

Fast ForWord

Longitudinal Impact Study

the study sought to discover whether participation in Fast ForWord over a cumulative period of time would show increased student gains in FCAT reading proficiency

what was the purpose of the study?

This report presents findings of a three-year study of Fast ForWord on the academic progress of struggling readers in Duval County. Fast ForWord (FFW) is a technology-based intervention expected to have a direct effect on students' cognitive processing skills. The object of the evaluation was to assess whether, and to what extent, participation in FFW over a period of time could be shown to have produced increased student gains on a state-mandated assessment of reading proficiency. Features of this intervention may suggest that time following participation in FFW is needed to allow for development of cognitive processing skills before a discernible impact on reading will become evident. This study tracked a longer period of time to explore whether a lagged, or cumulative effect, on reading achievement may emerge than is evident by only examining achievement on an annual basis.

what procedures were followed?

For this analysis, developmental scale scores (DSS) in reading were used from the Florida Comprehensive Assessment Test (FCAT) from the spring of 2005-2008, resulting in three (year to year) gain scores. In total, 23,738 students in grades 1-12 were introduced to Fast ForWord in a phased implementation. The study group was further refined to include students present in Duval County schools continuously over this three year period, and those students assessed annually on the FCAT (grades 4-10).

The gains of students who had received FFW intervention over the three year period were compared with students who had not received the intervention, taking care that both groups were comprised of similar demographic characteristics and performance levels.

The Fast ForWord Longitudinal Impact Study addressed four questions:

Q Were gains made by students involved in Fast ForWord (FFW) greater than those of a similar group of students who were not (Non-FFW) annually and cumulatively?

A As shown at left, annual gains of students participating in FFW in 2006, 2007, and cumulatively, were significantly higher than students in the Non-FFW group.

Comparing the cumulative gains (2006-2008) made by students in FFW and Non-FFW groups, resulted in a clear finding of a statistically significant difference ($p < .0001$). This suggests that FFW student gains over the three-year period were not only greater than those of non-FFW students, but to an extent that could not be explained by normal variation or individual student differences.

Also explored was whether cumulative gains were significantly impacted by the number of lesson modules (called products) completed and the level of lab implementation of FFW found in schools. Completion of 1 product was described as low, 2-3 products was considered medium, and 3 or more was high. Implementation was assessed and monitored to ensure that students received instruction in a manner faithful to the design of the model. Product completion was found to be a statistically significant factor, with a moderate completion level of 2-3 products correlating to the highest documented gains.

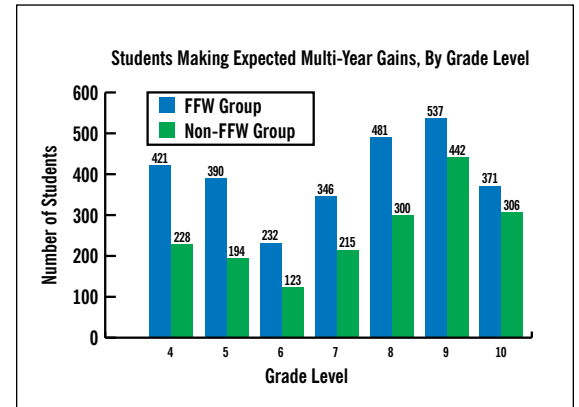
FCAT gains	Group	N	Mean	Std. Deviation
Gains in 2006	FFW	5219	117.93	234.39
	Non-FFW	5010	91.26	204.44
	Total	10229	104.87	220.62
Gains in 2007	FFW	5219	57.40	226.09
	Non-FFW	5010	19.38	191.68
	Total	10229	38.78	210.79
Gains in 2008	FFW	5219	77.79	191.08
	Non-FFW	5010	73.66	192.20
	Total	10229	75.77	191.63
Cumulative Gains 2006-2008	FFW	5219	405.07	434.88
	Non-FFW	5010	221.84	430.37
	Total	10229	315.32	442.25

