

THE EFFECT OF NUMBER OF
SCHOOL-TO-SCHOOL TRANSITIONS
ON DISTRICT PERFORMANCE

A Dissertation Presented to
The Faculty of the College of Education of
Ohio University

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Education

By

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August, 2004

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grade OPT, attendance rates, and suspension rates. Once again, number of school-to-school transitions was found to be a significant predictor variable for some of the dependent measures.

CHAPTER 5 SUMMARY OF FINDINGS, DISCUSSIONS, AND RECOMMENDATIONS

Introduction

This chapter summarizes the results of the study and provides interpretations of these results. The first section presents an overview of the study's major findings. The

chapter then provides interpretations of these results and their relationship to findings from earlier related research. The final two sections focus on recommendations for practice and suggestions for further research respectively.

Major Findings

At the outset of this study, one central research question guided the regression analyses: To what extent does the number of school-to-school transitions contribute to student achievement in consideration of likely moderator variables – district SES, class size, district size, and the interaction between district size and SES? Multiple regression analyses revealed that the number of school-to-school transitions did indeed have a significant effect on various district performance measures. Significance was achieved in the equations in which graduation rate and 9th (10th) grade aggregate achievement served as the dependent variables. Furthermore, analyses showed that, where the number of school-to-school transitions failed to meet the criterion level of significance (i.e., $p = .05$), it was still very close to meeting this standard. (See Appendix D for actual significance levels.) Analyses also demonstrated that number of school-to-school transitions (STS) covaried with district size in such a way that the inclusion of both variables in the equations dramatically decreased the amount of explained variance accounted for by STS. (See Appendix C.)

Further analyses examining transition effects were conducted with the inclusion of dummy locale variables. In these analyses, number of school-to-school transitions was found to have statistically significant effects with respect to all three dependent measures - 9th grade aggregate achievement, 9th (10th) grade aggregate achievement, and graduation rate. This result suggests the possibility that locale functions as a suppressor variable, a possibility further supported by the finding that the partial correlations for both school-to-

school transition and district enrollment became larger than their zero-order correlations when locale was added to the equations. Locale effects seem, therefore, to be absorbing some of the error variance in STS and enrollment, making them more potent as explanatory variables.

Using the same equations as were used in the regression analyses with the full data set, the researcher evaluated equations using just the rural cases. With the removal of non-rural cases, 230 cases remained for these analyses. In these rural-only analyses, number of school-to-school transitions was found to be a significant predictor when graduation rate served as the dependent variable. It was not a significant predictor in the equations in which achievement (either 9th grade only or 9th and 10th grade) was the dependent variable. This finding is not surprising, considering the fact that rural districts tend to have systematically smaller enrollments than non-rural districts (mean enrollment of 1459.84 in rural districts in contrast to 2591.53 in non-rural districts) as well as systematically fewer school-to-school transitions ($M = 1.93$ for rural versus $M = 2.37$ for non-rural).

Interpretation and Discussion

As discussed in chapter two, there is a small body of research that considers the influence of grade-span configuration (or number of school-to-school transitions) on performance measures, such as student achievement and dropout rates. Generally, these studies found that grade-span configuration (or number of school-to-school transitions) did have an influence on performance outcomes. Using schools and, to a lesser extent, districts as the units of analysis, these studies suggested that broader grade spans tend to be associated with higher performance.

Within this body of related research, most studies examining the effects of grade-span configuration on student achievement employed models in which the achievement of students in schools with one configuration was compared with the achievement of students in schools with other configurations. Researchers usually made such

comparisons in order to assess the relative advantages and disadvantages of specific grade-span configurations (e.g., Becker, 1987; Bickel et. al., 2000; Franklin & Glascock, 1998; Tucker, 1997; Wihry et. al, 1992). Often studies in this line of inquiry accounted for a few potent moderator variables. For example, several researchers included SES as a relevant covariate in the models they tested (Becker, 1987; Bickel et al., 2000; Franklin & Glascock, 1998; Wihry et. al., 1992). Most did not include organizational size (i.e., school or district size) or the interaction between organizational size and SES, and most did not include locale. Overall, these studies supported the conclusion that schools with broader grade spans had higher achievement outcomes. The finding from the current study – that the number of school-to-school transitions has a negative influence on district-level performance – contributes to the emerging body of literature suggesting that broader grade-spans may confer benefits to schools and districts.

