

## STUDY FIVE: PREDICTING PASSING RATE IN SCHOOLS IMPLEMENTING THE SHARON WELLS MATHEMATIC CURRICULUM

### **Purpose**

The purpose of this study was to examine factors within schools currently implementing the SWM curriculum that might predict the passing rate of students in Grade 3, 4, and 5. Information gained from this analysis is especially important to schools and districts that might be considering adopting this curriculum because it will provide information about the relative importance of various school factors over which administrators and faculty may or may not have control.

### **Method**

For this study, only schools implementing the SWM curriculum were examined. A total of 77 campuses reported a complete data set needed for this analysis (see Appendix A & B for teacher experience and attendance rates).

The analysis used for this study was a multiple regression. Three independent variables were used to predict the *Overall passing rate* of students in grades 3, 4, and 5. The three independent variables used for prediction included (a) *Degree of implementation* across grades (i.e., grades 3, 4, & 5), (b) *Average years of teaching experience* of faculty within an individual school, and (c) *Average attendance rate of students classified as economically disadvantaged*. Information needed for this analysis was available for 77 campuses within the current sample.

The methods for deriving both *implementation* and *teaching experience* were described in previous studies. Average attendance rate for economically disadvantaged students was calculated for each school by averaging the daily attendance rate of disadvantaged students in each grade within a school, then

across the whole school, and then again across years included in this study (i.e., 1999 through 2003).

For the present study, we used a multiple-regression procedure to determine the relative importance of three variables (i.e., overall degree of implementation, average teaching experience, and average attendance rates of economically disadvantaged students) for predicting the overall passing rates of students in grades 3, 4, and 5.

### **Results and Conclusions**

Table 5.1 contains descriptive statistics and zero-order correlations among the variables used in this study. Results from this analysis indicate that the variable most related to passing rate was daily attendance rate of academically disadvantaged students. Teaching experience of faculty was also significantly related to passing rate, but the relationship between passing rate and degree of implementation was near zero.

Table S5.1 *Descriptive statistics and correlation coefficients for variables predicting overall passing rate*

<b>Variables</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
1. Overall passing rate	1.00	.05	.02	.42*
2. Degree of implementation		1.00	.01	.05
3. Average teaching experience			1.00	.20*
4. Attendance rate of economically disadvantaged students				1.00
Mean	.88	10.07	11.13	.96
SD	.05	3.59	2.42	.03

Note: \* =  $p < .05$

A step-wise multiple regression was conducted to examine the ability of these school factors to predict the overall passing rate for schools implementing the SWM curriculum. The step-wise method of calculating this relationship allows only significant variables to remain in the regression equation. Table S5.2 contains the regression coefficients and beta weights. Results from this analysis indicate that attendance rate was the only statistically significant predictor of passing rate. Results from this analysis indicate that attendance rate was the only statistically significant predictor of passing rate ( $F(1, 75) = 15.91, p = .001, R^2 = .17$ ). Both degree of implementation and teaching experience factors appear to be unrelated in this model.

Table S5.2 Standardized coefficients for regression analysis on passing rate

Model <sup>a</sup>	Standardized coefficient			R <sup>2</sup> change
	Beta	t	p	
(Constant)		1.661	.101	.175
Average attendance rate of economically disadvantaged students	.418	3.989	.001	
Degree of implementation	.069 <sup>b</sup>	.656	.514	
Teaching experience	-.069 <sup>b</sup>	-.642	.523	

Note: <sup>a</sup> = dependent variable: overall passing rate for grades 3, 4, & 5.

<sup>b</sup> = excluded variable

The results from this analysis are particularly interesting, and encouraging. Attendance rates among economically disadvantaged student populations were, overall, quite high. Given this finding, it is likely that schools that are demographically similar to the ones in this study would also have a high attendance rate. Moreover, factors such as teaching experience and the historical implementation of a program are typically factors over which new schools or schools experiencing a change in administrative leadership have little control. Attendance rates, on the other hand, are a variable over which a school can exercise a greater degree of influence. Therefore, schools choosing to implement the SWM curriculum would likely realize a significant degree of benefit from using this program even if their staff is relatively new, or whether they were just beginning the process of implementation.