Bartz
Maehr

ADVANCES IN
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AND ACHIEVEMENT

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THE EFFECTS OF
SCHOOL DESEGREGATION ON
MOTIVATION AND ACHIEVEMENT

# ADVANCES IN MOTIVATION AND ACHIEVEMENT

*A Research Annual*

## THE EFFECTS OF SCHOOL DESEGREGATION ON MOTIVATION AND ACHIEVEMENT

*Editors:* DAVID E. BARTZ
*Department of School Service Personnel*
*Eastern Illinois University*
*Charleston, Illinois*

MARTIN L. MAEHR
*Institute for Child Behavior and Development*
*University of Illinois, Urbana-Champaign*

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# LIST OF CONTRIBUTORS


| | |
|---|---|
| *James D. Anderson* | Department of Educational Policy Studies, University of Illinois at Urbana-Champaign |
| *David E. Bartz* | Department of School Service Personnel, Eastern Illinois University |
| *W. B. Brookover* | Urban Affairs Program, Michigan State University |
| *William J. Genova* | TDR Associates, Newton, Massachusetts |
| *William M. Gordon* | Department of Educational Leadership, Miami University |
| *Bruce Hare* | Department of Sociology, State University of New York at Stony Brook |
| *Andrew Hartman* | Institute for Child Behavior and Development, University of Illinois at Uraban-Champaign |
| *Larry Hillman* | Department of Organizational Studies, Wayne State University |

*Larry W. Hughes* — Department of Educational Leadership and Cultural Studies, University of Houston

*Ronald A. Krol* — Family Medicine Department, Medical College of Ohio

*Martin L. Maehr* — Institute for Child Behavior and Development, University of Illinois at Urbana-Champaign

*Geoffrey Maruyama* — Department of Educational Psychology, University of Minnesota

*H. Andrew Sagar* — Department of Psychology, Elizabethtown College

*Jane Schofield* — Department of Psychology, University of Pittsburgh

*Herbert J. Walberg* — College of Education, University of Illinois at Chicago Circle

# FOREWORD

The purpose of this volume is to examine what has happened to children as a result of school desegregation. Specifically, this volume focuses on the effects which desegregation has had on the motivation, achievement, and social-psychological development of black and white children.

The literature and research on desegregation are replete with contradictory and inconclusive findings. It was not our intent to give a certain perspective toward a controversial issue such as desegregation through the contributors we selected and the content they presented. Rather, our goal was to present a spectrum of perspectives based on a scholarly approach to studying the effects of desegregation on children.

Contributors were selected who could draw from a broad base of knowledge about student motivation, achievement, and social-psychological development. This base extended beyond the literature and research dealing specifically and directly with school desegregation to include a wide variety of perspectives.

It is our belief that this volume will make a significant contribution to improving the quality of education that all children—black and white—experience in desegregated environments. Hopefully, this will forward the endeavor of ascertaining conditions that are both likely and unlikely to have meaningful effects on children in desegregated schools.

David E. Bartz
Martin L. Maehr
*Editors*

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# WHAT CAUSES ACHIEVEMENT?
## AN EXAMINATION OF ANTECEDENTS OF ACHIEVEMENTS IN SEGREGATED AND DESEGREGATED CLASSROOMS

Geoffrey Maruyama

## INTRODUCTION

Since the historic *Brown v. Topeka Board of Education*[1] decision in 1954, schools have been undergoing changes designed to facilitate both the academic achievement of minority children as well as cross-racial and cross-ethnic interpersonal acceptance. Given the importance of achieving equality of educational opportunity for all and of diminishing intergroup hostility and prejudice, it is not surprising that school change has been a priority issue for educators and government officials. A considerable amount of attention and resources has been committed by both educators and social science researchers to the study of intergroup contact in interracial schools (e.g., Coleman, Campbell, Hobson, McPartland, Mood, Weinfeld, & York, 1966; Gerard & Miller, 1975; St. John, 1975; Stephan, 1978).