Two of the earlier studies deserve special attention because of the relevance of their methodologies to the methodology used in the current study. The first study was conducted by Wihry and associates (1992) with a sample of 163 rural Maine schools. The researchers made comparisons based on the type of school – elementary, middle school, or junior/senior high school – that the students attended. This approach differed from the one used in the current study, which used the continuous measure, “number of school to school transitions” rather than the categorical measure, “type of school.” The studies are similar in that they both included appropriate statistical controls. As a result of their analyses, Wihry and associates found that eighth grade students performed better in schools with wider grade-span configurations. They surmised that higher student achievement resulted from these configurations because such configurations tend to

promote greater curriculum coherence and to provide students with a more familiar, and therefore more supportive, environment.

The current study expands upon the earlier work of Wihry and associates but it also differs: whereas these researchers used schools as the unit of analysis, the current study used districts. This is an important difference between the two studies. Not only did the choice to use schools as the unit of analysis keep Wihry and associates from accounting for the effects of district size on achievement, it also kept them from being able to explore the possible linear relationship between number of school-to-school transitions across districts and those districts' aggregate achievement. As noted in chapter one, number of school-to-school transitions is a characteristic of districts and ought, therefore, to be included in regression models that incorporate other district level variables.

Using a district-level approach to measuring grade span, Alspaugh (1998) explored the effect of number of school-to-school transitions on student dropout rates. His investigation suggested that number of school-to-school transitions was positively related to dropout rate. That is, dropout rates were higher in those districts in which students experienced more frequent school-to-school transitions. The current study also used number of school-to-school transitions as its measure of grade span.

Alspaugh (1998) argued that school transitions had a negative impact on educational outcomes because transitions produce instability in the learning environments that students experience. Moreover, Alspaugh found that these transition effects were long lasting. That is, he contended that a student's previous experience with making a transition did not lessen the negative effect of a subsequent transition. This conclusion implies that multiple school-to-school transitions have an additive effect on performance outcomes. Alspaugh's findings showed that districts composed of schools with broader grade spans and subsequently requiring fewer transitions had advantages with respect to dropout rates.

The current study also provided evidence that number of school-to-school transitions was a significant predictor of graduation rate – an inverse measure of dropout rate. Like Alspaugh, the researcher used school-to-school transitions as an independent variable, but the study also considered important moderator variables that Alspaugh did not include- class size, the interaction between SES and district size, and locale. Unlike the current study, Alspaugh’s study considered, in addition to total number of school-to-school transitions, the placement of the last school-to-school transition. He found that dropout rates increased as the grade level of students’ last transition increased. This variable, however, may confound the construct “point of transition” with the construct “number of transitions,” particularly since districts with relatively late final transitions also tend to be the ones to incorporate relatively large numbers of transitions overall. Nevertheless, Alspaugh did not include information (e.g., bi-variate correlations or multicollinearity diagnostics) that would enable the reader to determine whether or not there was significant covariance between these two variables.

The current study and the two studies mentioned above all suggest that multiple school-to-school transitions have a negative impact on student performance. None of the studies, however, explored through detailed qualitative methods the possible character of this impact. At this point, therefore, one is left to speculate. For example, school-to-school transitions might limit performance because they require students repeatedly to experience stressful situations. Moreover, multiple transitions may interfere with the ability of teachers and students to form close bonds that are critical for learning. Simmons and Blyth (1987) reported a decline for students in performance, motivation, and self-esteem following a transition from one school to another. Multiple transitions

might also cause negative outcomes because they weaken the connection between families and schools. By contrast, broader grade spans, especially for students in the lower grades, may provide opportunities for students and their parents to develop strong relationships with teachers and administrators. Such connections may provide a crucial foundation for students' future academic success.

