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CYNTHIA WINSTON, JACQUELYNNE S. ECCLES, ANN MARIE SENIOR & MINA VIDA

The utility of expectancy/value and disidentification models for understanding ethnic group differences in academic performance and self-esteem

Der Nutzen von Erwartungs x Wert- und Disidentifikationsmodellen für das Verstehen von Differenzen zwischen ethnischen Gruppen in der Schulleistung und im Selbstwert

Zusammenfassung: Die niedrigen Schulleistungen von ethnischen Minderheitsgruppen haben in den Vereinigten Staaten zu großer Besorgnis geführt. Wir präsentieren Befunde aus zwei Longitudinalstudien über die Adoleszenzentwicklung, die zwei motivationale Erklärungen für die niedrigen Schulleistungen schwarzer Jugendlicher in Beziehung zueinander setzen: Die eine gründet auf Erwartungs x Wert-Modellen, die andere auf Disidentifikationsmodellen. In beiden Studien war das Begabungsselbstkonzept schwarzer Schüler weniger mit der tatsächlichen Leistung und mit dem Selbstwert verknüpft als bei weißen Schülern. Nach einer Disidentifikationstheorie resultieren diese Differenzen aus der selbstwertdienlichen Tendenz von Personen, ihren Selbstwert in denjenigen Fächern von den Indikatoren tatsächlicher Leistung zu dissoziieren, in denen sie mit Diskrimination und Stereotypen negativer Begabung konfrontiert sind. Dadurch wird ein Schutz vor den negativen Auswirkungen der Diskrimination aufgebaut. Allerdings schränkt Disidentifikation auch die Möglichkeit ein, daß Erfolge in diesen Fächern psychologisch positive Auswirkungen haben. Diese Theorie könnte sich als nützlich erweisen für das Verständnis niedriger Leistung bei benachteiligten und stigmatisierten ethnischen Minderheiten in verschiedenen Kulturen.

Summary: Major concerns have been raised in the United States of America about the underachievement of students from several ethnic minority populations. We present findings from two longitudinal studies of adolescent development that relate directly to two different motivational perspectives on the underachievement of African-American adolescents: One based on expectancy/value models, and one based on disidentification models. In both studies, the African-American's students' academic ability self-concepts and academic performance were not as highly linked to either their academic achievement or their self-esteem as those of European-American students. These differences, according to disidentification theories, result from the tendency of individuals to disassociate their self-esteem from performance indicators in domains in which they face discrimination and negative ability stereotypes in order to protect their self-esteem. As a result, they are protected from negative, discriminatory experiences. However, disidentification also lowers the potential psychological benefits they can obtain from succeeding these domains. This theory could prove useful in understanding the underachievement of disadvantaged and stigmatized ethnic minorities in other cultures.

1. Introduction[1]

Major concerns have been raised in the United States of America about the underachievement of students from several ethnic minority populations; most notably African-American and Hispanic students. Compared to European-American students, adolescents in these two groups score lower on standardized tests of academic achievement, earn lower grades, and are less likely to graduate from high school and to attend college (NSF 1995). These differences are especially marked for both performance and participation in math and science education (NSF 1995). A wide range of possible explanations have been offered, ranging from motivational differences tied to both cultural and social class dynamics to overt discrimination and inequitable educational experiences (see Graham 1994; NSF 1995; Ogbu 1992; Stevenson et al. 1990; Steele 1992). In this paper, we present findings from two longitudinal studies of adolescent development that relate directly to two different motivational perspectives on the underachievement of African-American adolescents: (a) A perspective based on expectancy-value models of achievement behavior, and (b) a perspective based on disidentification models of academic achievement.

Both of these models stress the importance of self-perceptions and values as determinants of achievement and as coping mechanisms to defend one's self-esteem. According to expectancy value models of achievement, both academic performance and educational enrollment patterns are directly influenced by the confidence individuals have in their academic abilities and the value they place on both academic activities (like doing homework and enrolling in specific courses) and academic competence (Bandura 1994; Eccles [Parsons] 1983; Harter 1985; Marsh 1990; Skinner 1995). Extending this model to the realm of ethnic group differences leads to the prediction that underachievement could result from ethnic groups differences in either confidence in one's academic abilities or the value placed on different types of achievement. Similarly, according to disidentification mod-

els of ethnic group differences in achievement, group achievement differences may result from group differences in the value attached to achievement in different domains. Disidentification theories also suggest that individuals will disassociate themselves from those achievement domains in which they believe they face discrimination and inequitable treatment in order to protect their self-esteem (see Ogbu 1992; Steele 1992). In this paper, we present findings relevant to both of these sets of predictions.

