GETTING INTO HONORS OR NOT: AN ANALYSIS OF THE RELATIVE INFLUENCE OF GRADES, TEST SCORES, AND RACE ON TRACK PLACEMENT IN A COMPREHENSIVE HIGH SCHOOL

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ABSTRACT

Decisions made in middle school allocate students to different high school course levels and tracks. Because African American students are disproportionately represented in the lower level tracks of high school curriculum and because track placement affects learning and postsecondary opportunities, it is important to explore determinants of track placement. Some theories emphasize academic determinants of track placement; other theories emphasize student background variables and peer influences; and still others, racial biases among educators. Research findings have been inconsistent concerning how much disproportionate representation in lower level courses is explained by prior academic achievement variables and how much it is explained by race.

We examined the effects of race and 8th grade academic achievement variables – grades and standardized tests scores – on odds of place-

ment in different levels of 9th grade English courses in a large high school. Our findings indicated that track placement decisions were strongly determined by prior grades and test scores; race did not have a statistically significant independent effect on track placement. We identify a need for more research on the role of grades as determinants of track placement.

African American students are disproportionately represented in the lower level courses in the high school curriculum (Jones, Vanfossen, & Ensminger, 1995; Klopfenstein, 2004; Mickelson, 2001; Oakes & Guiton, 1995). In 2004, a study of 11,500 graduates based on a nationally representative sample showed that while 33 percent of Whites earned credit in AP/IB courses, only 16 percent of African Americans did so; 29% of White graduates but only 17% of African Americans graduates had graduated in an "academic concentration," as opposed to "general" or "occupational" (Planty, Bozick, & Ingels, 2006). The disproportionate representation of African American students in lower level courses is well documented. What is less certain is the degree to which academic or nonacademic factors explain disproportionate representation. If nonacademic characteristics play a significant role, what are these characteristics and to what extent does a student's race predict track placement?

The Principle of Meritocratic Selection

Formal policies of high school tracking that formally assign students to separate vocational, general, and college-bound programs within the high school are rare today (Hallinan, 2004; Lucas, 1999). However, high schools routinely offer courses with title modifiers such as "honors," "advanced," "college prep," "technical," "business," or "general." About 80 - 85% of U.S. high schools have ability grouping at the course level and various loose forms of tracking, but these estimates are approximate and ability grouping policies vary greatly among schools (Moore & Davenport, 1988; Hallinan, 2004; Johnson, 2002; Kelly, 2007). We will use the word "track" in this sense because our study focuses on the subject of high school English, one of the most commonly ability-grouped subjects, and because much research shows that students tend to remain within course levels like general or college prep as they go through high school (Oakes, 1985; Hallinan, 1996). However, our caveat is that this usage of "track" refers to a form that is more in the nature of de facto

tracking than the rigid, formalized tracking of past decades. We begin with a discussion of different perspectives on determinants of track placement.

Track placement based on academic qualifications reflects what is sometimes called the principle of meritocratic selection (Conant, 1967; Dreeben, 2002; Lucas, 1999; Mickelson, 2001). Meritocratic selection requires basing judgments leading to personnel selection or promotion decisions on relevant performance qualifications. In the case of tracking, the theoretical rationale views prior academic achievement as the variable of central relevance. In theory, instruction can be targeted more efficiently when classrooms are homogeneously grouped (Gamaron & Weinstein, 1998). Irrespective of whether homogeneous grouping works or not, it is widely practiced and so how students get placed remains a subject of considerable interest and debate, especially when racial considerations are involved.

Merit-based selection is a strongly held American value (Dreeben, 2002). It requires that decisions allocating students to selective academic programs be based on evidence predicting successful achievement in these academic programs. In schools, students' current academic performance is generally considered the most relevant criterion for recommending or selecting students for courses that are differentiated by difficulty level.

