

## ARIZONA ENGLISH LANGUAGE LEARNERS TASK FORCE

### Research Summary and Bibliography for Structured English Immersion Program Models

#### 1. *What is the current state of scientific research in the area of effective instruction for English learners?*

Gersten and Baker (2000) set out to synthesize the research on effective instruction for English learners and were only able to locate five controlled intervention studies over a 20-year period. Similar conclusions about the state of scientific research in this field were echoed by August & Hakuta (1997) in their report entitled *Improving Schooling for Language-Minority Students: A Research Agenda*. They concluded that little scientific research had been conducted with school-age English learners, and expressed their concern about how “politics have constrained the development of sound practice and research in this field (August & Hakuta, 1997, p. 148). Gersten and Baker (2000b) noted that much of the research they located was qualitative case studies that drew inferences that did not seem supported by the data. A recent review of U.S. research on ELLs conducted by Genesee, Lindholm-Leary, Saunders, & Christian (2004) found fewer than 50 studies that focused on English oral language outcomes and used sound methodology. They noted that only one study examined the effects of instruction on students’ English oral language proficiency. They conclude there is little U.S. research literature to guide the design and delivery of oral ELD instruction or to substantiate its effects.

In a similar vein, Gersten and Baker (2000a) surveyed elementary teachers and found considerable confusion and uncertainty about the focus and content of language development instruction.

#### 2. *What research supports the time-on-task principle?*

Time as a critical instructional variable is a consistent theme throughout the research on student achievement, regardless of whether the findings are from studies comparing effective and ineffective teachers in the United States or from studies comparing the effectiveness of instruction in basic skills across different countries. Time-on-task has long been recognized as an important contributor to academic success because learning is partly a function of the time spent engaged in a task so that individual differences in time-on-task contribute to individual differences in academic skills (Bloom, 1974; Carroll, 1963). Specific research in this area related to English learners and the learning of English is relatively thin. Tangential studies, however, that support the time-on-task to student achievement relationship are abundant. Borg (1980), in his summary of the research on the relationship between time and school learning, noted a consistent finding: “The amount of time that students are engaged in relevant reading and mathematics tasks is positively associated with academic achievement” (p. 59). Despite being somewhat difficult to operationalize, student engagement is recognized in the literature as an important link to student achievement and other learning outcomes (McGarity & Butts, 1984; Capie & Tobin, 1981; Fisher, Berliner, Filby, Marliave, Cahen & Dishaw, 1980). Karweit

(1983) reviewed time-on-task research over the last 50 years, noting that notwithstanding their methodological variances, these studies produce a positive association between time and learning. Many of the studies, she noted, find a statistically significant effect of engaged time on learning. In related studies of student engagement, researchers have examined academic learning time—a variable that combines time-on-task with student success rate—and its relationship to student achievement. A large-scale study of beginning teachers showed that the amount of time a student spends successfully performing relevant and appropriate tasks is positively related to basic skills achievement among elementary school children (Far West Laboratory, 1979).

### **3. *What empirical research supports the teaching of discrete English language skills in a particular order?***

Some researchers have posited a “natural” order of acquisition common to all English learners regardless of age, learning environment or prior languages learned (Dulay & Burt, 1973, 1974; Bailey, Madden, & Krashen, 1974). Brown (1973) presented empirical evidence of a similar order of acquisition of grammatical functors, setting in motion a series of studies which came to be known as the “morpheme order studies,” all of which attempted to test several possible determinants of the order of functor acquisition (Brown, 1973, p. 379). Bailey, Madden, & Krashen (1974) found that the grammatical learning orders for Spanish and non-Spanish speakers were correlated ( $r=.926$ ,  $p,<.005$ ), and that the order for the adults in the study was extremely similar to the child order found earlier by Dulay and Burt (1973). Larsen-Freeman (1976) attempted to determine a single explanation for the order of grammatical acquisition, and tentatively concluded that the major cause of the order was the frequency of the input to the learner. Larsen-Freeman and Long (1991, p.91) have emphasized that, of all the determinants of acquisition order, “only input frequency has much empirical support to date.” Goldschneider and DeKeyser (2005) conducted a meta-analysis that combined data from children and adults to determine how much of the total variance in ESL functor order can be accounted for by a combination of five factors: perceptual salience, semantic complexity, morphophonological regularity, syntactic category, and frequency. The researchers conclude that these five factors account for a large percentage of the variance in order of acquisition of grammatical structures, suggesting that “perceptual salience” is the ultimate predictor of the order of acquisition. Perceptual salience is a linguistics term, defined by the authors as the property of a structure that is perceptually distinct from other linguistic input. They suggest, then, that a primary task of teachers is to make the functors more salient in an attempt to bring them to the learner’s consciousness.