1.1. Expectancy/value models of achievement

Scholars have done extensive research to further our understanding of individual differences in such school-related achievement outcomes as grades, academic engagement/motivation, and course choice. One model, in particular, has been useful in understanding both individual differences and group differences – the Eccles et al. Expectancy-Value Model of Achievement-Related Choices (Eccles [Parsons] 1983). Since this model was originally proposed as a framework for studying gender group differences in both performance and participation in math and science, it seems appropriate to test its utility as an explanation for ethnic group differences in academic achievement. Extensive evidence supports the importance of both expectancy-related self-perceptions and task value for predicting both individual differences and gender differences in academic achievement among European-American students (Bandura 1994; Eccles, Wigfield & Schiefele in press; Marsh 1990).

Much less work has been done assessing the relevance of these self- and task-beliefs for explaining ethnic group differences in achievement. But, by and large, this work has documented a positive association between expectancy-related beliefs, like self-concept of ability and personal efficacy, and subsequent academic performance of African-American students (e. g., Jordan 1981; House 1993). However, contrary to what one might expect, recent research on competence beliefs and expectancies has revealed more optimism among African-American children than among European-American children, even though the European-American children are achieving higher marks (e. g., Stevenson et al. 1990). But more importantly, in Stevenson et al. (1990) the European-American children's ratings of their ability related significantly to their performance, whereas the Afri-

can-American children's did not. Graham (1994) suggested the following explanations:

(a) African-American and European-American children may use different social comparison groups to evaluate their own abilities;

(b) African-American children may say they are doing well to protect their general self-esteem, and may also devalue, or disidentify with, academic activities at which they do poorly in order to protect their self-esteem.

However, neither of these explanations has been adequately tested. If African-American children's competence-related beliefs indeed do not predict their school performance, then we must reconsider how relevant expectancy models are for understanding these children's academic achievement.

Much less is known about the value side of expectancy/value models. There have been very few ethnic comparative studies specifically focused on the kinds of achievement values considered to be central by expectancy value theorists such as Eccles, Wigfield, and their colleagues. Studies of minority children's achievement values have focused instead on the broader valuing of school by minority children and their parents. In general, these studies show that minority children and parents place high value on schooling and have very high educational aspirations for their children (e. g., Stevenson et al. 1990). However, the many difficulties associated with poverty (McLoyd 1990) make these educational aspirations difficult to attain. So once again, external constraints on choice may limit the utility of expectancy/value models of achievement for explaining the academic underachievement of certain ethnic groups.

1.2. Ethnicity and academic disidentification

Researchers interested in ethnic and racial differences in achievement have proposed other models linking social roles, competence-related beliefs and values to school achievement. For example, Steele (1992) proposed stereotype vulnerability and disidentification to help explain the underachievement of African American students: Confronted throughout their school career with mixed messages about their competence and their potential and with the widespread negative cultural stereotypes about their aca-

demic potential and motivation, African-American students should find it difficult to concentrate fully on their school work due to the anxiety induced by their stereotype vulnerability (for support see Steele & Aronson 1996). In turn, to protect their self-esteem, they should disidentify with academic achievement – leading to both a lowering of the value attached to academic achievement and a detachment of one's self-esteem from both positive and the negative academic experiences. In support, several studies have found that academic self-concept of ability is less predictive of general self-esteem for some African-American children (Bledsoe 1967; Hare 1977).

Although several investigators found no evidence of greater disidentification with school among African-American students (e. g., Steinberg et al. 1992; Taylor et al. 1994), several studies have shown that disidentification, particularly as a result of inequitable treatment and failure experiences at school, does undermine achievement and academic motivation (e.g., see Finn 1989; Taylor et al. 1994). It is likely that some students, particularly members of involuntary minority groups, will have these experiences as they pass through the secondary school system and, as a consequence, will disassociate their identity from academic experiences. If so, then their self-esteem should be less strongly related to their academic self-concepts and performance than the self-esteem of European-American students who are less likely to face negative, humiliating experiences at school due to their ethnic group membership.

1.3. Goals

In this paper, we present the findings from two longitudinal studies of adolescent development that include both African-American and European-American students and indicators of expectancy and value-related self- and task-perceptions as well as indicators of achievement and self-esteem. We use these indicators to evaluate predictions regarding ethnic differences in achievement derived from both an expectancy-value model and a disidentification model perspective.