From the work of educators and researchers it might seem that many of the

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parameters that could improve the educational system would have been discovered. Unfortunately, for a number of reasons, relatively little progress has been made. For example, work on desegregation has suffered from over simplification; only recently have researchers stopped dealing with "desegregation" as if it were a manipulable variable having predictable effects. Additionally, the complexity of the problems of school desegregation has tended to exceed both methodological and conceptual skills of social scientists; it is no simple task to determine the ways in which school staff and community reactions, parental attitudes, housing patterns, percentage of minority students, community size, teacher preparedness, and numerous other variables act and interact to shape the outcomes of children in desegregated schools, let alone adequately measure such ways. Equally importantly, much of the research has been atheoretical, guided by idiosyncratic or naive views of how desegregation works. As a consequence of these and other factors, the effects of desegregation have been highly variable and not well understood (e.g., Stephan, 1978).

This paper attempts to help organize the desegregation literature by examining a theoretical model which has implicitly or explicitly guided much of the research on desegregation. Called social influence or lateral transmission of values, the model is drawn from early research in social psychology and received support from some of the early work on desegregation (e.g., Coleman et al., 1966).

This paper will first examine the school achievement process, embedding social influence variables within the broader array of variables which potentially impact educational achievement. Second, the theoretical framework underlying social influence processes will be presented. Third, casual modeling data analyses attempting to examine plausibility of the social influence model will be presented. Finally, in concluding, the social influence model will be reexamined, exploring specifically (a) potential causes for discrepancies between research generating the model and the findings of research in desegregated classrooms, (b) social influence and student achievement in desegregated schools, and (c) settings in which social influence processes ought to be maximized.

The data analyses are based primarily upon an elementary school sample of 1,731 black, white and Mexican-American children from Riverside, California (e.g., Gerard & Miller, 1975). The children were followed over several years as their schools underwent districtwide desegregation. Data to be reported were collected one year prior to and one and three years after desegregation.

## THE SCHOLASTIC ACHIEVEMENT PROCESS

This section will attempt to integrate the previous research which has examined antecedents of scholastic achievement. Ideally, given the emphasis of this paper, one would focus on studies that employ causal modeling techniques. Not surprisingly, however, there has been a paucity of research that has used such techniques to investigate the nature of the achievement process directly. The

fact that the techniques have only recently been modified so as to allow realistic causal models to be examined provides a partial explanation. In addition, expertise in using such techniques is not an integral part of graduate training in the social sciences. Even more important, perhaps, is that a large amount of data must be collected in order to test a causal model adequately.

Despite the lack of a substantial body of literature that isolates the variables which "cause" achievement, theorizing about the determinants of achievement abounds. Research reports suggesting plausible causal orderings are embedded throughout the literature on personality, developmental processes, education, and methodology. Unfortunately, though theorizing proliferates, due to limited sample size and/or limited investigation regarding how specific effects should fit within a general casual model, researchers have not been able to delineate the achievement process clearly. Data from the Riverside study (Gerard & Miller, 1975) illustrate the magnitude of the problem. It contained measures of at least 25 potentially distinct conceptual variables, every one of which has been hypothesized to be related to achievement by at least one social scientist. For most of these measures there is some empirical support beyond the Riverside study for a role in the scholastic achievement process. Yet it is highly unlikely that all of the variables measured contribute unique components of variance to the prediction of achievement.

This review will not attempt to integrate all available information; it will focus on studies that have employed causal models to explain the achievement process, citing studies that do not involve causal models only where they fill theoretical voids in or augment limited conceptualization of causal models. In addition, it will (a) discuss studies relating to minority background and values, (b) summarize briefly those studies that have specifically investigated the effects of desegregation on classroom processes, and (c) review past findings from the Riverside study. Before examining the results of previous studies, however, a general framework for organizing predictors of achievement will be developed.

## Predictors of Achievement

### *Background Characteristics*

In terms of temporal consideration, background characteristics such as social class, race/ethnicity, etc., should have a strong influence upon a variety of aspects of a child's life; they are obviously present from the time that the child is born. In fact, among the various predictors of scholastic achievement, their effects are perhaps the best documented.

Certainly, no one would argue that the environment prior to entering school is unimportant in determining scholastic achievement, especially early achievement. Consequently, the major problem is to define the relative importance of background characteristics in the achievement process. Consider the implications if the effects of background on achievement are immutable, that is, are predom-

inantly unaffected by variables within the school settings: equality of opportunity for all in the educational system could be achieved only when differences in scholastic achievement attributable to social class and/or ethnic/racial differences disappear. On the other hand, if the effects of background differences are not irreversible, but instead are mediated by other variables, especially variables found within the school setting, then equality of opportunity, might be brought about more simply. Background differences could be overcome by altering those variables that mediate the effects of background on scholastic achievement.

