure that the model being evaluated was being implemented well and consistently. Although a standard measure developed by CREDE is typically employed in training coaches and teachers to assess the implementation of each standard, a revision was made for ensuring fidelity of IC teaching for both counterfactual purposes and fidelity of implementation. Use of the revised fidelity of implementation instrument allowed the research team to operationalize teacher quality variation in using the IC method. It also allowed coaches
and the research team to track teachers’ progress and focus interventions on the areas that showed greatest need for support. The researchers developed a 20-point Instructional Conversation Index comprised of a checklist of the critical or essential elements of the Five Standards that should be present in an effective IC and included space for comments by the observer. This measure of fidelity was validated and used for the evaluation of video-taped lessons by an unbiased external evaluation team that was trained by the PI beforehand using practice videos to ensure reliability. Scores from this evaluation also provided counterfactual evidence regarding the degree to which teachers who had not undergone the IC training employed the techniques and strategies that are inherent in that model. The researchers hypothesized that few (if any) teachers in the control group would know how to consistently employ the five standards when compared with the experimental group. Video of small group instruction was collected, analyzed, and scored for monitoring fidelity of implementation as well as for making comparisons of how students were learning in each experimental group.

Both control and experimental teachers were asked to reflect on their pedagogy by responding to a series of bi-weekly, on-line questionnaires, or logs, which captured a record of teachers’ use of and beliefs about different strategies. The logs were reviewed by the researchers and used to modify and tailor the renewal trainings as well as to inform ongoing coach professional development. Along with feedback from the coaches and their scoring of the Index, all three sources of information about implementation and teacher quality were employed to assess the impact of professional development, how well fidelity of implementation was maintained in the experimental group, and to rule out contamination between the IC and control classrooms.

**How IC Teaching Impacted Students’ Academic Achievement**

Our study found that the training and professional development of teachers in the implementation of the IC model was sound and reliable, showing students were in fact taught differently as we expected. Most important, we found significant effects of the IC instructional model on student achievement, as predicted, using standardized statewide competency tests – the Georgia CRCT test (Cohorts 1 and 2) and the Georgia Milestones test (Cohort 3). We found a significant effect for the IC intervention in the entire sample
(i.e., ELL and non-ELL student test scores aggregated) for both Reading and Social Studies outcome measures (p<0.05). The intervention increased the two test scores 9% and 8% respectively for all students regardless of ELL status. The intervention’s primary goal, however, was to determine efficacy for the ELL group. The IC pedagogy significantly improved ELLs reading test performance, indicating approximately a 14% advantage over the control group (p<0.01). This intervention also helped non-ELLs showing a 10% edge over students taught in the business as usual classrooms in reading (p<0.05).

In terms of impact on other content areas, ELLs test performance on science, social studies, and math outcomes significantly improved as well. For ELLs only, the IC intervention resulted in an approximately 15% increase in test scores for science (p<0.01), social studies (p<0.01), and a 14% increase in scores for math (p<0.01). These significant differences between treatment and control ELLs were present even when controlling for grade, gender, and the interaction of these two variables with the IC treatment.

**Conclusion and Next Steps**

In sum, support for both the logic model and the study’s main hypotheses has been established. We found positive impacts of the IC intervention model on the academic outcomes of all students, especially in Reading and Social Studies. When student data was disaggregated according to ELL status, results indicated that the positive outcomes of the IC intervention were much more pronounced among ELL students when compared to non-ELL students. Future research is needed to determine exactly why the intervention produced these outcome differences given out theoretical framework. More specifically, research is needed to assess more extensively how the IC model impacts proximal learner characteristics, such as cognitive development, self-esteem, and language development, which may in turn account for variations in IC effects. Equally important may be the questions of how variations in teacher fidelity of implementation can account for differences in outcomes among student groups. Whether the effects on reading are the keystone to students performing better in other content areas appears as a reasonable question but also requires further research with improved designs and additional measures over time. How the IC pedagogy influences
learner outcomes has important implications for the continued improvement of education for all students and for new policies and practices for ELLs in particular.

The primary goal of this study was to provide reliable evidence of the effectiveness of a pedagogical intervention targeted at improving the academic outcomes of ELL and other students. Given that to date our study is the most comprehensive and most methodologically rigorous evaluation of the effectiveness of the IC pedagogy, it makes multiple contributions to our current knowledge of best pedagogical practices for ELL students and all students.
Methodologically, the randomized control trial design provided strong internal validity and allowed a causal interpretation of the impact of the IC intervention. Additionally, the randomization of teachers to experimental and control conditions allows for a greater generalizability of the results of the current study making it ready for replication and scale-up studies. In terms of knowledge development and our theories of how students learn best and can be taught most effectively, the theoretical and practical significance of these findings are considerable. Replications and potential for scaling cost-effective professional development and similar intervention studies are of vital importance. Given that our study provides evidence of a pedagogical intervention not only for ELL students but all students, many of whom live in poverty, we recommend urgent attention be given to the fields of teacher preparation and professional development in public schools.


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Cambridge, MA: Cambridge University Press.


About CLASE

The mission of the Center for Latino Achievement and Success in Education (CLASE) is to promote educational excellence and equity nationally through research and development addressing underserved groups, especially the growing Latino population in the New South. Funded by a generous grant from the Goizueta Foundation, a 2.9 million competitive grant from the Institute of Educational Sciences, and other sources, CLASE currently provides evidenced-based professional development for educators working in over 70 schools in 17 counties throughout Georgia; tutoring for hundreds of students placed at risk; mentoring and support for graduate students to prepare future bilingual leaders; and meaningful service learning opportunities for college students. CLASE’s scope includes organizing and participating in national conferences and federal/state initiatives bearing on immigration, dual-language models, and educational issues facing the children of immigrants.

The Center also provides research-based resources for educators and policy makers emphasizing strategies that reduce disparities in access to higher education through technology, academic mentoring, and language support from pre-kindergarten to college.

The Center's work is based on an interdisciplinary developmental framework that furthers higher level thinking in children and adults from all backgrounds. This framework supports the Center’s strategy to reduce teaching and learning gaps in the current educational system while also promoting positive transcultural identities and socio-linguistic competencies. CLASE's initiatives benefit not only post-first generation immigrants and their children but also those joining them in promoting future generations of well-educated and fair-minded citizens.

The Center is directed by Pedro R. Portes, The Goizueta Foundation Distinguished Chair in Latino Teacher Education, and Professor in Department of Counseling and Human Development Services at the University of Georgia College of Education.