Both studies test the usefulness of expectancy-value theory in explaining the achievement of African-American adolescents. Based on strong evidence that one can not distinguish empirically between ability self-concepts and expectations for success (Eccles & Wigfield 1995), we have used an indicator that includes both ability self-concepts and expectations rather than a measure of expectations for success alone. Consequently, the expectancy component in this paper is operationalized in terms of students' general confidence to perform well in school subjects. The value component is operationalized in terms of the perceived personal utility of academic success. Achievement is operationalized in terms of course grades in both studies and as course enrollment plans in the second study. In addition, since there is such controversy about the causal direction of the relations between the psychological predictors and achievement, we control for Time One courses grades in the regression equation in both studies. Using this strategy, we test the extent to which self-concept of ability and valuing of education predict changes in grades over time. We ask two fundamental questions:

(a) Do self-concept of academic ability and valuing of education predict in the hypothesized direction to changes in course grades in both African-American and European-American adolescents?

(b) Do expectancies and values predict equally well in these two populations?

Next, in order to explore the disidentification model, we assess the link of ability self-concepts in three domains (sports, school, and social) to self-esteem. Researchers who have theorized about the link between ability self-concepts and more global self-esteem are agreed on two basic facts: (a) self concepts are both differentiated by domain and hierarchically integrated into more global self-constructs, and (b) although self-esteem is likely to be related to these more global self-constructs, the relation of any one particular ability self-concept to self-esteem is likely to vary across individuals and groups, depending on the value attached to competence in each specific domain (e. g., Eccles et al. 1993; Eccles [Parsons] 1983; James 1963/1890; Marsh & Shavelson 1985). Consequently, in both studies we used differentiated ability self-concept measures to predict to a more global indicator for general self-esteem. We ask two questions:

(a) Are there ethnic group differences in the magnitude of each of these self-concepts?
(b) Do these self-concepts relate similarly to self-esteem in the two ethnic groups?

2. Study 1

2.1. Method

The participants in Study 1 are 976 adolescents who live in a county just outside of Washington D.C. Of these, 544 are African-American (294 are males and 250 are females) and 432 are European-American (203 are males and 233 are females). The distribution of family income in the two groups is approximately equal, although the African-American sample had a slightly lower mean level ($ 45 000 versus $ 50 000 per year). Data were collected in the adolescents' homes using both a face-to-face interview and a self-administered questionnaire. Data were collected at two time points: Wave 1 was collected during the first half of the adolescents' seventh grade school year; Wave 2 was collected in the five months following the end of the adolescents' eighth grade school year.

The questionnaires and face-to-face interviews contained a wide assortment of measures of parental involvement, perceptions of teacher expectations, values, peers, social support, after-school activities, mental health, and other school related behaviors and outcomes. Most questions were answered on a five or seven point Likert-type scale. The analyses reported here focus on the following measures of academic self-concept of ability, sport self-concept of ability and social self-concept of ability, educational value, grade reports, and self-esteem:

Self-concept of academic ability was measured at Wave 1 using four items assessing students' perceptions of their ability in math and other school subjects (e. g., How good are you at math?). The scale has very good internal reliability (Cronbach's $\alpha = 0.77$).

Self-concept of sport ability was measured at Wave 1 using two items designed to assess students' perceptions of their ability in sports (e. g., Compared to other kids your age, how good are you at sports?; Cronbach's $\alpha = 0.90$).

Self-concept of social ability was measured at Wave 1 using two items designed to assess students' perceptions of their social ability (e. g., How good are you at making friends?; Cronbach's $\alpha = 0.86$).

Utility value was measured at Wave 1 with three items assessing students' perceptions of the importance or usefulness of school for their future (e. g., I have to do well in school if I want to be a success in life. Scale $\alpha = 0.64$).

Academic achievement was measured by computing a grade point average (GPA) from the students' reports of the number of A's, B's, C's, D's, F's that they had gotten on their previous semester's report card. A's were given a code of 4, B's a code of 3,... and F's a code of 0. Their report at Wave 1 was used as the indicator of previous achievement; their report at Wave 2 (the end of the eighth grade) was used as the outcome achievement measure.

Self-esteem was measured at Wave 1 using 6 items based on Harter's General Self-Worth scale (Harter 1982). The items were converted to use a five point Likert-type response scale with 1 = almost never true of me and 5 = almost always true of me (e. g., How often are you pretty sure about yourself?; $\alpha = 0.80$).

2.2. Results: Expectancies and values as predictors of achievement

Initial descriptive analyses revealed the following race differences (see Table 1): the African-American students had slightly lower grades than the European-American students. The two groups had equivalent academic ability self-concepts, despite the differences in academic performance at both time points. Finally, the two groups placed equivalent utility value on school success.

