

STUDY FOUR: EFFECTS OF TEACHING EXPERIENCE AND DEGREE OF IMPLEMENTATION

Purpose

The purpose of this study was to examine the effects of the teaching experience of faculty on campuses implementing the SWM curriculum and the degree of implementation across the campus on the passing rates of students at each grade level (i.e., grades 3, 4, and 5).

Method

For this study, passing rate of students only in schools implementing the SWM curriculum was examined based upon the degree of implementation, and the teaching experience of teachers at each grade. In grades 3 and 4, 109 schools were included in this study; for grade 5, 93 schools were included.

Approximately 28% of schools reported a teaching staff with an average of less than 8 years of teaching experience (see Appendix A for teacher experience across years).

For this study, 3 separate analyses were conducted, each with two independent variables, and one dependent variable. A separate analysis was conducted for grades 3, 4, and 5. No analysis was conducted for grade 6 passing rate due to uneven cell sizes and a small number of campuses. A total of 12 campuses were implementing SWM curriculum in grade 6, with 2 in the moderate implementation group and 5 in the greater implementation group.

The independent variables for the three analyses were *Degree of Implementation* and *Average Teaching Experience* of faculty members at each campus. The method for deriving the implementation variable was described previously. The method for deriving the teaching experience variable consisted of averaging each campus' teaching experience across years (i.e., 1999

through 2003). Averages were then divided into three approximately equal groups: (a) average campus teaching experience of less than 8 years (28%); (b) average teaching experience between 9 to 12 years (35%); and (c) average teaching experience greater than 12 years (36%). The minimum average teaching experience of a campus was 3.68 years, and the maximum average of teaching experience was 17.38. The total sample size for this study of was 109 schools.

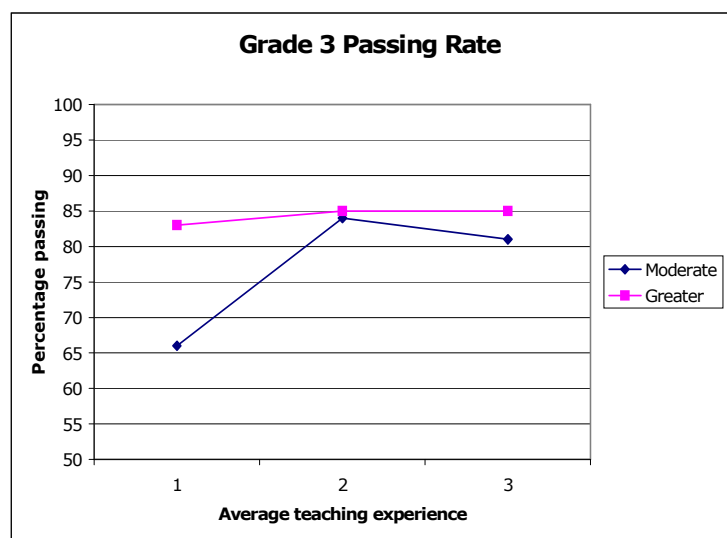
The dependent variable for each of the three analyses was overall campus passing rate at each grade level (i.e., grades 3, 4, & 5). As previously described, the overall campus passing rate was derived for each grade level by averaging across years of the study (i.e., 1999 through 2003).

Results and Conclusions

Table S4.1 contains descriptive statistics for each of the analyses by grade level. A 2X3 ANOVA was conducted for each grade level, and the main effects and the interactions between the independent variables were examined.

For Grade 3, results from this analysis revealed significant main effects for both degree of implementation ($F(1, 108) = 14.84, p = .001, \eta^2 = .12$), and years of teaching experience ($F(2, 108) = 10.24, p = .001, \eta^2 = .16$).

This finding indicates that statistical and practical differences were found for student passing rate when split into these groups. More important, however, is the fact that the interaction effect (i.e., degree of implementation by



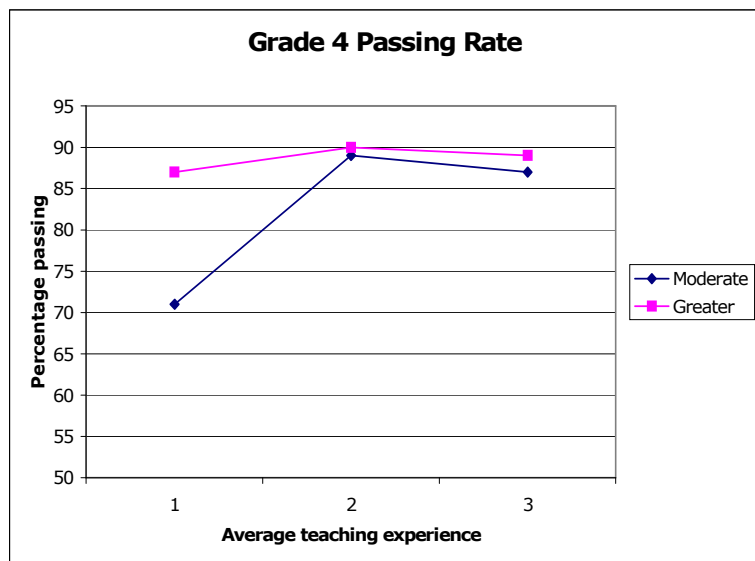
teaching experience) was also statistically significant ($F(2, 108) = 6.46, p = .002, \eta^2 = .11$).