This perspective on merit-based selection is not merely normative, it is codified into law. Words like "discrimination," "bias," "favoritism," "nepotism," and "patronage" all have pejorative connotations. Anti-discrimination laws apply to schools and the workplace and are intended to insure that people are judged on the basis of relevant performance; such laws are intended to protect students and others in subordinate positions from bias and favoritism. When equal treatment does not happen, when teachers, administrators, or public officials are perceived to be violating equal treatment principles, controversies, and sometimes litigation, may erupt (Loveless, 1999; Welner & Oakes, 1996; Welner, 2001).

Much of the controversy over tracking is rooted in concerns about equal treatment and fairness in decisions that allocate students to tracks. If African American students' academic achievement scores are lower than those of whites in middle school – a common pattern – then placement decisions based solely on measureable academic criteria will result in disproportionately low representation of African American students in more advanced courses and academic tracks. This disproportionality is prevalent in American high schools. But theories and research differ in how much they attribute this disproportionality to academic qualifications versus nonacademic influences or ascriptive characteristics.

Research on Nonacademic Determinants of Track Placement

Skepticism that meritocratic selection fully explains track assignment processes in high schools underlies much of the controversy of tracking (Burris & Welner, 2005; Lucas & Good, 2001; Mickelson, 2001; Oakes, 1985; Rosenbaum, 1976; Wheelock, 1992). Mickelson (p. 221), for instance, writes:

> Assignment to tracks is based formally on multiple meritocratic criteria and choices by students and their families. In practice, however, nonmeritocratic factors influence track placement informally as well. … Consequently, the tracking process is typically far from meritocratic. Students with a wide range of academic abilities are frequently found in a particular course at a given level. At the same time, tracks tend to be racially isolated.

Wise (2002) expressed a similar view, contending that tracking disadvantaged black students' chances on the SAT. He criticized ETS's decision to add Algebra II content to the SAT and argued that

> [This decision] "can only cause alarm for those concerned about the racial score gaps; after all, tracking in schools is so pernicious that blacks, even when they score at the top of 8th grade achievement test distributions, are about 40% less likely than whites whose scores are merely average to be placed in upper-level math courses in high school."

Critics believe that the merit-based logic of tracking belies the many informal and personal influences shaping which students get into which tracks. Given the history of racial injustice experienced by African American students in public schools, a history rife with countless flagrant examples of discriminatory treatment, it is not surprising many are skeptical that meritocratic selection adequately accounts for racial disproportionality in track placements.

Supporting this skepticism, some qualitative and survey-based research finds that lower-income and minority students are typically disadvantaged in their access to information and adult advocacy on their behalf. Research by Oakes and Guiton (1995), Useem (1992), and Yonezawa, Wells, and Sema (2002) reflects this sentiment: "Perceptions of students' suitability for classes at various track levels were also influenced by race, ethnicity, and social class; at each school, racial groups had

become identified in most educators' minds with particular tracks" (Oakes & Guiton, p.17). These researchers have argued that peer effects and parental advocacy, all other things being equal, were more likely to culminate in higher track placements for white and higher SES students, while comparatively disadvantaging black and lower SES students, at least partially through the confounding effects of social class.

Lucas and Good (2001, p.141) noted that, "Findings concerning the role of race in track placement are anything but clear." Research on determinants of track placement has produced inconsistent results. Some studies are consistent with the meritocratic model, suggesting that once prior performance is taken into account, the probability of black students' representation in lower level courses is equivalent to that of white students (Gamoran & Mare, 1989; Garet & Delany, 1988; Hallinan, 1992; Jones et al., 1995). Other studies, though, disagree (see above, and also, Alexander & McDill, 1976; Klopfenstein, 2004; Mickelson, 2001). Overall, the number of studies remains relatively small with mixed findings, although the preponderance of evidence indicates that prior achievement in most cases accounts for racial disproportionality in track placements.