### **4. *What empirical research supports the need for allocating fixed periods of time to teaching certain elements of the English language?***

How teachers allocate time in classrooms has been the subject of extensive empirical research. In a comprehensive multi-year study of teaching practices, Fisher, et al (1980) found drastic differences in the amount of time teachers allocated to different skill areas, as did Rosenshine (1980). Berliner (1984), in a review of the research literature on teacher decisions and time allocations found wide variations among teachers for both content and time allocation decisions.

Empirical research on this issue for school-age English language learners is almost non-existent. However, a very recent study by Saunders, Foorman & Carlson (2006) analyzed instructional practices and time allocations for English skills teaching in classrooms that had an identified ELD block, and classrooms that did not have such a block of time. They found that English learners in classrooms that had a separate ELD block had greater percentages of instructional time devoted to oral language and literacy activities than ELL students in classrooms without a separate ELD block. ELL students in the separate-block configuration had modest but significantly higher English oral language and literacy scores on the Woodcock Language Proficiency Battery. Classroom literacy instruction in both types of classrooms was observed using an observation scheme developed by Foorman and Colleagues (Foorman, Goldenberg, Carlson, Saunders, & Pollard-Durodola, 2004; Foorman & Schatschneider, 2003) that featured the strict recording of teachers' time allocations to various activities during reading instruction. In their analysis of vocabulary instruction, they found that targeted vocabulary instruction (time allocated to this task) was 6.7% in classrooms with no ELD block and 2.6% in classrooms with an ELD block. The vast majority of instructional time spent on oral language development was comprised of discussion and listening-comprehension activities. In the no-ELD block classrooms, 70.3% of oral language activities involved discussion, and 22.8% involved listening comprehension (the remaining time was coded as non-instructional talk). In the classrooms with a dedicated ELD block, 77.4% of all oral language activities involved discussions, and 17.4% involved listening comprehension, for a total of 94.7%.

The authors emphasized two findings: first, teachers in the classrooms with an ELD block appeared to concentrate more available time on oral language and reading activities in English than teachers in no-ELD block classrooms. Second, the percentages of time devoted to English oral language and English literacy activities were slightly higher in ELD block classrooms than in the no-ELD block classrooms. They summarize by noting that 94% of oral language activities were comprised of discussion and listening comprehension, leaving little time for more abstract and academic oral language activities. Oral language instruction that focused on target vocabulary or language structure (semantics, syntax and phonology, according to the authors) and strategies was rarely observed, amounting to approximately 6% of oral language activities. Thus, teachers implementing a separate ELD block tended to be more efficient and focused in their use of time. At the student analysis level, those in classrooms with an ELD block had higher post-test English oral language composite scores, higher word identification scores, and a tendency toward higher letter-sound scores.

##### **5. *What empirical research supports the explicit teaching of discrete English language skills?***

Ellis (2002) provided evidence from a variety of sources on the role of frequency in second language learning. He argued from the data that the abstraction of regularities within a complex language system is frequency based. He notes that for simple structures, minimal exposure may be enough. But for more complex or obscure structures, frequency may largely determine whether the form is acquired or not, in conjunction with learner's aptitude and teachers' methodologies. Taraban (2004) found in an empirical study that learning of certain grammatical conventions was greatly facilitated either by providing explicit instruction or by drawing

