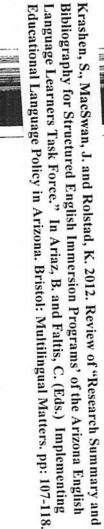# 6 Review of 'Research Summary and Bibliography for Structured English Immersion Programs' of the Arizona English Language Learners Task Force

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The 'Research Summary and Bibliography for Structured English Immersion Programs' of the Arizona English Language Learners Task Force purports to present a scholarly and balanced review of current scientific knowledge regarding effective programs for English language learners (ELLs) in general and structured English immersion (SEI) in particular. However, we find that the review neglects to reference significant research bearing on the questions raised, and frequently draws inappropriate conclusions from the research presented. Perhaps most disappointing is the tendency in the review to neglect important conceptual distinctions which could have usefully guided the research summary. Below we address each area of literature review in turn, pointing out significant limitations and incorrect interpretations as they arise.

What is the Current State of Scientific Research in the Area of Effective Instruction for English Learners?

The review cites references to make the point that there are relatively few high-quality studies regarding program effectiveness for ELLs, with

estimates ranging from 5 (Gersten & Baker, 2000) to 50 (Genesee *et al.*, 2006). While any empirical question of significance might benefit from additional research, experts widely believe that an adequate number of program effectiveness studies have been carried out to provide solid guidance to policy makers.

Several recent research syntheses have been conducted which the Task Force document fails to reference and which bear directly on the question of program effectiveness. In a recent narrative synthesis of research, funded by the US Department of Education's Institute for Education Science, Slavin and Cheung (2005) reviewed 16 studies they found to be methodologically rigorous comparing SEI to better established alternative programs which used a combination of English Language instruction and native language academic support such as Transitional Bilingual Education (TBE). Slavin and Cheung (2005) found that most of these studies favored TBE over SEI. Although some studies found no difference, a significant finding in their report was that no study reviewed significantly favored SEI programs. Another research summary conducted by Rolstad *et al.* (2005a) used meta-analysis to compare SEI to TBE. Meta-analysis is a widely used and highly regarded statistical method used for comparing and synthesizing a corpus of studies addressing a single research question, such as the effectiveness of program alternatives for English learners; meta-analysis was developed by Gene Glass in 1974, and is routinely used in medicine, psychiatry and the traditional academic disciplines. Rolstad *et al.* (2005a) found clear evidence that native language instructional support is a more beneficial treatment for ELLs than SEI, and that children in long-term developmental bilingual programs benefited even more from academic support in their native language than did children in either TBE or SEI. In a separate study, Rolstad *et al.* (2005b) reviewed a subset of studies conducted in the Arizona context to assist Arizona policymakers in drawing conclusions regarding program effectiveness for English learners locally. The authors found that the subsample of studies conducted in the Arizona context showed even stronger positive effects for TBE over SEI than studies in the larger national sample. Finally, another significant and very extensive review of research on educating ELLs was published last year by the National Literacy Panel, a project of the US Department of Education's Institute for Education Science. The report found that instructional programs for ELLs which include the use of children's home language for instructional support improved academic achievement outcomes for ELLs (Francis *et al.*, 2006).

The current state of knowledge regarding this question is relatively rich. As in any area of research, some studies are better than others, and the proportion of studies conducted under ideal methodological conditions is relatively small. Nonetheless, in just the last two years, three distinct

research teams independently concluded that SEI is an inferior instructional approach in comparison to more traditional programs which teach ELLs in both English and the native language, and a research synthesis focused solely on studies conducted in Arizona drew similar conclusions.

A review of the evidence suggests that the development of scientifically sound programs for ELLs involves curricular and pedagogical activities which use children's native language to enrich their understanding of school content and academic subject matters while they are learning English.

What Research Supports the Time-on-Task Principle?