Methodological and data access difficulties limit the supply of good evidence on this question. A significant shortcoming in most studies is reliance on students' self-reports of track placement while they are in high school (e.g., see, Alexander & McDill, 1976; Gamoran & Mare, 1989; Jones et al., 1995; Lucas & Good, 2001). While Gamoran and Mare (1989) indicated that most students accurately classified themselves, unknown error is derived from those students who are either wrong or are reporting their aspirations, not their "objective" track placement.

A second concern is with studies collapsing multiple levels into college preparatory versus non-college preparatory courses. This dichotomous classification is necessary to simplify the measure for student respondents and because different schools have different labels for different tracks and courses levels. High school case studies reveal curriculum structures and tracking practices to be complex and not easily characterized (Oakes & Guiton, 1995; Yonezawa, Wells, & Sema, 2002). These methodological shortcomings dictate caution in interpreting results based on large survey-based data sets.

A third limitation of existing research is that most studies have no measure of prior grades. (Only the 1992 Hallinan study has data on prior grades – grades in 7th grade are used as a predictor of 8th grade course level placement.) Survey-based data sets used in the large scale national

studies ask students to report their own *current* "typical" grades. The self-reporting not only introduces an unknown degree of bias and error, but, also, current grades cannot be viewed as a causally prior determinant of track placement.

Grades are a critical variable in determining track placement, but have only been examined in one study. Teachers and counselors quite naturally consider a student's prior grades as a predictor variable in guidance recommendations for entering vocational, college prep, or honors coursework in high school (Delany, 1986), but as discussed earlier, racial considerations might also influence recommendations, even if unwittingly. Thus, it is essential to look at these factors because where students start in high school – i.e., what course level – is a main determiner of the general path of courses they end up taking all the way through high school (Garet & Delany, 1988; Lucas & Good, 2001; Oakes, 1985). There is clearly a need for more fine-grained, case study-type research based on comprehensive locally derived data sets (Heck, Price, & Thomas 2004; Lucas & Good, 2001). That is the intent of this study.

Research Methods

This study examined track placement predictors in a district with two middle schools and a high school. We examined predictors in four consecutive cohorts of students as they moved from 8th grade to 9th grade in the subject of English.

THE SAMPLE

The high school where this study was conducted was a typical, comprehensive high school in a mid-size community of about 35,000 people. About 10% of the households are at or below poverty status; between 20% and 25% of the adults have a bachelor's degree or higher. The district covered several small towns and rural communities. The community is a mixture of professionals, small business people, blue-collar workers, clerical workers, and farmers. The school and community were growing at a moderate pace in population and ethnic diversity. While the high school's enrollment varied slightly from year to year, during the years of this study's data collection (2000 – 2004), the school's enrollment was close to 1,100 each year, with about 75% white and 17% African American (other = mostly Hispanic); 27% of the students are on free lunch.

In any high school there is always the possibility of an entering freshman cohort unusual in some respects – unusually high achievers,

unusually low achievers, or unusually homogeneous or heterogeneous groups. Using four consecutive high school cohorts (n=1,010) greatly strengthened generalizability by essentially eliminating the possibility of anomalous patterns that might occur in one unusual cohort. Studying four cohorts gave us confidence that our sample was representative of the theoretical universe of students experiencing this high school's English curriculum.

At the same time, this study is limited by being based in one setting, a single school. Atlantic Groves is a typical high school, but it is clearly most representative of schools and communities with the similar characteristics. Atlantic Groves is likely to be most *un*representative of small charter high schools, urban inner core high schools, or rural high schools. Hence, generalizations from this study should be made with these understandings and qualifications. We view this study as contributing an additional case to a small but growing body of school-level analyses that explore factors that shape the allocation of students to tracks and ability groups.

STUDENT PLACEMENT POLICIES AND HIGH SCHOOL COURSE LEVELS

Registration for high school courses at Atlantic Groves was in spring. Following district policy, toward the end of 8thgrade, students received high school course recommendations from their middle school teachers. The process began with guidance staff giving the high school Course Selection Guide to 8th graders along with a presentation on high school courses and different course options and course levels (general, college prep, honors/AP). For the core academic subjects, the students' middle school teachers made a recommendation on a form that the students took home for discussion with parents or guardians. The course selection sheet had to be signed by the parent/guardian and returned to school. Parents were allowed to request different course levels.