At present, there is no definitive answer to the question. Although it has not been proven that persons from certain ethnic/racial groups are innately inferior, as some would argue (e.g., Jensen, 1969), at the same time, despite occasional exceptions (Scarr & Weinberg, 1976), various attempts to raise the scholastic performance of minority children to the level of middle-class whites have been largely unsuccessful. Therefore, one aspect of the search for additional predictors of achievement involves locating variables that effectively mediate the relationship between background and achievement, especially focusing on those that can be altered more easily than can social class or ethnic/racial background.

### *Others' Acceptance and Evaluations*

In addition to social class or ethnic/racial background, two additional sets of variables that predict scholastic achievement will be discussed. The first of these involves the influence of the significant persons in a child's life—parents, teachers, and peers. The extent to which a child is approved of, favorably evaluated, and accepted by these significant others should exert an influence on his/her achievement. Likewise, the values that the child acquires from these significant others should play an important role in the achievement process.

If such influences are important, it is possible that background characteristics simply reflect the development of certain values of a child. That is, the background variables display the effects of underlying values that covary with social class; though it is actually values that produce achievement, the absence of the proper mediating "value" variables in causal models make background variables appear to be strongly related to achievement. If so, then it should be possible to improve scholastic achievement by simply changing the values that are emphasized in schoolchildren's environments, leaving their social status unaltered.

For example, if peer values prove to be the major influence on scholastic achievement in the classroom environment, then it should be possible to raise a particular child's achievement by judiciously selecting other children and placing him/her together with them.

There have been many proponents of a causal sequencing that places values in a strongly influential position. This line of thinking has been widespread among social scientists who view classroom values as a means of equalizing discrepancies in educational opportunity. For example, the monumental study

*Equality of Educational Opportunity* (Coleman et al., 1966) and a survey study of the effects of desegregation by Crain and Weisman (1972) both suggest that exposing minority and lower-class children to a majority of students holding middle-class achievement values will improve their educational performance. This will presumably occur through the oft-documented social-psychological processes of social influence (e.g., Jones & Gerard, 1967). This process, also referred to as the "lateral transmission of values," causes the minority children to internalize the norms of the majority. Their values change from those held in their home setting or by their peers in the minority school toward those that are preponderant in the predominantly white middle-class classroom.

The U.S. Commission on Civil Rights (1967) suggested that the ideal classroom for this to occur in would be predominantly white so that there is a clear set of norms. If so, the Riverside sample reported in this paper should certainly facilitate any such effects, as the proportion of minority students there was about 20%. However, in a recent reanalysis of the cross-sectional data constituting the Coleman report, Jencks and Brown (1975) find the greatest primary-grade performance "increases" among minority children in schools that are 51%-74% white. Scores of minority children in 75%+ white schools seem to decline. Thus, the effects of a particular school or classroom mix are not clear (see also Cohen, 1980).

On the other hand, it could be that peer values largely reflect teacher values. If so, then changing teacher attitudes and values could change the attitudes and values of the children and thereby strongly affect achievement. If this sequencing of influence occurs, then desegregation need not be a prerequisite for implementing changes in the values of children. Realistically, however, this view seems naive. There is probably little reason to think that teachers in white and minority schools hold different educational values, yet there are clearly differences in the academic performance of white and minority children in segregated classrooms. It seems more likely that the influences of teachers on scholastic achievement result from differences in their expectations for minority children in contrast to white children.

Values can influence scholastic achievement in two different ways. First, they can have a direct influence on achievement. Simply behaving consistently with the values that are preponderant could affect achievement. This pattern of influence would imply that the effects of values on achievement are direct. An alternative view would emphasize that the values which are internalized induce changes in personality, which then in turn produce changes in achievement. This is the causal sequencing that appears to be implied by Coleman et al. (1966), and by Crain and Weisman (1972). When suggesting that school desegregation will have beneficial effects, they do not see the benefit as resulting simply from the normative peer influence that characterizes middle-class white schools and the "lateral transmission" of these achievement values to minority students. Rather, they see peer influence as producing its beneficial effect by modifying segments of the personality concerned with achievement motivation. They em-

phasize that, in contrast to their peers in a segregated school, minority children in the middle-class white school exhibit greater internal control—a personality trait reflecting an important aspect of achievement motivation. Whereas "external" personality types see themselves as powerless to control their outcomes, "internal" personality types feel that control of their destiny resides within themselves.