The results for the first set of regression analyses are summarized in Table 2. Ethnic group, gender and family income were entered first as control variables because each of these variables have been shown to have a significant impact on achievement in other studies (McLoyd 1990). Ethnic group continued to have a significant association with achievement even after the influence of both income and gender on achievement were taken into account. African-Americans had lower GPA's than the European-Americans

Table 1: Mean differences (SD in parenthesis) between African American and European American students on motivation, and performance

Variable	African Am	European Am	t-value
Achievement	2.9 (0.62)	3.3 (0.57)	-9.7**
Self-concept	5.3 (1.0)	5.3 (1.0)	0.36
Self-Esteem	2.9 (0.72)	2.9 (0.63)	-0.11
Utility value	4.1 (0.69)	4.1 (0.65)	-0.74

Note: **p < 0.01

Table 2: The influence of demographic characteristics, prior achievement and motivation on change in achievement: Standardized B Coefficients

Variable	Model 1: Demographic characteristics	Model 2: Prior achievement	Model 3: Motivation	Model 4: Full model
Black	-0.24**	-0.16**	-0.17**	-0.18**
Female	0.24**	0.19**	0.14**	0.14**
Income	0.24**	0.20**	0.15**	0.16**
Prior achievement		0.38**	0.47**	0.42**
Self-concept			0.20**	0.17**
Utility Value			0.07	0.05
BlackxIncome				0.31
BlackxSelf Concept				0.23**
BlackxUtility Value				0.13
R Square Change	0.20**	0.20**	0.04**	0.05**
R square	0.20**	0.40**	0.44**	0.45**

Note: **p < 0.01
Black and female are dummy coded variables.

at both time points. Females had higher GPA's than males, regardless of race or family income. Finally, family income had a significant association with achievement even with the impact of race and gender controlled.

Prior academic achievement was entered next to allow us to test the impact of our two motivational variables on change in achievement level over time. Self-concept of academic ability and utility value were entered next (Model 3). This model accounted for 37% of the variance in Wave 2 academic achievement. As predicted, students with high self-concept of academic ability experienced greater gains in their academic achievement scores than students with low self-concept of academic ability. Contrary to the prediction derived from the Eccles et al. expectancy/value model, the perceived utility value of school achievement had no relation to the change in achievement level over time.

On the final step we entered the two race interaction terms in order to determine whether self-concept of academic ability and the value for education have a different association with the change in achievement for African-American students than it does for European-American students. The interaction term of self-concept of academic ability and ethnic group was significant indicating that the influence of self-concept of academic ability on the change in achievement is different for African-American adolescents than it is for European-American adolescents. In order to determine the exact nature of this interaction, we calculated the beta-coefficient for each of the two groups separately. Self-concept of academic ability had a weaker effect on the change in achievement for African-American adolescents (beta = 0.19) then it did for European-American adolescents (beta = 0.25).

2.3. Results: Disidentification

First, we assessed ethnic group differences in the two additional ability self-concepts. Contrary to the results for academic self-concept, there were significant ethnic group differences for self-concept of sport ability (t = 3.87, p < 0.001; African-American M = 5.23, SD = 1.67; European-American M = 4.85, SD = 1.76) and for self-concept of social ability (t = 5.01, p < 0.001; African-American M = 5.67, SD = 1.32; European-

American M = 5.29, SD = 1.40). There was no significant ethnic group difference in self-esteem.

Next, we ran multiple regressions within each ethnic group, using the three ability self-concept indicators as predictors. The R-squared was significant for both groups (European-Americans: $R^2 = 15\%$, F = 26.78, p < 0.0001; African-Americans: $R^2 = 14\%$, F = 46.15, p < 0.0001). Inspection of the unstandardized regression coefficients (all significant at p < 0.01) suggests that, as predicted by disidentification theory, academic self-concept was slightly less important for the African-American students' self-esteem (B = 0.13) than for the European-American students' (B = 0.17). In contrast, social self-concept was slightly more important for the African-American students' self-esteem (B = 0.13) than for the European-American students' (B = 0.07). Finally, sports' self-concept was slightly more important for the European-American students' self-esteem (African-American B = 0.06; European-American B = 0.09).

2.4. Discussion

Ethnic group differences and non-differences in academic performance and achievement-related beliefs. The group differences in school grades are consistent with the findings from other studies (e.g., Comer 1980; Hale-Benson 1985). However, unlike previous research, the African-American adolescents in this study are performing at quite high levels even though these levels are significantly lower than that of European-American adolescents. Thus, to say that these African-American adolescents are not performing well because they are performing less well than European-American adolescents would be inaccurate.