This interaction effect indicates that the passing rate of students in Grade 3 depends both on the degree to which SWM curriculum has been implemented at the campus, as well as the teaching experience of the staff implementing the program. An examination of the cell means shows that passing rates were lowest in grade 3 when the average teaching experience was lower, and implementation was moderate. The highest level of passing rate were found in schools where implementation was greater and average teaching experience was either moderate or high.

Table S4.1 *Descriptive statistics for each grade level by degree of implementation and teaching experience*

Grade level	<u>Years of teaching experience</u>		
	< 8 years	9 to 12 years	12 or more years
<u>Grade 3</u>			
Moderate			
Mean	.66	.84	.81
SD	.16	.06	.07
N	18.00	20.00	20.00
Greater			
Mean	.83	.85	.85
SD	.07	.06	.07
N	12.00	19.00	20.00
<u>Grade 4</u>			
Moderate			
Mean	.71	.89	.87
SD	.18	.06	.06
N	17.00	18.00	19.00
Greater			
Mean	.87	.90	.89
SD	.06	.05	.05
N	12.00	19.00	20.00
<u>Grade 5</u>			
Moderate			
Mean	.73	.93	.90
SD	.20	.03	.04
N	15.00	15.00	14.00
Greater			
Mean	.91	.91	.91
SD	.07	.05	.04
N	13.00	18.00	18.00

For Grade 4, results from the analysis also revealed significant main effects for degree of implementation ($F(1, 104) = 10.90, p = .001, \eta^2 = .10$), teaching experience ($F(2, 104) = 12.12, p = .001, \eta^2 = .20$), and the interaction effect ($F(2, 104) = 6.46, p = .002, \eta^2 = .12$). These effects were found to be both practically and statistically significant. As for grade 3, grade 4 passing rates depended upon both the degree of implementation and the average teaching experience of the staff. Examination of cell means suggest that passing rates were lowest for schools with less experienced teachers working at campuses where the SWM curriculum was implemented to only a moderate degree. The passing rates of campuses in the other groups, however, appeared to be approximately equal.

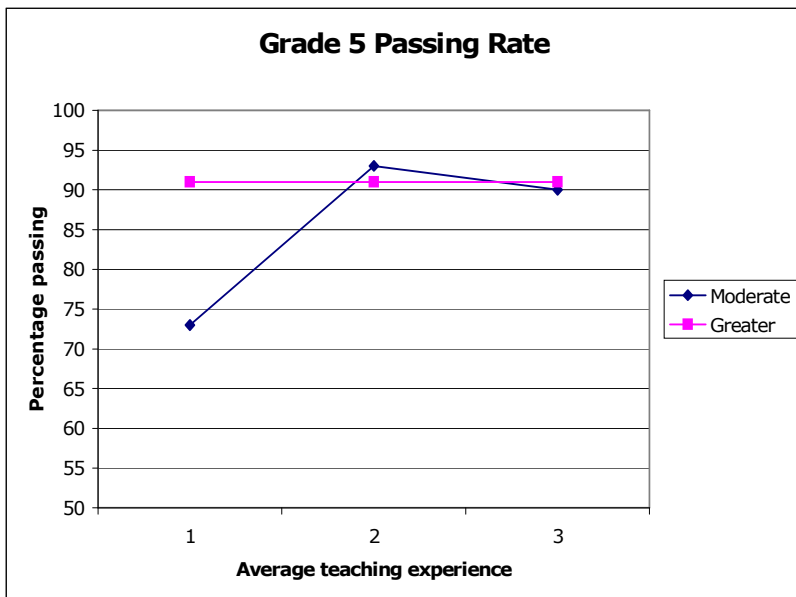


Results from the analysis of Grade 5 passing rates revealed a pattern of achievement that is comparable to the other grade levels. Both the main effects of degree of implementation ($F(1, 92) = 8.46, p = .005, \eta^2 = .9$) and teaching experience ($F(2, 92) = 9.71, p = .001, \eta^2 = .18$) were significant, as well as the interaction effect ($F(2, 92) = 8.96, p = .001, \eta^2 = .17$). An examination of the cell means again revealed that the passing rates for students in grade 5

were lowest on campuses where implementation was moderate, and the average teaching experience of the staff was lower.

Results from the three analyses reveal a consistent pattern across each of the grade levels that the success of the SWM curriculum depends, in part on both the amount of time and the range of grades on the campus that are implementing the program, and on the experience of the staff. The line graphs

also reveal that in moderate implementing schools are most likely to be successful when teachers' average years of experience fall within a middle range. The effects of teaching experience, however, seem to be less pronounced in schools



where there is a more systematic implementation across grades and over time.