learners' attention to the concept through the use of specific instructional approaches. Saunders, Foorman & Carlson (2006) conducted research on the use of certain instructional elements in a reading program for ELLs, including an enhanced role for discrete language skills teaching. Students participating in the experimental group achieved significantly higher than ELL students in the control group ( $ES = 1.08$ ). The intervention consisted of the use of instructional modifications consistent with Gersten and Geva (2003). The intervention students made gains in English reading comprehension from more than 1 standard deviation below the normative sample to within the normal range (standard score = 98) at posttest. This contrasts with students in the control group, whose standard scores at pre-test were also low (82) and who made relatively little gain in reading comprehension in English (standard score = 84). From their meta-analysis of studies conducted during the past 20 years, Norris and Ortega (2000) concluded that focused second language instruction is more effective than implicit types and that instructional effects are durable over time. In one of the studies, Spada and Lightbown (1993) found that teachers who integrated grammar lessons into their communicative teaching were more effective than teachers who ignored grammar and those who only addressed it in decontextualized grammar lessons. Fotos and Ellis (1991) conducted experiments that asked students to solve grammar problems in the target language. They concluded that learners who are made aware of certain target structures in language are more likely to notice them than students who were not made aware of the target structures. Robinson (1996) reported similar findings when he compared implicit, incidental, rule-search and instructed conditions for the development of complex second language rules.

#### 6. *What empirical research supports the explicit teaching of phonology to English learners?*

Several empirical studies have presented evidence that phonological awareness transfers from children's first language to their second (Bruck & Genessee, 1995; Cisero & Royer, 1995; Durgunoglu, Nagy, & Hancin-Bhatt, 1993; Geva & Siegel, 2000; Verhoeven, 1994). Chiappe, Siegel, and Gottardo (2002) found that kindergarten English language learners performed more poorly on measures of phonological awareness in English than native English speakers of the same age. Similar to other studies, Chiappe and Siegel (1999) found a clear link between phonological awareness and reading acquisition in Punjabi-speaking children learning to read in English. The importance of phonological processing in the acquisition of reading has been found to be important (Catts et al., 1999; Siegel, 1993). Gottardo et al (1996) linked deficits in phonological processing and sensitivity in children to the development of syntactic skills. Couper (2006) tried to determine the effect of instruction on specific English pronunciation aspects and to see if gains were retained over time and integrated into phonological competence. Students received direct instruction in two specific areas of phonology. He reported decreases in error rates from 19.9% to 5.5% for the experimental group in the immediate post-test, compared to a control group of similar students who did not receive the explicit phonology instruction. The author noted gains were reported even for students who were identified to have fossilized phonological interlanguage characteristics. Perlmutter (1989) found improved intelligibility in older ESL learners during six months of language instruction that emphasized pronunciation. Derwing, Munro, and Wiebe (1997) similarly showed that students' long-term pronunciation improved significantly in a 12-week program emphasizing global production skills. They found

that speakers who had instruction emphasizing certain prosodic features such as rhythm, intonation and stress could transfer their learning to spontaneous language production tasks. Their study also showed that certain instructional approaches in pronunciation enhanced students' oral production in three areas—comprehensibility, accent and fluency.

**7. *What empirical research supports the explicit teaching of English oral language skills?***

There is some evidence that measures of oral proficiency that index academic language use correlate positively with other measures of academic achievement (Genesee et al., 2004). At least one longitudinal study has suggested that preschool and kindergarten instruction that introduces elements of academic language use predicts subsequent literacy success in middle school (Dickinson & Sprague, 2001). Long-term studies of reading development by Catts, Hogan, and Adlof (2005) showed that, although listening comprehension predicts a relatively small amount of unique variance in reading scores for second graders, by fourth grade it uniquely predicts 21% of the variance, and by eighth grade, it uniquely predicts 36%. They noted similar findings for ELLs as reported by Hoover and Gough (1990). Munro and Derwing (1994) also conducted studies showing that accent can be detected by native speakers and that deliberate work to improve a speaking accent produces learner improvement.

**8. *What empirical research supports the explicit teaching of English verb tenses?***

Klein & Dittmar (1979) found that even the most basic morphology is often lacking from the speech of untutored immigrants. Krashen & Pon (1975) and Tarone (1985) showed a similar lack of morphological control even for classroom learners who could not monitor themselves effectively. Even after many years of exposure to the morphology of a second language, learners' morphological representations are shaky (DeKeyser, 2000; Johnson & Newport, 1989). The problem of L2 users' failure to demonstrate control over morphology structures is so fundamental it has spawned entire bodies of literature.