The existence of the difference in performance level still needs to be understood. The fact that there were no group differences on either self-concept of ability and perceived utility rules out these psychological factors as probable explanations. Although many other plausible causes have been suggested, we are particularly concerned with those causes that reflect ethnic group differences in educational opportunities – more specifically, those school characteristics that can undermine the academic achievement

for African-American adolescents. Possible characteristics that should be explored are teacher characteristics, tracking practices, neighborhood characteristics and the resource distribution in schools with a high percentage of African-Americans. For example, recent evidence reported by Fleming, Jussim & Eccles (1993) suggests that African-American students may be especially susceptible to negative teacher expectancy effects within their classrooms.

Also, contrary to what some scholars (e. g. Ogbu 1983) have suggested, the African-American and European-American adolescents in this study placed equivalent utility value on school achievement.

Relations between self-concept of ability and academic performance. The ethnic group difference in the association between self-concept of ability and change in academic performance indicates that the power of these psychological factors in predicting the African-American students' achievement is smaller than their power in explaining individual differences in the school performance of European-American students. Thus, we should be cautious in generalizing results from models based on European-American samples to other ethnic groups. Nonetheless, each of these four beta's was significant, indicating that the expectancy/value model yielded reliable predictability of change in academic achievement scores for both African-American and European-American adolescents.

Differential predictive power of self-concept of ability and perceived utility. The fact that perceived utility value did not predict to change in grades is also worth noting. A similar result has emerged in other studies; for example in Eccles [Parsons], Adler & Meece (1984), only self-concept of math ability predicted to subsequent math courses grades. In contrast, the perceived value indicators predicted to future course enrollment plans and actual enrollment decisions. We have just found the same pattern for predicting European-American adolescents' participation in sports, enrollment in advanced math courses and enrollment in advanced physical science courses (Eccles, Barber, Updegraff & O'Brien 1995). Apparently the two components of the expectancy/value model predict to different achievement outcomes with ability self-concepts predicting performance once one is in

the achievement setting and subjective task values predicting the decision to enter the achievement setting.

Differential predictive power of academic self-concept for self-esteem. For the European-American students, academic self-concept was the most powerful predictor of self-esteem – with a standardized coefficient of 0.23 compared to 0.20 for sports and 0.13 for social. Also as predicted, the European-American students' academic self-concepts were more predictive of their self-esteem than the academic self-concept was for the African-American students' self-esteem. Both of these results are consistent with the disidentification model. Although the African-American students expressed just as high academic self-concepts as the European-American students, they were not doing as well academically. One would predict based on other studies of self-concept formation (e. g., Marsh 1990) that the African-American students should be reporting lower academic self-concepts than European-American students given their lower academic performance. This was neither the case in this study, nor the case in the several studies discussed in the introduction. Graham (1994) suggested that this discrepancy may reflect either the use of different social comparison group or a defensive strategy to protect one's self-esteem. Disidentification theory suggests that, although both of these explanation may be true, African-American students will also defend their self-esteem by disassociating their general sense of self-worth from perceived competence in those domains in which they experience discrimination. Consequently, even though they may report high academic self-concepts, their academic self-concepts should be less predictive of their self-esteem. Unfortunately, although this strategy protects the African-American students from the negative effects of academic failure, it also limits the psychological benefits they can experience when they succeed in school.

3. Study 2

3.1. Method

In this study the adolescents were questioned about their academic ability self-concepts in specific subject areas rather than for school achievement in general. This allows us to test

the utility of the expectancy/value perspective for a particular subject area rather than for the more global academic domain. As noted in the introduction, researchers interested in the link between ability self-concepts and achievement have stressed the importance of using as specific indicators as possible. Study 2 was designed to look specially at math achievement. Therefore, it provides the opportunity to look at the same issues explored in Study 1 in a specific academic subject. In addition, we replicate the analyses related to self-esteem. Again our primary question is whether a similar set of relationships characterize the findings for both African-American and European-American students.

2320 European-American and 180 African-American adolescents in 12 different school districts were studied over four waves of data collection: the fall and spring of the students' sixth grade, and the fall and spring of their seventh grade school year. The data reported here come from the first two waves of data collection taken during the adolescents' sixth grade year.