Teachers at Atlantic Groves made course placement recommendations based mainly on students' grades, but grades were not the only determinant. The 8th grade English teachers reported that their recommendations also considered effort, writing ability, and commitment. Additionally, when parents requested a higher level placement, the school defers to parental requests. Honors level placements were regulated by more specific criteria: students needed a final grade on the numerical scale of 90 or better (i.e., A or very high B) or if they had a score of 85 to 90, they also needed to score above the 90th percentile on the state assessment test in reading. The teachers said that they tried to recom-

mend the highest level at which they believed the student could be successful.

MEASURES AND ANALYTICAL STRATEGY

We examined the extent to which three different factors predicted placement in different levels of ninth grade English classes: a.) End-of-course grades in 8th grade English, based on the numerical system widely used throughout public schools (93-100 = A, etc.); b.) State assessment test scores in 8th grade; and c. racial classification as identified in the district student information system, which was coded as: 1=Black and 0= White.

The State assessment test, administered annually in late March, was designed as part of the state's standards-based education reform in the 90s and was aligned with the state's curriculum framework for English Language Arts. This standardized test contained both multiple-choice and constructed response items, and had both nationally normed and criterion-referenced items. The test produced an equal interval scale score ranging from 390 to 645 with a mean of 528 and a standard deviation of 37.

All students were assigned to one of three course levels in 9th grade: low (general English), middle (CP English) and high (Honors/AP) academic track. We coded the outcome variable, 9th grade track placement, in two ways for two different models. For the first model, 9th grade track was dummy-coded into: low track (coded 1) versus midde or high (coded 0). This tested comparative probabilities of placement in "low" versus "not low" track. For the second model, 9th grade track placement was coded as low or middle track (coded 1) versus high track (coded 0). This compared probabilities of placement in either "low or middle" versus "high" track (Honors and AP).

Because our dependent variable was dichotomous, our analysis used direct-entry (simultaneous) logistic regression analysis (Keith, 2006; Tabachnick & Fidell, 2007). Logistic regression yields estimates of the probability of an event. Our models tested whether black and white 8th graders had the same or different probabilities of track placement when we took account of their 8th grade academic performance (test scores and English course grades). The central question was this: If we control for 8th grade test scores (state reading assessment test) and 8th grade grades (English), do black students still have a higher probability of placement in lower level high school English courses?

Prior to our analyses we performed regression diagnostics to evaluate whether our statistical models met underlying assumptions (Meyers,

Gamst, & Guarina, 2006; Tabachnick & Fidell, 2007). Analyses revealed no univariate or multivariate outliers. Further evaluations were also satisfactory regarding the absence of influential cases and multicollinearity.

Results

Table 1 presents descriptive statistics (means, standard deviations, frequency counts) for the predictor and outcome variables. The mean 8th grade score on the state test (STA) was 528, with a standard deviation of 37; the mean grade on the numerical grading scale was 86 (a low B was the average grade for students in 8th grade English), with a standard deviation of 10. Note that, for the sake of simplicity, when we refer to "test scores" in the narrative below, we are referring to the State Test of Achievement, which is denoted as STA in the tables.

Table 1 Distributional Characteristics and Frequency Counts for the Academic Tracking and the Predictors

	Distributional Characteristics		
Variable	***M***	***SD***	**Frequency**
8th Grade STA Score	528.43	37.16	
8th Grade STA Score (White)	535.35	34.01	
8th Grade STA Score (Black)	498.98	35.62	
8th Grade Teacher Grading	85.54	9.902	
Race/Ethnicity			
White			778 (81%)
Black			182 (19%)
Academic Tracking			
Upper			136 (14.2%)
Middle			530 (55.2%)
Lower			294 (30.6%)

Note: M = mean, *SD* = standard deviation, *N* = 960.

