

## **Remarks on C. Rossell, 'Does bilingual education work? The case of Texas'**

By Stephen Krashen

In a recent paper on bilingual education in Texas, Christine Rossell repeats her claim that bilingual education "is the least effective program for ELL students if one's goal is achievement in English" ([Rossell, 2009](#), p. 12). This conclusion is based on her previous work as well as her analysis of the performance of children in Texas on the TAKS. I argue here that neither her previous work nor her current analysis supports this conclusion.

### **Rossell's Previous Papers**

#### *Meta-analyses*

Meta-analysis assigns to each study an effect size, which reflects the strength of the superiority of one group over another. In the studies discussed here, a positive effect size means that students in the bilingual program did better on tests of English (mostly English reading comprehension), and a negative effect size means students in the all-English comparison group did better.

In her most recent analyses (Rossell and Kudar, 2005), there is surprisingly little difference between Rossell's results and those of other reviewers. Meta-analyses of bilingual education research have resulted in average effect sizes between .18 and .33 in favor of bilingual education (Krashen and McField, 2005), which is considered a small but positive effect.

Rossell and Kudar present a re-analysis of two of these reviews. For studies analyzed by Slavin, and Cheung (2005), Rossell and Kudar's average was .10 using one method of computing effect sizes (Hedges  $d$ ) and .14 using another (Cohen's  $d$ ), less than Slavin and Cheung's .33, but still positive. Greene (1997) reported an average effect size of .21 for English reading. Rossell and Kudar's reanalysis of the same studies resulted in an effect size of zero when not weighted for sample size and -.06 when weighted for sample size.

These differences are the result of a few disagreements on the evaluation of individual studies. For most studies, Rossell and Kudar are in agreement with other scholars.

Rossell and Kudar thus report somewhat weaker results than other scholars, but do not find that bilingual education is harmful for the development of English. Rather, there is a very slight negative effect in one case, no difference in another, and a slight positive effect in other cases.

This does not support the conclusion that immersion is preferable to bilingual education. Rather, the results show that children in bilingual programs acquire English at least as well as children in all-English programs. What is interesting is that they do this with less exposure to English in school, which confirms that time spent with the first language has value for English language development.

### *Vote-counting*

Another way of reviewing research is "vote-counting," seeing how many studies got positive results, how many got negative effects and how many showed no difference.

Bilingual education versus submersion: Rossell and Kudar's vote-count results for these comparisons differ from earlier versions (Rossell and Baker, 1996). Rossell and Baker (1996) claimed that 20 studies showed submersion to be superior to bilingual education. In Rossell and Kudar (2005) only 10 studies are listed in this category (table 1b). In Krashen (1996) I reviewed three of the 20 that were available to me, and argued that they did not provide convincing evidence for the superiority of submersion. Two of these were removed in Russell and Kudar (2005) and one was retained.

Bilingual education versus immersion: Here, both Rossell reviews come to similar conclusions. Rossell and Baker (1996) claim that ten studies show immersion to be superior to bilingual education and Rossell and Kudar claim that 12 studies show immersion to be superior to bilingual education. As noted in Krashen (1996), most of these studies compared full to partial Canadian immersion. But Canadian immersion is not the same as American structured immersion. It is, in fact, similar to bilingual education in that it adheres to the same underlying principles. I have also argued that the American studies included in this category are actually cases of well-organized bilingual education programs shown to be superior to less efficient forms of bilingual education.

I discussed Malherbe (1946), a study of Afrikaans-speaking children acquiring English in South Africa, in Krashen (1999). This study should not be considered evidence for or against bilingual education: There was no control for pre-existing differences; there is evidence that the English-only children were from a more privileged population. Also none of the bilingual programs delivered much comprehensible input in English, and no statistical tests were reported.

My conclusion is that none of the 12 studies show that immersion is better than bilingual education.