If the first pattern of influence were to occur—direct normative influence on scholastic achievement—then acceptance and evaluation would provide the necessary focus of research on lateral transmission of values and achievement. On the other hand, if the second pattern—mediation of normative influence via modification of personality structures—occurs, then measures of personality that focus on aspects of achievement motivation would be essential. It is also possible for some combination of the two patterns to occur. Initially the values from the desegregated classroom would influence directly the behaviors and attitudes of minority children. Yet these values could be directly related to personality dimensions, in which case over time modifications in personality structure would follow from the values. If this last pattern occurred, the children measured shortly after desegregation might show only direct normative influence, whereas children measured later could show mediation of normative influences via personality structure.

### *Personality*

Because one line of reasoning suggests that lateral transmission of values implies modification of systems in the child's personality, it is necessary to consider in greater detail which personality dimensions should best tap the achievement process and why. As indicated, central to the values that are posited to produce achievement is achievement-related motivation. Further, there are other personality dimensions, such as self-esteem, that also might logically be expected to be related to achievement motivation and to achievement (e.g., Purkey, 1970). In effect, then, there might be a number of personality variables that are related to achievement. If the lateral transmission of values is to effectively raise the academic performance of minority children by modifying achievement motivation and other related personality traits, two types of outcomes might be expected: (a) among white children, those personality traits should be directly related to scholastic achievement; and (b) over time, desegregated minority children should show changes on these traits.

To summarize, this latter line of theorizing provides clear implications of the scholastic achievement process. First, the lateral transmission of values can be adequately supported by the data only if personality variables mediate the effects of background and acceptance and evaluation variables on achievement of whites. In other words, if personality variables are not related to the scholastic achieve-

ment process of whites, it would be difficult to believe that personality measures do in fact mediate values and thereby influence achievement. Second, as minority students internalize these standards at varying rates, there should be an increase in variability to predict achievement of minority children from personality characteristics. Although the changes of minority children on personality may be global, they should be clearest for dimensions of personality whose relationship to achievement have received strong empirical support. For example, children internalizing achievement values should develop stronger achievement motivation, become more internal in their locus of control (e.g., Crain & Weisman, 1972), become more realistic in their aspirations and self-appraisals of ability (Mischel, 1961), and develop more positive self-images (e.g., Anderson & Evans, 1974).

## The White Scholastic Achievement Process

The research on scholastic achievement most relevant to the present investigation consists of those studies that employ causal models to clarify the interrelationships among variables. Most, however, have not considered scholastic achievement as the criterion variable of primary interest but have focused instead on educational attainment. Nevertheless, they have often included some measure of achievement as an intermediate variable within the causal process. This literature will be presented by first describing the aspects relevant to the framework provided above.

A majority of the studies that employ a causal model which contains a measure of achievement have focused on occupational and educational attainment and include scholastic achievement as an intermediate variable in the attainment process. They imply that changes in the achievement process go beyond the educational system to affect the attainment process directly. Further, because achievement is temporally positioned prior to attainment, it is clear that, although information from attainment studies is relevant to the achievement process, studies of achievement can potentially provide much information that is of value for the attainment process.[2]

Duncan and his colleagues (e.g., Blau & Duncan, 1967; Duncan, 1969; Duncan & Featherman, 1973; Duncan, Featherman, & Duncan, 1972; Featherman & Hauser, 1978; Hauser & Featherman, 1977) contributed some of the relatively early research on the status attainment process. Though this research has not focused directly on academic achievement per se, some indirect inferences about the achievement process can be drawn from the "causal" models for academic attainment. This research can perhaps best be typified by the findings of Duncan et al. (1972), who concluded that academic ability and such background variables as the educational attainment of the head of household, the occupational status of the head of household, and the size of the family had important effects on educational attainment of the child. In their sample, background variables were

strongly related to academic ability; therefore, the direct "causal" effects of the background variables in the model were notably less than zero-order correlations might suggest; stated differently, the zero-order correlations include shared variance among predictors which the "causal" parameters do not include. In addition, although parental aspirations for the children were included in the model, they proved to be unrelated to educational attainment.