STATE TEST OF ACHIEVEMENT (STA) SCORES AND RACE

Table 2 presents regression coefficients (B), Wald statistics, significance levels, odds ratios, and 95% confidence limits for the odds ratio for each predictor for both the two-predictor and three-predictor models. The odds ratios attach probabilities to track placement based on values of the predictor variable. We compare the odds of getting placed into the low level track (defined two different ways) for the black students versus the white students, and we do this adjusting for the two other predictor variables (test scores and grades).

Table 2 Regression Analysis Summary for Variables Predicting Low Academic Track

					95% CL for Odds Ratio	
Predictor	***B***	**Wald**	***P***	**Odds Ratio**	**Lower**	**Upper**
Race (Black)	.654	7.741	.005	1.923	1.213	3.048
8th Grade STA Score	-.058	176.577	.001	.944	.936	.952
Constant	28.930	165.820				
Race (Black)	0.469	2.807	.094	1.599	.923	2.767
8th Grade STA Score	-.054	101.620	.001	.948	.938	.958
8th Grade Teacher Grading	-.117	63.494	.001	.890	.865	.916
Constant	36.416	144.323				

Note: B = unstandardized coefficient, *N* = 960.

The first regression model in Table 2 includes just two predictors of track placement: race and 8th grade test scores. This model accounts for 54.5% of the total variance (based on the Nagelkerke pseudo R^2). This provides a statistically significant improvement over the constant-only model that has no predictors and just an intercept (x^2 = 426.34, df = 2, p = .001).

To determine effect size, we converted the pseudo R^2 into Cohen's (1988) f^2 statistic, where .02 equals a small effect size, .15 equals a medium effect size, and. 35 and above equals a large effect. The f^2 of 1.98

shows a large effect size of both test scores and race as variables discriminating between placements in the low versus middle/high tracks.

Predictive success was evaluated for cases used in the development of the model. Overall classification accuracy was 82.4%. Sensitivity was 61.4% while specificity was 91.5%. In the current set of analyses, sensitivity refers to the model's ability to correctly identify individuals with low achievement. Specificity, on the other hand, is the model's ability to correctly identify individuals with middle or high achievement (Kraemer, 1992).

USING THREE PREDICTOR VARIABLES: TEST SCORES, GRADES, AND RACE

Grades, scores, and low track placement. Adding the third-predictor (8th grade grades) to the model increased the percentage of explained variance to 64% and significantly improved the fit over the two-predictor model (x^2 = 437.34, df = 3, p = .001). With the third predictor in the model, race was no longer a significant predictor of low track placement (p = .094 based on Wald test of significance). Once we accounted for the students' grades in 8th grade and their test scores, their probability of placement in the low academic track was not affected by whether they were black or white. (Black students' probability remained higher, but the effect size did not achieve statistical significance.)

The odds ratios in Table 2 provide estimates of the probabilities of track placement for students based on specified values of the predictor variables (8th grade grades and test scores). The odds ratios for the "test score" and "grades" variables are .95 and .89 respectively. This odds ratio of .95 for the test score variable means that students who obtained a test score one *SD* below the mean were about 35 times more likely to be placed in the low academic track than students at the mean (mean score on the state test = 528). Lower grades also significantly increased the probability of lower track placement. Students with 8th grade grades one *SD* (9.9) below the mean were 8.8 times more likely to be placed in the low academic track than students who scored at the mean for grades (85.5).

The analyses just reported examined probabilities of placement in the bottom track ("low"); next, we report probabilities of placement in "low/middle" versus "high" (i.e., Honors & AP).