The Task Force document reviews research relevant to the time-on-task principle, the notion that time spent engaged in learning is positively related to learning outcomes. We have no disagreement with the Task Force document regarding these generalizations, and agree that time spent engaged in learning will positively impact learning outcomes, as concluded by ample research. However, an unstated assumption in the Task Force document may potentially misguide readers regarding the implication of these conclusions. Regrettably, the Task Force document reviews time-on-task studies situated in environments in which children are learning academic subject matter, but does not take note of the advantage children in these studies have from learning in a language they understand (English, their native language, in the studies reviewed). It is now taken for granted among neuroscientists that language acquisition takes place in a specialized center of the mind/brain, in relative isolation from the central processes which concern general academic learning (Gallistel, 2000; MacSwan & Rolstad, 2005). We therefore expect achievement in mathematics, for instance, to be positively affected by time spent engaged in learning mathematics. However, the question of whether the child understands the language of instruction will surely affect engagement, and engagement of mathematics in instructional contexts can result in any linguistic medium comprehensible to the child. Unfortunately, those who reference research evaluating the time-on-task principle as support for the idea that maximum instructional time should be spent in English fail to conceptually distinguish between subject matter content and its linguistic medium.

A recent study funded by the US Department of Education's Institute of Education Science was designed to specifically evaluate the Time-on-Task Theory in relation to the education of ELLs, among other questions (MacSwan *et al.*, 2008). Based on adjusted R^2 indices in a hierarchical regression analysis, researchers found that, after controlling for English

literacy (due to overlap with the outcome variables), the addition of English oral proficiency did not contribute significantly to the prediction of oral achievement. Effect sizes were generally small for the addition of oral language to literacy, with incremental R^2 indices never exceeding 0.05. However, Spanish literacy measures contributed significantly to language, mathematics and reading achievement over and above the set of English oral proficiency measures ($\Delta R^2 = 0.12$, 0.08 and 0.13, respectively). Among these Spanish-speaking children, the combined English oral proficiency and Spanish literacy sets of measures were statistically significant and accounted for 29% of the variance in language, 27% of the variance in mathematics and 32% of the variance in reading.

A review of the evidence suggests that the Time-on-Task Theory, which urges maximal time in English in instructional contexts, is not supported. Rather, the evidence supports an alternative view, sometimes called the Facilitation Theory, which posits that academic content knowledge acquired through use of the native language transfers to and thereby facilitates academic growth in the second language (English) environment.

What Empirical Research Supports the Teaching of Discrete English Language Skills in a Particular Order?

Studies show, as the Task Force document indicates, that we appear to acquire aspects of language in a predictable order. It must be pointed out, however, that this observation alone does not imply that we should attempt to teach children grammatical morphemes (what the Task Force document presumably means by 'functors') along the lines of the attested order, and no evidence is cited to suggest that such teaching strategies should be effective. Rather, the findings regarding the predictable order of acquisition of grammatical morphemes are widely interpreted quite differently: The natural order (and other evidence) suggests that the acquisition of language, along with the order of acquisition of grammatical morphemes, appears to be biologically rooted, and learners are competent to structure and acquire input according to their own internal timetable; therefore, we should not attempt to order linguistic input according to order of acquisition but should rather provide meaningful, comprehensible input accessible to developing language learners.

It should be noted, as further support for these conclusions, that the evidence of a predictable morphological order is attested in first language

acquisition at least as robustly as in second language acquisition, and appears to hold regardless of whether a second language was acquired at school or in a nonacademic setting. However, parents are not generally advised to attempt to structure language input according to the order of acquisition of grammatical morphemes in order to facilitate or expedite first language acquisition. Roger Brown, who conducted the initial studies on order of acquisition of grammatical morphemes, addressed the question, 'How can a concerned mother facilitate her child's learning of language?' with this advice:

Believe that your child can understand more than he or she can say, and seek, above all, to communicate. To understand and be understood. To keep your minds fixed on the same target. In doing that, you will, without thinking about it, make 100 or maybe 1000 alterations in your speech and action. Do not try to practice them as such. There is no set of rules of how to talk to a child that can even approach what you unconsciously know. If you concentrate on communicating, everything else will follow. (Brown, 1977:26)

Indeed, researchers in the field of child language acquisition have found direct instruction to have no effect whatsoever on rate or quality of acquisition (Berko-Gleason, 1997; Pinker, 1994). One imagines that it could actually be harmful: If a parent insisted that a child first learn each vocabulary item or rule of grammar in a prescribed sequence before moving on to the next, significant language-related disabilities might result (assuming a child had no other linguistic input), because she is deprived of the language-rich environment typically associated with linguistic development.

Perhaps more importantly, while it is reasonably clear that children and second language learners acquire language in a predictable order, relatively little is known about the elements that are acquired. For instance, English has only a handful of grammatical morphemes but a large number of phonological and syntactic rules. The precise nature of these rule systems is not well understood, much less the exhaustive order in which they are learned. Hence, it is not possible to construct a curriculum of English in a scientifically rigorous way, as the order is not known in detail.