A second line of research which deserves mention, if only for its social impact, is that of Jencks and his colleagues (Jencks et al., 1972; Jenks et al., 1979). Among the findings, these controversial works argue for substantial effects of background characteristics on status attainment. In addition, they argue that the relationships of the school curriculum to achievement are quite limited. Nevertheless, the findings are not particularly pertinent to the present investigation, for the focus of the Jencks et al. works is on occupational attainment and earnings.

The line of research on aspirations most applicable to the present investigation is that developed by Sewell and his colleagues (Alexander, Eckland, & Griffin, 1975; Hauser, Sewell, & Alwin, 1976; Sewell, Haller, & Ohlendorf, 1970; Sewell, Haller, & Portes, 1969; Sewell & Hauser, 1972, 1975; Sewell & Shah, 1968; Wilson & Portes, 1975). As well as focusing on social-psychological measures in the attainment process, they have aggregated fallible indicators to create more meaningful variables. Although their subject populations have generally been high school seniors when first measured, making them older than the children sampled in the present paper, their model seems directly applicable to the achievement process.

Their model contains two sets of exogenous variables, that is, variables whose causes are not investigated. These are: (a) social class, indicated by some subset of the following—father's educational attainment, mother's educational attainment, occupational status of head of household, family income, number of rooms in the house divided by number of persons living in the house, number of books, number of valuable possessions; and (b) academic ability, indicated by some "intelligence" tests.[3] The variables that were causally positioned in an intermediate position within the model were: (a) past grades (self-report of); (b) influence of significant others, which represented a composite of perceived parental encouragement, perceived teacher encouragement, and perceived peer plans; and (c) aspirations.

Somewhat surprisingly, in the models of Sewell et al. there was no direct relationship between social class and academic performance; the relationship between social class and achievement was mediated by academic ability. That is, in their model the direct path between social class and achievement was nonsignificant.

In order to apply their findings to the scholastic achievement process, it seems reasonable to replace attainment in their model with current achievement. In other words, the temporal flow in their causal model from (a) past achievement to (b) influence exerted by significant others to (c) attainment seems parallel to

a causal flow from (a) past achievement to (b) influences of significant others to (c) present achievement.

If the basic model of Sewell and his associates were investigated by replacing the attainment measure with a future or present measure of achievement, we might expect achievement to be directly influenced by academic ability and/or past achievement, the influence of significant others, and expectations. In some instances (e.g., Sewell et al., 1969) the variable exerting the strongest effect on attainment was the influence of significant others. Though it is not clear whether the same strong relationship will hold for achievement measures, their finding provides an additional reason for investigating a causal model focusing on the influences of significant others.[4] Williams (1976) provides some further support for such a model. He showed that teacher expectations exert some effects on standardized achievement test performance and even stronger effects on class grades.

In a cross-sectional study of occupational aspirations and attainment, Kerckhoff (1974) examined four cohorts (sixth, ninth, and twelfth, graders as well as college graduates). In his sample of sixth-grade males (N = 528), which is comparable in some respects to the present sample, academic ability, family size, father's educational and occupational attainment, and educational and occupational expectations were correlated with class grades. Consistent with the findings of Sewell and others, academic ability was the only important background variable in his model. However, his path model focused on grades already received, which is analogous to looking at past achievement. Further, he placed expectations as stemming from grades, namely, as reflecting past outcomes. Similarly, Kerckhoff considered locus of control to reflect past achievement. Again the findings are directly applicable to the present investigation; though measures such as locus of control may reflect differences in prior scholastic achievement, they can also "cause" future performance.

Besides the attainment studies, there are also several studies that focus more specifically on achievement. In the study that takes an approach most similar to that taken in the present paper, Hauser (1972) predicted academic achievement (standardized tests), course grades, and level of aspiration from background variables. His sample consisted of whites from grades 7 to 12. He found that background variables (father's occupation, father's educational attainment, family size, family structure) predicted verbal but not quantitative skills. When measures of academic ability were included with the background variables, the effects of the background variables virtually disappeared. In addition, academic ability added a large component to prediction that was independent of background. Even with academic ability added, however, the level of prediction was not good; the variance/covariance matrix predicted from the path coefficients did not accurately re-create the observed variance/covariance matrix. Further, background, academic ability, and achievement were poor predictors of both grades and educational aspirations.