Grades, scores, and low and middle track placement. A second model examined the probability of track placement in either the low or middle track versus the upper (high) track (Table 3). These analyses revealed the same pattern of results as above. Once again the two-predictor model with just race and test scores provided a statistically significant improve-

ment over the constant-only model (x^2 = 250.77, df = 2, p = .001). The Nagelkerke pseudo R^2 indicates that the model accounts for approximately 44.1% of the total variance. The pseudo R^2 was converted to Cohen's (1988) f^2 statistic. The obtained f^2 (.79) suggests a large effect size for the predictors as a set. Predictive success was evaluated and shows an overall classification accuracy of 87.1%. Sensitivity is 96.5% while specificity is only 32.0%.

Table 3 Regression Analysis Summary for Variables Predicting Low and Middle Academic Track

					95% CL for Odds Ratio	
Predictor	***B***	**Wald**	***P***	**Odds Ratio**	**Lower**	**Upper**
Race (Black)	1.670	4.638	.031	5.313	1.162	24.295
8th Grade STA Score	-.058	116.139	.001	.941	.931	.952
Constant	34.762	123.173				
Race (Black)	1.348	2.825	.093	3.850	.799	18.546
8th Grade STA Score	-.048	51.185	.001	.953	.940	.966
8th Grade Teacher Grading	-.244	46.221	.001	.784	.731	.841
Constant	50.584	99.758				

Note: B = unstandardized coefficient, *N* = 960.

With the third predictor in the model (grades in English, 8th grade), race was no longer a significant predictor of low track placement (p = .093 based on Wald test of significance). Accounting for the students' grades in 8th grade and their 8th grade test scores, their probability of placement in either the low or middle versus the upper level track was not affected by whether they were black or white. Put differently, black students did not have a lower probability of placement in the upper track once their 8th grade grades and 8th grade test scores were taken into account.

The three-predictor model provides a significantly improved fit over the two-predictor model (x^2 = 292.13, df = 3, p = .001). In addition, the

pseudo R2 improves to 56.6%. The odds ratios are .95 and .78 for test scores and 8th grade grades. Students who obtained a test score one *SD* below the mean were 35.4 times more likely to be placed in the low or middle academic track than students who scored at the mean (528) on the state's test. Students who obtained teacher grades one *SD* (9.9) below the mean were 7.8 times more likely to be placed in the low or middle academic track than students who scored at the mean for grades (85.5).

Summary And Conclusions

Atlantic Groves high school, like most American high schools, offers courses at different levels. In English, the courses in 9th and 10th grade are in four levels: general, CP, honors, and AP. We combined AP and honors, collapsing the four levels into three, coded as low, medium, and high. Consistent with patterns in many schools, there were disproportionately high numbers of African American students in Atlantic Groves' lower level courses and disproportionately low numbers in the school's more advanced courses.

Students were recommended to course levels in 9th grade English by their 8th grade English teachers, but the final determination required parental consent. In late spring in 8th grade the students got a high school course selection guide as well as teacher guidance on course choices for high school. Their teachers recommended courses on a form that the students took home for a parental signature (if the parent/guardian agreed) or the parent could request a different course placement.

The purported rationale for tracking is to match students' ability levels with course requirements and expectations. The theoretical justification – meritocratic selection – prescribes course placements based on academic criteria, while proscribing selection based on ascriptive and nonacademic characteristics like race, social class attributes, or personality. However, many academics and educators are skeptical that the meritocratic model plays out consistently in practice. This skepticism derives from over a half century of de jure segregation of African Americans in public education, continuing forms of racial prejudice in schools and society, and the observable fact of disproportionately high enrollments of African American students in lower track courses.

Our findings, based on four consecutive cohorts of students going from 8th grade into a large comprehensive high school, indicate that track placement decisions are strongly determined by grades and test scores; race did not have a statistically significant effect on track placement. Because the race coefficient was not statistically significant in either of the

models adjusting for test scores and grades, this study does not yield evidence supporting the ascriptive model of track placement, if we assume grades are fairly and appropriately assigned by teachers.