A review of the evidence does not suggest that language development curricula should be structured to focus on order of acquisition of English morphemes or any other aspect of language. Rather, language curricula should support second language learners with rich, meaningful and highly contextualized instruction to provide comprehensible linguistic input.

What Empirical Research Supports the Need for Allocating Fixed Periods of Time to Teaching Certain Elements of the English Language?

The Task Force maintains that ELLs benefit from the allocation of discrete blocks of instructional time devoted to English language and literacy instruction, but oversimplify the issue by ignoring the crucial issue of comprehensibility. Beginning second language acquirers will obviously profit from having a separate time set aside for English language class, because mainstream classroom teaching is incomprehensible to them. As soon as instruction becomes comprehensible, such classes should include subject matter teaching, beginning with subjects that are easier to contextualize for lower-level ELLs (science and math), and gradually moving to more abstract subjects, such as social studies. Ideally, students move into mainstream classes as they become comprehensible. See Krashen (1996) for further discussion.

What Empirical Research Supports the Explicit Teaching of Discrete English Language Skills (in the Domains of Morphology, Syntax, Phonology, Vocabulary)?

A wide variety of studies have pointed to the conclusion that the explicit teaching of discrete English language skills has a very weak effect on English acquisition. However, the Task Force document indicates that explicit teaching of English is of benefit in essentially all domains of linguistic competence.

The studies included in the Task Force review have several things in common: (1) They show very modest effects for grammar study; (2) the conditions hypothesized for the use of consciously learned language (Krashen, 2003) are met (focus on form, time, know the rule) on the measure used; (3) students were experienced language 'learners' and believed in direct teaching; (4) the effect fades with time. These studies thus actually confirm that the effect of teaching grammar is weak (Hillocks, 1986; Krashen, 2003; Truscott, 1998, 2004).

More significantly, the research findings reported in the Task Force document are frequently incorrectly presented. For instance, The Task Force document cites Saunders et al. (2006) as showing that including the teaching

of 'discrete language skills' in the curriculum resulted in superior achievement in reading for ELLs. However, this study is devoted to the effects of having a separate time block for English Language Development (ELD) and does not mention the specific interventions discussed by the Task Force.

In another instance, the Task Force document cites Fotos and Ellis (1991) as showing that learners who are made aware of certain structures are more likely to notice them in subsequent input. However, this study actually showed that learning grammar rules by problem-solving was slightly less effective than traditional grammar study and did not deal with 'noticing'. The Task Force document further claimed that Robinson (1996: 3–4) 'reported similar findings' but Robinson's study also had nothing to do with 'noticing'. Like other studies, Robinson's results showed a small effect for instruction when conditions for the use of grammar were met.

The Task Force document presents experimental studies to support its claim for the efficacy of the direct teaching of phonology. In all cases, students were focused on form in the measure, and had time to apply the rules they learned. In Derwing et al. (1998), classical pronunciation training had an effect only on a test in which subjects were heavily focused on form. Most importantly, Derwing and colleagues did not present raw data or descriptive statistics describing their results, making it impossible to determine the size of the effect of global pronunciation training. In another study cited, Perlmutter (1989), no comparison group was used, so we cannot tell whether these new US immigrants would have improved in this early stage of acquisition with or without instruction.

The Task Force document further claims that evidence supports the explicit teaching of verb tenses; however, the research reviewed does not support this conclusion. Rather, the studies cited provided evidence for the contrary view: Those who arrive as new immigrants speaking their second language as children typically show full acquisition of verb tenses, and even adult second language acquirers are very good at the acquisition of verb tenses. In Johnson and Newport (1989), for example, adult second language learners only had problems with three of the 13 grammatical forms tested, and even for those three, performance was far from zero, ranging from about 70% to 80% correct. Those who arrived in the United States as children performed very well on all aspects of grammar tested.

Furthermore, contrary to statements made in the Task Force document, Krashen and Pon (1975) did not show that classroom learners could not monitor their language. In fact, it showed the opposite: The one subject who was the focus of the study had achieved a very high level of competence in English morphology and was highly effective in supplying those few forms she had not acquired when focused on form. Furthermore, the brief literature

review regarding acquisition of verb tense does not mention the many cases of adults who have successfully acquired verb tenses, as well as other complex aspects of grammar, and who have done so without extensive formal instruction (e.g. Ioup *et al.*, 1994; Krashen, 2000).