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The primary focus of this study has been to determine whether exposure to Fast ForWord, if allowed time, would jump start language processing skills thought to be necessary for students to make rapid and substantive progress in developing reading proficiency. Since longer term success was the primary goal, we needed a measure of growth that could show that longer term perspective. For students who are functioning significantly below grade level in reading (Levels 1 or 2 on the FCAT), there are identified minimum margins of growth for each grade level. These growth goals are defined in developmental scale scores, and reflect what is considered to represent a “year’s growth” at each grade level from one year to the next on the FCAT in reading. We used these annual growth expectations, by grade level, to determine the number of points students would be expected to accumulate across years of the study (2006-2008).

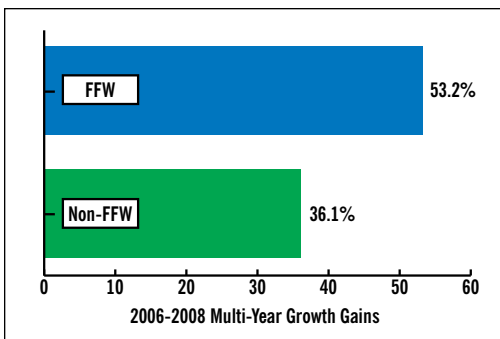
Q *Were gains made by students significantly different at certain grade levels? Or by particular NCLB subgroups of students (i.e., free/reduced or paid lunch, SWD status, LEP status, or race)?*

A Testing for significant differences by subgroup was also something of importance to the study, and was done by comparing the size and pattern of gains made by students in particular subgroups who did (FFW) and did not (Non-FFW) receive the treatment. If a treatment, or program, has the same general effect on students in all subgroups, then the pattern of gains will be approximately the same for each. In the same way, we would not expect the influence of Fast ForWord to be much different from one grade level to the next. The graph at right indicates the number of students making expected multi-year gains for the FFW group and the non-FFW group by grade level. When results of the two groups are viewed together, it is evident that even larger gains at grades 4, 5 and 8 have been made, illustrating an even greater than average impact of FFW on students at those grade levels.



Q *Were student gains significantly higher when the implementation level at their schools was greater, or when more FFW products were completed?*

A The optimum gains made by students in all schools were made by students who, on average, were completing 2-3 products. When tested for significance, the factor of product completion was statistically significant ($p < .05$). The level of lab implementation, however, was not found to be significant, largely due to the fact that all schools were implementing labs with a high degree of program fidelity in Duval County.



Q *What was the practical impact of Fast ForWord on students in terms of the proportion of students meeting standards for making necessary growth gains as compared to similar Non-Fast ForWord students in the district?*

A The actual number of points gained for each student was summed across school years 2006, 2007, and 2008 to create a cumulative gain. The graph at left compares students in FFW versus Non-FFW groups who achieved the multi-year expected growth gains. By visual comparison, it is clear that more students who had participated in FFW (blue) than had not (green) made the expected amount of multi-year growth. The number of points accumulated by FFW and Non-FFW students was compared, and the proportion of students making expected growth was clearly greater (53.2%) for FFW students than for Non-FFW students (36.1%).

But was the difference statistically significant? A procedure called chi-square analysis comparing the proportions of groups was used, and confirmed that the difference in proportion of students achieving multi-year growth was statistically significant ($\chi^2 = 41.3$, $p < .001$).

In practical terms, the final result of these comparisons were that 970 more FFW students reached expected annual growth standards than Non-FFW students over the 2006-2008 timeframe.

conclusions

In summary, it is clear that Fast ForWord has been successful at accelerating the reading progress made by struggling readers. Schools have implemented features of the program with fidelity to the program model, and optimum gains were seen when students complete 2-3 products on the system. There is some indication that performance of students within certain subgroups is varied. Further research needs to continue to determine what conditions are best to maximize the performance of all students, especially those in at-risk student populations identified by NCLB.

A Joint Project by the Schultz Center for Teaching and Leadership and Duval County Public Schools.

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