This study shows the critical importance of including grades in the model. Few studies have this information. Some studies without prior grades in the model have found black students overrepresented in lower tracks, even after adjusting for standardized test scores (Klopfenstein, 2004; Mickelson, 2001). These studies suggest ascriptive characteristics may influence teachers' or even students' own decisions in ways that deter black students from placement in college prep or honors level courses. However, other studies do not find this. In either case, track placement research that omits prior grades misses a very critical variable. Grades are important: whether the teacher, the student, or the parent is making the decision about what "level" of course to take next year or what "level" of program to enroll in, the decision will certainly take into consideration the student's current or recent academic grades. So, to omit this variable in research on determinants of track placement omits critical information.

Because tracking policies, processes, and outcomes are complex, more school-based studies are needed. Researchers must have longitudinal, student-level transcript data including grades and students' scores on curriculum aligned standardized tests; codes for of courses and track structures must be accurate and precise. Our study utilizes an excellent data set, but is just one school. Research is needed with larger samples of schools in multiple districts.

Tracking is a controversial practice and we would be remiss not to address the prevailing sentiment against the very existence of tracks. If high school tracks did not exist, then there would be no debates over the equity and outcomes of tracking placement decisions. But tracks do exist. Maybe not "Tracking" in the sense of the rigid, deterministic formally differentiated programs of decades ago, but courses in different levels certainly do exist in most large high schools; and it is well established that most students who start in one level, remain in that level throughout high school. Thus, important "placement" decisions are made in 8th grade, whether we want to call this "track assignment" or a "course recommendation." And the same recommendation processes and placements operate as students go from 9th grade to 10th grade and on. This structural reality of the organization of high school curriculum inevitably, unavoidably raises questions about equity in the determinants of these placement decisions. As long as there are distinguishable course levels and tracks,

we need to understand the determinants of placements because these placement decisions have high stakes for students' futures.

References

Alexander, K., and McDill, E. (1976). Selection and allocation within schools: Some causes and consequences of curriculum placement. *American Sociological Review, 41* (6), December, 963-80. Burris, C. & Welner, K. (2005). Closing the achievement gap by detracking. *Phi Delta Kappan, 86,* (8), April, 594-597.

Burris, C. & Welner, K. (2005). Closing the achievement gap by detracking. P*hi Delta Kappan, 86,* (8), April, 594-597.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd Ed.). Hillsdale, NJ: Lawrence Erlbaum Associates, Inc.

Conant, J. B. (1967). The comprehensive high school in America: A second report to interested citizens. New York: McGraw-Hill.

DeLany, B. (1986). *Choices and chances: The matching of students and courses in high school.* Unpublished doctoral dissertation, Stanford University.

Dreeben, R. (2002). *On what is learned in school.* Clinton Corners, NY: Percheron Press, Eliot Werner Inc.

Gamoran, A. and Mare, M. (1989). Secondary school tracking and educational inequality: Compensation, reinforcement, or neutrality? *American Journal of Sociology, 94* (5), March, 1146–1183.

Gamoran, A. & Weinstein M. (1998). Differentiation and opportunity in restructured schools. *American Journal of Education, 106* (3), May, 385-415.

Garet, M. & Delany, B. (1988). Students, courses, and stratification. *Sociology of Education, 61* (2), April, 61-77.

Garson (2007). Regression analysis from *Statnotes: Topics in Multivariate analysis.* Retrieved 6-29-07 from: http://www2.chass.ncsu.edu/garson/pa765/statnote.htm

Hallinan, M. (1992). The organization of students for instruction in the middle school. *Sociology of Education, 65,* (2), April, 114-127.

Hallinan, M. (1996). Track mobility in secondary school. *Social Forces, 74* (3), 983-1002.

Hallinan, M. (2004). Whatever happened to the 'detracking' movement? *Education Next 4*(4), 72-76.

Heck, R. H., Price, C., & Thomas, S. (2004). Tracks as emergent structures: A network analysis of student differentiation in a high school. *American Journal of Education,* 110, 32-352.