**9. *What empirical research supports the explicit teaching of English word order rules (syntax)?***

Mokhtari and Thompson (2006) analyzed fifth grade students' levels of syntactic awareness in relation to their reading fluency and reading comprehension. They found that the students' levels of syntactic awareness were significantly related to their reading fluency ( $r=.625$ ) and reading comprehension performance ( $r=.816$ ), indicating that lower levels of syntactic awareness corresponded to poor reading fluency and poor comprehension among this group of students. Other researchers have demonstrated the importance of syntax knowledge in the acquisition of reading by English learners (Catts et al., 1999; Siegel, 1993). The ability to understand the grammatical aspects of the language, according to this research, appears to be a critical factor for the fluent and efficient reading of text, largely due to the fact that fluent reading and efficient text reading requires predicting words that come next in a sequence. Syntax deficits have been reported for poor readers learning to read in English (e.g., Gottardo, Stanovich, & Siegel, 1996; Siegel & Ryan, 1988; Tunmer & Hoover, 1992). Verhoeven (1994) suggested that English learners may have difficulties learning to read in a second language because lexical and syntactic processing may not transfer from a first to a second language. Chiappe and Siegel (2006) used a

cloze test to compare the syntactic competence of first-grade English learners and first-grade native English speakers. Native English speakers scored higher, a finding consistent with oral language difficulties revealed by other samples of ELL students (e.g., Geva, Yaghoub-Zadeh, & Schuster, 2000; Lesaux & Siegel, 2003; Swanson, Saez, Gerber, & Leafstedt, 2004). Syntactic awareness in the Chiappe and Siegel (2006) study of first grade ELL students was an important predictor of the same students' second-grade reading achievement.

**10. *What empirical research supports the explicit teaching of English language vocabulary to English learners?***

English vocabulary has historically occupied a central place in both literacy and content-area assessments and constitutes the most pervasive factor in U.S. intelligence tests (Wahlberg, 1989). Beck, McKeown, and Kucan (2002), Fitzgerald (1995a), Gersten and Baker (2000), Snow et al., (1998), and Ulanoff and Pucci (1999) all describe experimental results supporting the centrality of vocabulary in the comprehension of language-related tasks. Saunders, Foorman & Carlson (2006) conducted research in the classrooms of 1,237 kindergarten ELL students in three types of classrooms: immersion, dual immersion and transitional and found that explicit vocabulary instruction constituted an average of less than five percent of literacy-related instruction. August et al (2005) emphasize the critical nature of vocabulary teaching for English learners by citing research linking vocabulary development to reading proficiency.

**11. *What empirical research supports reducing class size as a way of improving achievement for ELLs?***

The most fundamental and researched question about class size is does it affect student learning? No class size studies were found that directly addressed the learning of the English language, though several experimental and quasi-experimental studies of low-achieving students provide tangential support. The most robust and academically cited study of the effects of class size on student achievement was conducted in Tennessee in the 1980s. Project STAR (Student/Teacher Achievement Ratio) has been called by Mosteller (1995) "one of the greatest education experiments in education in United States history." Students in the STAR program were randomly assigned to one of three treatments: a class of 13-17, a class of 22-26, or a class of 22-26 with a full-time aide. Students were assigned to their class for a four-year period, after which time they returned to a regular size classroom. For each of the four years, a teacher was randomly assigned to each class. The results showed statistically different achievement differences between students in small classes and the other two groups (and no differences between classes with aides and without). For all students the difference was around a fifth of a standard deviation in student achievement. There were significantly larger (by two to three times) effects for minority students, a finding replicated by Krueger (1999). Differences between minority and non-minority students have been examined only through grade four; these show that the early benefits of class size for reducing minority disadvantage persist, but do not expand after the class-size experiment has ended (Finn, Fulton, Zaharias, & Nye, 1989). There have been more than 100 other small-scale experiments and quasi-experiments that have focused on class size. Syntheses of these studies generally conclude that there is some evidence of a positive relationship between class-size reductions and student achievement (Finn & Achilles, 1999; Nye, Hedges, & Konstantopoulos, 1999), particularly in the early grades for classes below

20, and for at-risk students, although the precise magnitude and linearity of effects is much debated. Other researchers have found, however, that teachers' instructional approaches were substantially the same before and after the class-size reductions (e.g., Cahen, Filby, McCutcheon, & Kyle, 1983). Shapson and his colleagues (Shapson, Wright, Eason, & Fitzgerald, 1980) used an experimental design to measure changes in teacher behavior in classes of 16, 23, 30 or 37 students. Classroom observations revealed virtually no consistent differences in classroom practices in smaller versus larger classes.

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