The fact that findings from this study tend to support findings from previous research is important because this study addresses some of the limitations of the earlier research. First, as suggested above, the use of district as the unit of analysis in this study makes a useful contribution. In much of the previous research, in which cohort (e.g., eighth graders) was the unit of analysis, findings could not speak to the composite effect of school-to-school transitions on overall system-wide performance. These earlier studies generally employed categorical measures of grade span and then tested models comparing the performance of students who experienced various grade-span configurations. One major problem with these earlier studies was the tendency to confound the construct of configuration (e.g., K-6, 7-12; K-4, 5-8, 9-12) with the construct of grade span. This is a problem because configuration often represents a constellation of specified practices as well as a structural arrangement. For example, research on middle-grade education (e.g., Jenkins & McEwin, 1992) recommends not only that students in a certain age range be schooled in the same building but also that they be schooled in particular ways. Therefore, studies of discrete configurations may lead to the erroneous conclusion that the practices associated with a particular configuration are effective rather than recognizing that improved outcomes result from a simple structural feature of school organizations (cf. Becker, 1987).

The model for this study also built upon the previous research and incorporated moderator variables that were likely to influence student performance. The more complete specification used in this model is important because it enables the unique influence of number of school-to-school transitions to be distinguished from the influence of related variables such as organizational size. Moreover, it permits a more thorough analysis of the way independent variables of interest (e.g., number of school-to-school transitions and district size) relate to one another. In fact, the findings of the study point to the possibility that class size, district size, and number of school-to-school transitions might be viewed together as a constellation of conditions representing organizational scale.

An illustration of how these variables might combine together to form a construct representing organizational scale can be seen in the relationship between number of school-to-school transitions and district enrollment. The transition effect was actually masked by the model's district enrollment variable. The fact that number of school-to-school transitions emerged as an even stronger predictor of district performance when district enrollment was excluded from the model gives credence to its use as an alternative measure of school system scale. Because number of school-to-school transitions is determined by the grade spans of schools within a district, it is evident that grade-span configuration is closely related to other measures of the "size" of schooling. For example, a K-8 school with 500 students is not the same size as a 6-8 school with 500 students. The first school might be considered small with approximately 56 students per grade; whereas, the other school might be considered moderately large with 167 students per grade.

Although the number of school-to-school transitions is closely related to school system size, it is not a proxy for it. The difference lies in the fact that, while number of school-to-school transitions can be influenced by district-level policies, its enrollment cannot. A district can determine how many school-to-school transitions will exist. For example, a district might choose to organize itself into several schools with narrower grade spans. Alternatively, a district might choose to have geographically separate schools with broader grade spans. In both cases, the district enrollment has remained the same but the experiences for students are different. In the first example, the student would likely experience several school-to-school transitions and relatively large schools; whereas, students who attend schools with broader grade spans would experience fewer transitions.

This study also considered locale in some of its analyses -- an important contribution considering the fact that most of the previous studies overlooked this variable. Studying locale is important because grade span effects might be influenced by the contextual features of each locale. It is possible, for example, that there could be a tendency of some locales to favor certain structural conditions associated with organizational scale. For example, districts in rural locales might be more likely than districts in other locales to be small, contain small schools, and to configure schools with broad grade spans. Indeed, these tendencies are evident in the data used for this study. The study's findings about locale contribute something new to our understanding because they demonstrate that the locale variable functions as a suppressor of the error associated with the grade span effect. Thus number of school-to-school transitions becomes a more potent predictor variable when locale is included in the model.

Recommendations for Practice

Findings from this study and from previous related research do not provide suggestions for a best grade-span configuration for grades K-12. Generally, however, findings from this study would support the adoption of broad grade-span configurations because they reduce the number of school-to-school transitions and the harmful effects associated with them. These effects may be different for districts in different locales, and, as a result, it seems unwise to speculate about what might represent the “best” grade span in a general sense. Each grade-span option likely has certain advantages and disadvantages.