Also not mentioned in the Task Force document is the fact that grammar and vocabulary teaching can, at best, cover only a small percentage of what needs to be acquired because the systems that people acquire are large and complex, and the precise character of these systems is not well understood. Thus, even if children in direct instruction learned school lessons with 100% accuracy and retention, they still would not know enough to communicate in English or use it effectively, as there is vastly more to the rule systems underlying English (or any language) than could be presented in class. This argument has been made for the acquisition of grammar, spelling, phonics, writing style and vocabulary (Krashen, 1982, 1984; Nagy *et al.*, 1985; Smith, 1988, 1994).

Grammar-based approaches are also not supported in multivariate correlational studies. The amount of formal study of a language is generally less significant in multivariate studies than the amount of free reading, and is often not found to be a significant predictor of second language competence when free reading is included in the analysis (Gradman & Hanania, 1991; Lee *et al.*, 1996). In Stokes *et al.* (1998), the amount of reading done was the only significant predictor of mastery of the subjunctive in Spanish, with both total formal study and specific instruction on the subjunctive failing as predictors.

Studies do indeed show a positive relationship between reading ability and syntactic competence. A reasonable interpretation of the finding is that reading is the cause of growth in syntactic competence, not that teachers should teach children word order rules to help them in reading. Similarly, studies show that vocabulary size and reading ability are correlated. A reasonable interpretation of this finding is that reading is the source of much of our vocabulary knowledge in school settings. These interpretations are suggested by the many experimental studies which show that students who do more reading outperform the comparison group on tests of reading, writing, grammatical accuracy, vocabulary and spelling.

Research has shown repeatedly that students in comprehension-based classrooms, where the instructional focus is on comprehension of messages of interest and not formal grammar instruction, acquire as much or more of the second language than students in traditional grammar-based classrooms. These findings hold at both the beginning and intermediate levels (Asher, 1994; Hammond, 1988; Isik, 2000; Nicola, 1989; Nikolov & Krashen; 1997; Swaffer & Woodruff, 1978; Winitz, 1996; Wolfe & Jones, 1982;).

A series of studies, dating from 1935, confirms that grammar instruction has no impact on reading and writing development (see reviews by Hillocks,

1986; Krashen, 1984). In a study conducted in New Zealand (Elley *et al.*, 1976), high school students were divided into three groups: One group studied traditional grammar in English class, a second studied generative grammar, and a third studied no grammar. Students were tested every year for three years. The researchers found no differences in reading comprehension, writing style, writing mechanics or vocabulary among the groups, and a follow-up done one year after the project ended also showed no differences among the groups. The authors concluded that 'it is difficult to escape the conclusion that English grammar, whether traditional or transformational, has virtually no influence on the language growth of typical secondary students' (Elley *et al.*, 1976: 17–18). The study of complex grammatical constructions does not help reading (or writing); rather, mastery of complex grammar is a result of reading.

A review of the evidence does not suggest that language is best taught with a focus on discrete forms, but rather that children will acquire a second language naturally in a setting in which rich and meaningful contexts provide support for language acquisition. While some attention to grammar instruction may be minimally beneficial to some students, it should not dominate the language education curriculum.

What Empirical Research Supports Reducing Class Size as a Way of Improving Achievement for ELLs?

The Task Force document suggests that reducing class size will have positive effects on academic achievement for ELLs. Although there is an absence of research directly relating to this question, we agree that a consideration of related evidence suggests that this outcome is likely.

However, other factors of perhaps equal or greater importance are not mentioned in the Task Force document, such as teacher qualifications, the availability of reading materials and texts, funding and coherent programs for ELLs. Research suggests that factors such as these – teacher qualifications and program funding, in particular – deserve significantly more positive consideration than they are presently receiving in Arizona policy contexts.

Conclusions

The Task Force document presents an incomplete view of the research, limiting its citations to studies that appear to support its position. Studies providing counter-evidence are not mentioned, and in many cases the studies

that are cited are incorrectly described. A consideration of a wider body of research and more accurate reporting of studies actually supports positions far different from what the Task Force proposes, including the use of the child's first language to accelerate the development of English literacy and academic knowledge and the limited role of direct teaching of the discrete elements of language.

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Part 3

Arizona Teacher