### **Rossell's TAKS Analysis**

Rossell's new evidence is based first of all on her finding that fewer ELL children enrolled in bilingual programs in Texas take the TAKS examination in English compared to ELLs not in bilingual education. This is, she argues, evidence that bilingual education is not as effective in teaching English. Second, she concludes that those in bilingual education who take the exam score lower than those in all-English program.

In this analysis, Rossell violates her own standards. In several publications, Rossell (Rossell and Baker, 1996; Rossell and Kudar, 2005) has insisted that studies that compare groups either use random assignment or statistically control for factors that can influence achievement. Here, she only controls for poverty and the percent of ELL students tested and enrolled in a grade.

It is possible that some non-bilingual education students had been in bilingual programs but

were exited because of English proficiency; exit criteria in some cases are lower than criteria for reclassification as fluent English proficient. It is also possible that some students were more proficient in English before starting school and were therefore not placed in bilingual programs.

Even if there were no crucial differences of this kind between the groups, the results are not impressive. They appear to be large in Rossell's figure 4 because they are expressed in percentages, but the absolute difference in scores is tiny.

In grade 3, for example, the raw regression coefficient for bilingual education was .061. This means that if a student is in a school in which all ELL students are in bilingual education, it is predicted that the score will be  $100 * .61$  points less, or 61 points less than in a school in which no students are in bilingual education. This seems like a lot, but the average TAKS scale score in grade 3 is over 2000! Rossell used TAKS scale scores in her analysis. In terms of scale scores, the drop due to bilingual education is less than 3%. If 50% of the students in a school are in bilingual education, the drop due to bilingual education is less than 1.5%.

Another indication that the results are weak comes from an inspection of the  $r^2$  values in Rossell's regressions in Appendix 7a. At best, her predictors account for 11.5% of the variability in TAKS scores, at worst about 4%. This means that if we know the percent of students in bilingual education, the percent in poverty, the percent of ELLs in a grade and the percent of ELLs tested, this gives us between 4 and 11.5% of the information we need to predict the TAKS score. The predictive value of participation in bilingual education is less than that. Rossell does not tell us how much of the variability in the  $r^2$  is due to bilingual education; this would require a hierarchical regression analysis, which she did not do.

Inspection of the betas shows that participation in bilingual education is in most cases much less important a predictor of TAKS performance than poverty, by far the strongest predictor of TAKS scores overall.

### **Other Evidence for Bilingual Education**

Russell fails to mention other evidence for bilingual education, findings showing evidence for the principles underlying bilingual education (literacy transfers across languages, and background knowledge gained in the first language helps make English input comprehensible; see e.g. Crawford and Krashen, 2007).

Of great interest is the fact that Rossell appears to accept these principles to at least some extent. In their conclusion, Rossell and Kudar (2005) support "the use of the native tongue to clarify when necessary or possible" and they also support the teaching reading in the first language for a brief time when the child knows no English. Her problem with bilingual education is "the theory that Spanish must be mastered before English," which is, of course, not the theory behind bilingual education. The theory behind bilingual education is that the first language can be used in ways that accelerate English language development.

### **Misunderstanding of Bilingual Education**

Rossell's misunderstanding of bilingual education is reflected in her definition of bilingual

education as all Spanish with English-pull out: "Bilingual education is instruction provided to students in all subjects in a self-contained classroom with other students who speak the same language. The students are also taught English, typically by their bilingual education teacher" (Rossell, 2009, page 4).

This kind of program certainly exists, but it is a very weak version of bilingual education. Real bilingual education provides literacy in the first language, which transfers to English, subject matter teaching in the first language, which helps make English more comprehensible, and comprehensible input in English, in the form of ESL, and subject matter teaching introduced as soon as it can be made comprehensible. In these programs, the first language provides indirect but powerful support for English, and English is provided directly by ESL, sheltered subject matter teaching in English and eventually by mainstreaming. There is no requirement that Spanish be "mastered" before English.

### **Note**

Rossell notes that few students are enrolled in bilingual programs in middle school and high school, where they are not required. She interprets that as showing that given a choice, people reject bilingual education (page 5). Another interpretation is that by that time, most students have been successful at acquiring academic English.

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