Local educators should take into consideration many factors before deciding upon the grade-span option that is the most appropriate to meet the needs of their community. For example, leaders of a particular school system might feel that adopting a middle school configuration (and the related practices) is important for improving student achievement. They might argue that a middle school configuration would encourage a developmentally attuned curriculum, content specialization, and collaboration among teachers. The mere adoption of a middle school configuration, however, might not result in higher achievement. The increase in the number of school-to-school transitions resulting from this change in organizational structure might, in fact, have a stronger negative influence on student performance than the positive influence of the middle school practices enabled by the change in district grade-span configuration. For example, a student might derive some benefit from the middle school’s developmentally appropriate instruction but fail to realize the full measure of that benefit because of the

stress caused by moving to an unfamiliar environment. Therefore, educators need to understand there is a tradeoff between minimizing the number of school-to-school transitions and selecting a configuration that might be the most appropriate for responding to the developmental needs of students.

Whenever possible, leaders should minimize the number of transitions or at least address their adverse effects. Leaders of school districts where there are many school-to-school transitions might, for example, want to implement programs to address adjustment problems resulting from transitions. These programs would help students become acclimated to new schools and handle the stress associated with the move to an unfamiliar setting. Orientation programs, looping, and advisor/advisee programs are examples of responsive approaches that districts could implement. These programs would increase familiarity with the new school and also focus on creating bonds between teachers and students.

Policymakers at both the state and federal level need to recognize that certain types of policies might have an impact on local decisions regarding grade-span configuration. They should be careful, for example, in requiring changes to teacher-preparation programs or to teacher licensure. Mandates stipulating certain approaches to teacher education and licensure are likely to have an influence on the grade-span configurations that districts adopt. For instance, the push toward increased content expertise and greater age-specific pedagogy for teachers might affect future school configurations. Many districts might configure themselves to match the new licensure requirements and therefore increase the number of school-to-school transitions.

Policymakers should be cognizant of this study's findings regarding the influence of locale and socio-economic status on district achievement when they decide upon the grade spans that are appropriate for their schools. Often state or federal mandates are universally applied, but these policies might be harmful to districts in specific locales or to districts that serve large numbers of students from lower-SES backgrounds. For example, a state directive for school construction could have a significant effect on the achievement of students in rural locales. The directive might require rural districts to create buildings that support grade spans and enrollment sizes that are not appropriate given the rural context or the background characteristics of the students.

An interesting practice has recently taken place in rural Ohio districts with respect to grade-span configurations. Many rural districts have chosen to build large K-12 facilities that encompass their entire student population. At first glance, in light of this study's findings, this practice might appear to represent a good idea. However, the new schools (despite their apparent K-12 configuration) are larger in size than the schools they replace and, therefore, may function to constrain the achievement of low-SES students. In addition, schools on K-12 campuses are often treated as separate facilities, even when they are housed in the same building. Children in the primary wing may have little dealings with the teachers or students in the middle-school wing. Transitions, therefore, may be just as disruptive as they are when children move from one physically separate building to another. Moreover, the practice of consolidating a district's schools onto one campus has also led to the closure of many small rural schools and subsequently an increase in the number of students who experience extended daily bus rides. The practice of establishing single-campus K-12 facilities in rural communities will likely

affect those communities in ways similar to the effects of earlier approaches to consolidation.

This trend, which seems to be becoming more prevalent, is troubling. In Ohio, rural districts already tend to have smaller district enrollments and fewer school-to-school transitions than either suburban or urban locales. So too do lower-SES districts. Therefore, it seems like most rural districts and low-SES in Ohio would benefit more from *preserving their current structures* than from making alterations to those structures in response to “efficiency of scale” guidelines.

These interpretations suggest several recommendations for practice:

Recommendation 1: Educators should consider limiting the number of school-to-school transitions that students might experience. Therefore, districts might want to adopt schools with broader grade-spans, such as K-8’s or K-12’s.