The sixth graders' ability self-concepts, task values, and global self-esteem were assessed with a self-administered questionnaire taken at school during their math class. The specific ability self-concepts and perceived math value were assessed using items developed by Eccles and her colleagues. These items used seven point Likert-type scales anchored at the extremes with descriptors. The students were asked to rate their ability in math, English, sports, and peer social relations using comparably worded questions for each domain. For example, they were asked, "How good are you at math compared to other subjects?" (not at all good – very good). They rated their math value on a series of questions like "How important is it to you to be good at math?" Items within each domain factor together and yield scales with good reliability – Cronbach's α exceeding 0.70 in each case. The reliability and validity of these scales and the specific items are reported in Eccles [Parsons] (1983) and Eccles et al. (1984). Harter's General Self-Worth Scale was used to assess general self-esteem (Harter 1982).

In addition, since we wanted to determine the extent to which actual competence in each domain predicted both one's corresponding ability self-concept and one's general self-esteem, we asked the students' teachers to rate each students' competence in three of these four domains: math, sports, and peer social relations. The teachers were asked to rate, using a seven point Likert scale, how well each student was doing in each area and how well they were doing compared to other students in the class.

Finally, in order to replicate the analyses in Study 1 using expectancy-related beliefs and values to predict actual achievement and math participation, we used math ability self-concept, math value, teacher ability ratings, and prior math grade to predict to year 2 math grade, and future course taking plans. The math grades were collected from the students' school records. Their future course taking plans were assessed on the same questionnaire used to collect their self- and task-related beliefs. They were asked how many more years of math courses they planned to take once they enter high school and math courses become optional.

3.2. Results: Predictors of ability self-concepts

Ethnic group was significantly related to the teachers' ratings of the adolescents' competence in each of the three skill domains: African-American students received significantly lower teacher ratings than European-American students for math (F = 3.99, p < 0.05) and peer social relations (F = 35.03, p < 0.001). In contrast, the African-American students were rated higher in sports ability than the European-American students (F = 61.79, p < 0.001). A different pattern of ethnic group differences emerged for the students' ability self-concepts. African-American students rated themselves higher than European-American students for all three specific ability domains: math F = 24.16, p < 0.001; English F = 26.05, p < 0.001; sports F = 45.35, p < 0.001; and peer social relations F = 54.36, p < 0.001). There was no significant ethnic group effect on either the global self-esteem or the value of math measures. In contrast, the African-American students did plan to take slightly fewer math courses in the future than the European-American students (p < 0.05), and the African-American students also received slightly lower grades in math both prior to the questionnaire administration and one term later (p < 0.05).

3.3. Results: Predicting math achievement and course plans

Table 3 summarizes the regression analyses predicting second term math grades and high school math course plans. Contrary to the results in Study 1, math ability self-concept did not predict changes in math grades from one term until the next, once indicators of prior performance were controlled. There was the expected significant zero-order correlation between math ability self-concept and both first and second term grades (for both African-American and European-American students; rs ranged from 0.23 to 0.49 and were higher for European-American students than for the African-American students). These relations, however, were reduced to non-significance when prior achievement and teacher rating of performance were entered as controls. In contrast, in this sample, math value did predict increases in math grades. This was more true for the European-American than for

Table 3: Predicting Spring Math Grades and Future Course Enrollment Plans; Standardized B Coefficients

Predictors		Spring Math Grade	Course Plans
Ethnic Group	(1 = European American)	0.04	0.04
Gender	(1 = Female)	0.03	-0.06*
Teacher Ability Rating		0.22***	0.05
Math Value		0.07*	0.17**
Math Ability Self-Concept		0.02	0.20***
Fall Math Grade		0.43***	0.05
F		126.91***	34.12***
R^2		0.40	0.11

Note: *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$

the African-American students (unstandardized coefficients = 0.22 and 0.13 respectively, ethnic difference significant at $p < 0.10$).

A slightly different picture emerged for course plans. In this case, as predicted by the expectancy-value model, both math value and math ability self-concept significantly predicted plans to take more math courses and this was equally true for the African-American and European-American students.

3.4. Results: Predicting ability self-concepts and self-esteem

We next assessed the relation of the teachers' ratings of the students' competence in each domain with the students' own ability self-concepts and global self-esteem. There were significant relations between teachers' ratings of the students' ability and the students' self-ratings for both math ($r = 0.42$ and 0.51 for African-American and European-American students, respectively) and sports ($r = 0.21$ and 0.32 for African-American and European-American students, respectively). In contrast, the relation of the teachers' ratings to students' self-esteem depended on the students' ethnic group: None of the teacher's ratings were significantly related to the African-American students' global self-esteem (rs ranged from 0.00 to 0.03); whereas the teachers' rating of the students' math ($r = 0.20$), sports ($r = 0.15$) and social ($r = 0.12$) abilities were significantly related to the European-American students' self-esteem.