Johnson, K. (2002). Can Teachers Reach Every Kid? Retrieved 3/12/04 from http://www.macalester.edu/courses/educ59/PIE/Johnson-PIE.htm

Jones, J., Vanfossen, B., & Ensminger, M (1995). Individual and organizational predictors of high school track placement. *Sociology of Education, 68* (4), 287-300.

Keith, T. Z. (2006). *Multiple regression and beyond.* Boston: Pearson.

Kraemer H. C. (1992). *Evaluating medical tests: Objective and quantitative guidelines.* Newbury Park: Sage.

Kelly, S. (2007). The contours of tracking in North Carolina. *The High School Journal, 90* (4), April/May, 15-31.

Klopfenstein, K. (2004). Advanced placement: Do minorities have equal opportunity? *Economics of Education Review, 23,* (2), 115-131.

Lareau, A. (1989). *Home advantage: Social class and parental intervention in elementary education.* New York: Falmer Press.

Loveless, T. (1999). *The tracking wars: State reform meets school policy.* Washington, D.C.: Brookings Institution Press.

Lucas, S. (1999). *Tracking inequality: Stratification and mobility in American high schools.* NY: Teachers College Press.

Lucas , S. & Good, A. (2001). Race, class, and tournament track mobility. *Sociology of Education, 74* (2), April, 139-156.

Meyers, L. S., Gamst, G., & Guarina, A. J. (2006). *Applied multivariate research: Design and interpretation.* Thousand Oaks, CA: Sage.

Mickelson, R. (2001). Subverting Swann: First- and second-generation segregation in Charlotte-Mecklenburg schools. *American Educational Research Journal, 38* (2), Summer, 215-52.

Moore, D., & Davenport, S. (1988). The new improved sorting machine. Madison, WI: University of Wisconsin, National Center on Effective Secondary Schools (ERIC Document Reproduction Service No. ED 316 942).

Oakes, J. (1985). *Keeping track: How schools structure inequality.* New Haven, CT: Yale University Press.

Oakes, J. & Guiton, G. (1995). Matchmaking: The dynamics of high school tracking decisions. *American Educational Research Journal, 32,* Spring, 3-33.

Parsons, T. (1959). The school class as a social system: Some of its functions in American society. *Harvard Educational Review 29,* 297-318.

Planty, M., Bozick, R., and Ingels, S.J. (2006). Academic pathways, preparation, and performance – A descriptive overview of the transcripts from the high school graduating class of 2003–04 (NCES 2007–316). U.S. Department of Education, National Center for Education Statistics. Washington, DC: U.S. Government Printing Office.

Rosenbaum, J. (1976). *Making inequality: the hidden curriculum of high school tracking.* NY: Wiley.

Stevens, J. P. (2002). *Applied multivariate statistics for the social sciences* (4th ed.): Mahwah, New Jersey: Lawrence Erlbaum. Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th. Ed.). Boston: Pearson. Useem, E. (1992). Middle schools and math groups: parents' involvement in children's placement. *Sociology of Education, 65* (4), October, 263-280.

Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th. Ed.). Boston: Pearson.

Useem, E. (1992). Middle schools and math groups: parents' involvement in children's placement. *Sociology of Education, 65* (4), October, 263-280.

Welner, K. & Oakes, J. (1996). (Li)ability grouping: the new susceptibility of school tracking systems to legal challenges. *Harvard Educational Review, 66* (3), Fall, 451 – 471.

Welner, K. (2001). *Legal rights, local wrongs: When community control collides with educational equity.* Albany, NY: SUNY Press

Wheelock, A. (1992). *Crossing the tracks: How "untracking" can save America's schools*. New York: New Press.

Wise, T. (2002, August 12). Failing the test of fairness: institutional racism and the SAT. Z-Net Daily Commentaries. Retrieved from http://www.zmag.org/Sustainers/content/200208/12wise.cfm

Yonezawa, S., Wells, A., and Sema, I. (2002). Choosing tracks: 'Freedom of choice' in detracking schools. *American Educational Research Journal, 39,* 7-67.