Recommendation 2: School districts with multiple grade-span configurations and subsequently a large number of school-to-school transitions should put programs in place to address the adverse effects caused by these transitions.

Recommendation 3: State departments of education should be careful in the design and implementation of both accountability systems and teacher licensure programs. These programs might indirectly cause school districts to adopt narrower grade-span configurations than might be in their best interest.

Recommendation 4: School officials, especially in rural locales, should reconsider the adoption of middle school configurations. The resulting fragmentation and the disorientation it causes students to experience might off-set any possible benefits associated with the middle school practices supported by this configuration.

Recommendations for Research

The study's analysis of the effect of school-to-school transitions on student performance left a number of questions unanswered. First, although it showed the effect of the number of transitions, it did not show the effect of their placement within the K-12 span. Understanding the effect of placement, however, would enable educators and policy makers to determine whether or not it might be beneficial to use narrower grade spans at certain levels but not at other. For example, a ninth grade academy might have benefits that outweigh the adverse effects of the additional transition associated with this arrangement, whereas a kindergarten school might not.

It is also important to find out if successfully implemented instructional approaches are more common in school systems with more or fewer school-to-school transitions. For example, researchers might want to investigate if single or two-tiered school systems deploy more child-centered approaches than multiple-tiered systems. Or they might examine the extent to which district-wide reform efforts are facilitated or thwarted in districts with broader and narrower grade spans. Such research would not necessarily focus on the magnitude of the transition effect, but rather it would demonstrate some of the dynamics associated with the effect.

Acknowledging the finding from this study that multiple school-to-school transitions have negative effects on student performance, research should be conducted to determine the effectiveness of transition programs. It would be useful to know the types and number of these programs that exist. It would also be helpful to find out if certain types of transition programs are more beneficial than other types of programs.

Experimental or quasi-experimental designs might be used to explore research questions relating to the effectiveness of transition programs.

The results of this research are based solely on data relating to school districts in Ohio. As mentioned previously, the single state focus of the study may limit generalizability of results to other locations. Therefore, an important extension of this study would be to examine data from other states.

While differences among state-mandated achievement tests probably encourage the use of designs that incorporate single-state analyses, studies involving multiple states would have value. Such investigations would provide important insights about the commonalities and differences associated with state context. Information about these commonalities and differences would enable educators and policy makers to consider the features of state context that might be relevant to decisions about preferable grade span options. For example, if studies in states with many rural districts turn out to show that broader grade spans are associated with achievement advantages, policy makers in other highly rural states might want to reconsider policies that encourage district consolidation, age-specific pedagogical practices, and licensure arrangements that promote specialization based on children's developmental stages.

The findings from this study were derived from analyses with achievement data from a standardized test administered to students in the ninth and tenth grades. The cumulative effect of transitions over students' full academic careers could not be evaluated using these achievement measures, although the cumulative effect on graduation rate was assessed. Similar research utilizing a graduation test administered in

later grades would not be subject to this limitation, and could provide additional evidence about the impact of school-to-school transitions.

Surveying decision makers about why they selected specific grade-span configurations would also be a valuable study. Renchler (2000) reported that most often these decisions are made not for educationally sound reasons but for other reasons such as those relating to finances or geography. Research along these lines might examine whether educators in certain types of communities (e.g., those serving low-SES families) are more likely than educators in other types of communities to base decisions about grade-span on considerations unrelated to educational aims.

The literature on school size and school transitions would also benefit from research employing qualitative approaches. The extant qualitative literature tends to focus on specific grade-span configurations rather than examining the experiences of students who recently made a school-to-school transition. Nevertheless, qualitative analysis of students' experience of school-to-school transitions would help to explain the dynamics responsible for the transition effects reported in this study and in several earlier ones. Qualitative studies of students in districts with different transition patterns might also help to illuminate the dynamics underlying the transition effect. Researchers also might explore transition effects using longitudinal designs. Perhaps, for example, a study might compare the experiences of students in a district with multiple school-to-school transitions with the experiences of students in another district where only a few transitions were required.