Next, we correlated the students' global self-esteem ratings with their specific ability self-con-

cepts. As is true for the associations between the teacher ratings and global self-esteem, none of the African-American students' ability self-concepts were significantly related to their self-esteem. In contrast, all four of the European-American students' specific ability self-concepts were significantly related to their global self-esteem – with math and social self-concepts having the highest association (rs ranged from 0.22 to 0.35).

We next entered all four of the ability self-concepts and the three teacher achievement ratings into a single simultaneous multiple regression equation for each of the two populations. The results for both groups are summarized in Table 4. What is most striking is that the equation is not significant for the African-American students but is for the European-American students. It is important to bear in mind that the size of the sample was very different for the two groups and that the multiple R for the African-American sample would have been significant in a larger sample. Nonetheless even when you compare the unstandardized b weights, few of the predictors approach comparable size in the two groups. The one exception to this conclusion is the b weight for sports self-concept, which is actually slightly larger in the African-American sample than in the European-American sample. But the standard error for the African-American sample is much larger than for the European-American sample making it impossible to interpret this difference. Apparently, in this sample of African-American students, these

Table 4: Predicting Self-Esteem for African-American and European-American Students; Unstandardized Coefficients (Standardized Coefficients)

	African Americans	European Americans
Predictors		
Math Self-Concept	0.06 (.05)	0.33 (.24)***
English Self-Concept	0.06 (.05)	0.11 (.08)**
Sport Self-Concept	0.12 (.09)	0.10 (.08)**
Social Self-Concept	-0.04 (-.03)	0.24 (.18)***
Teacher Rating: Math	0.04 (.04)	0.03 (.02)
Teacher Rating: Sports	0.03 (.01)	0.05 (.02)
Teacher Rating: Social	-0.01 (-.00)	0.43 (.07)**
R^2	0.017	0.19***

Note: ** $p < 0.01$, ***$p < 0.001$

ability self-concepts and competencies are not related to individual differences in global self-esteem.

In contrast, among European-American students, several of the standardized predictors are significant with math self-concept and social self-concept being the largest. Interestingly, even though math competence, as rated by the teacher, was related to global self-esteem at the zero-order level, it is not significantly related once math self-concept is controlled. This suggests that math competence is related to global self-esteem indirectly through its association with math ability self-concept. In contrast, both social ability self-concept and actual social competence as rated by the teacher make independent contributions to predicting global self-esteem.

4. General discussion

Two patterns emerged across both studies: First, African-American youth have just as high, if not higher, ability self-concepts as European-Americans. The African-American youth also have just as high self-esteem. Nonetheless, in both studies, the African-American youth were performing more poorly in school than the European-American students. These two effects suggest that perhaps too much emphasis has been placed on the need to enhance the self-concept of African-American adolescents (Whaley 1993).

The second pattern is the generally weaker predictions of both grades and self-esteem for the African-American youth. This finding is especially marked for self-esteem. One might think that this difference could be explained in terms of William James's hypothesis that self-concepts should only affect one's self-esteem to the extent that one values the activity. But the African-American youth in Study 1 placed just as much value on education as European-American youth. This is also true in the population in Study 2 (Senior 1989). In fact, the African-American youth in Study 2 responded slightly higher than the European-American youth to questions like "Is the amount of effort it will take to do well in [math, English, sports] this year worthwhile to you?" and "For me being good at [math, English, sports] is important". Clearly,

then the lack of predictive power of these domain specific, ability-based self-concepts is not due to the lack of importance attached to these achievement domains by the African-American students. Future research is needed to answer the question what else might account for this difference.

In conclusion, although there are ethnic group differences that need to be explored, our results suggest that the expectancy component of the Eccles et al. Expectancy/value model of achievement behavior is a good predictor of changes in academic achievement in both African-American and European-American adolescents. The value component did not predict achievement gains or losses in either population but did predict course enrollment decisions quite well for both groups of adolescents. It remains to be seen whether the value component does as well for other ethnic groups. The utility of the expectancies and ability self-concepts for predicting self-esteem in African-American adolescents is not apparent in either study. Although these youth placed high value on the ability domains included in the analyses, variations in their self-concepts of ability in these domains were unrelated to variations in self-esteem. In contrast, variations in the European-American adolescents' ability self-concepts were related to variations in self-esteem in the predicted direction. Although these results are consistent with disidentification theory, further research is needed to confirm these ethnic group differences in other samples.