Another important extension of the study would be to take a multi-level approach. This study examined transition effects only at the district level, and a multi-level study

would redress some of its limitations. It might also be able to discern if the magnitude of the transition effect depends on when it occurs. Such a study might incorporate individual level variables such as student SES and course-taking; school level variables such as cohort size and aggregate SES; and district level variables such as total district enrollment, district SES, number of school-to-school transitions, and placement of transitions.

Studies of the popularity and effects of given grade-span configurations in rural locales would also be valuable. As indicated in chapter one, there has been a general trend by many rural locales to adopt middle school configurations. This study's findings suggest that most rural locales would benefit from broader configurations. Research focusing on why rural systems have adopted the middle school configuration (particularly when that configuration turns out not to serve them well) might be useful in illuminating the political dynamics that confront rural districts.

The effects on rural communities of adopting broad versus narrow configurations might also be a productive direction for future research. For example, researchers might want to explore how decisions about grade span fit in with decisions about school consolidation. Or they might want to examine levels of parent and community involvement in schools with broader and narrower configurations. Finally, they might want to explore the economic and demographic implications of decisions to remove broader grade-span schools from small local communities, replacing them with narrower grade-span schools that serve all of the district's children. This practice is used widely in rural districts in Ohio and, on the surface, seems like it would tend to weaken school-community bonds; and when such bonds are weakened, community vitality may suffer.

Summary

The purpose of this study was to investigate the extent to which grade span, operationalized as number of school-to-school transitions, contributes uniquely to district performance. A regression model, that also included likely moderator variables, district SES, class size, district size, and the interaction between district size and SES, was employed to answer this question.

As the chapter explains, the findings of this study provide evidence that the number of school-to-school transitions does have a significant influence on district performance. In the main analyses, the number of school-to-school transitions was found to a statistically significant predictor for two of the three dependent measures, 9th (10th) aggregate achievement and graduation rate. Further analyses of the transition effect, which incorporated dummy variables measuring locale, revealed statistically significant influences of number of school-to-school transitions on all three of the dependent variables included in the study. In analysis with rural cases only, number of school-to-school transitions significant affected graduation rates.

In addition to this investigation, other studies explored the influence of grade-span configuration and/or number of school-to-school transitions on performance measures (e.g., Alspaugh, 1998; Becker, 1987; Bickel et al., 2000; Franklin & Glascock, 1998; Tucker, 1997; Wihry et al, 1992). Generally, these investigations supported the conclusion that schools with broader grade spans had higher achievement outcomes.

The current study reinforced this conclusion since it found that the number of school-to-school transitions had a negative influence on district-level performance. The study's findings about locale added to the literature. The findings showed that the locale variable functioned as a suppressor of the error associated with the grade span effect. When locale was included in the model, the number of school-to-school transitions became an even stronger predictor variable.

Based upon these findings, the researcher suggested several recommendations for practice. First, educators should minimize the number of school-to-school transitions that students experience. If a school district had several transitions then they should adopt programs to address the adverse effects caused by these transitions. In light of the study's findings, state and federal officials need to be cognizant that their decisions might influence whether local officials adopt configurations that increase the number of school-to-school transitions. Finally, the findings were particularly significant for rural educators since rural districts could be harmed by building schools with grade spans and

enrollment sizes that were not suitable given the rural context or the characteristics of the students.

Additional research about the effects of number of school-to-school transitions is still needed. To address the need for more research, the researcher provided recommendations to guide future research. Additional replications of this study would be valuable since this study was limited to Ohio data. Finding a state that had a graduation test was also recommended since a graduation test would allow a researcher to examine the transition effect for later grade levels. It was also suggested that a study, which employed a qualitative approach, would be able to examine the transition effect and provide a greater understanding as to why the number of school-to-school transitions influenced student outcomes. Furthermore, research on transitions and grade-span configurations was particularly important to rural educators, because these districts were often led by state mandates to adopt configurations that might not be appropriate for them.

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