References

Bandura, A. (1994). Self-efficacy: The exercise of control. New York: W. H. Freeman.

Bledsoe, J. (1967). Self-concept of children and their intelligence, achievement, interests, and anxiety. Childhood Education, 43, 436–438.

Comer, J. (1980). School Power. New York: Free Press.

Eccles (Parsons), J. (1983). Expectancies, values and academic behaviors. In Spence, J. (Ed.). Achievement and Achievement Motivation. San Francisco: W. H. Freeman, 75–146.

Eccles, J. S., Adler, T. F. & Meece, J. L. (1984). Sex differences in achievement: A test of alternate theories. Journal of Personality and Social Psychology, 46, 26–43.

Eccles, J. S., Barber, B. L., Updegraff, K. A. & O'Brien, K. M. (1996, June). Predicting involvement in sports, honors math and physics. Invited paper presented at the international conference on Interest and Gender: Issues of Development and Change in Learning, Kloster See-on, Germany.

Eccles, J. S. & Wigfield, A. (1995). In the mind of the actor: The structure of adolescents' achievement values and expectancy-related beliefs. Personality and Social Psychology Bulletin, 21, 215–225.

Eccles, J. S., Wigfield, A., Harold, R. D. & Blumenfeld, P. (1993) Ontogeny of children's self-perceptions and subjective task values across activity domains during the early elementary school years. Child Development, 64, 830–847.

Eccles, J. S., Wigfield, A. & Schiefele, U. (in press). Achievement motivation. In Eisenberg, N. (Ed.). Carmichael Handbook of Child Psychology.

Finn, J. D. (1989). Withdrawing from school. Review of Educational Research, 59, 117–142.

Fleming, C., Jussim, L. & Eccles, J. (1993). Ethnicity as a moderator of teacher expectations. Paper presented at the Annual Convention of the American Psychological Association, Toronto, Canada.

Graham, S. (1994). Motivation in African Americans. Review of Educational Research, 64, 55–117.

Hale-Benson, J. (1985). African-American Children: Their roots, culture and learning styles. Baltimore: Johns Hopkins Press.

Hare, B. R. (1977). Racial and socioeconomic variations in preadolescent area-specific and general self-esteem. International Journal of Intercultural Relations, 1, 31–51.

Harter, S. (1982). The perceived competence scale for children. Child Development, 53, 87–97.

Harter, S. (1985). Competence as a dimension of self-evaluation: Toward a comprehensive model of self-worth. In Leahy, R. (Ed.). The development of the self. New York: Academic Press, 55–121.

House, J. (1993). Achievement-related expectancies, academic self-concept and mathematics performance of academically unprepared adolescent students. The Journal of Genetic Psychology, 154, 61–71.

James, W. (1963/1890). The principles of psychology. New York: Holt, Rinehart, Winston.

Jordan, J. T. (1981). Self-concepts, motivation and the academic achievement of African-American adolescents. Journal of Educational Psychology, 73, 509–517.

Marsh, H. W. (1990). The causal ordering of academic self-concept and academic achievement: A multiwave, longitudinal analysis. Journal of Educational Psychology, 82, 646–656.

Marsh, H. W. & Shavelson, R. (1985). Self-concept: Its multifaceted, hierarchical structure and its relation to academic achievement. Educational Psychologist, 20, 107–125.

McLoyd, V. C. (1990). The impact of economic hardship on African-American families and children: Psychological distress, parenting and socioemotional development. Child Development, 61, 311–346.

National Science Foundation (1995). Women, minorities, and persons with disabilities in science and engineering: 1994. Washington D.C.: US Government Printing Office.

Ogbu, J. G. (1983). Minority status and schooling in plural societies. Comparative Education Review, 27, 168–190.

Ogbu, J. G. (1992). Understanding cultural diversity and learning. Educational Researcher, 21, 5–14.

Senior, A. M. D. (1989). Understanding differences in African-American and European-American students' self-concepts of ability. Unpublished dissertation, University of Michigan, Ann Arbor, MI.

Skinner, E. A. (1995). Perceived control, motivation, and Coping. Thousand Oaks, CA.: Sage.

Steele, C. M. (1992, April). Race and the schooling of black Americans. The Atlantic Monthly.

Steele, C. M. & Aronson, J. (1996). Stereotype threat and the intellectual test performance of African-Americans. Journal of Personality and Social Psychology, 69, 797–811.

Steinberg, L., Lamborn, S. D., Dornbusch, S. M. & Darling, N. (1992). Impact of parenting practices on adolescent achievement: Authoritative Parenting, School Involvement, and Encouragement to Succeed. Child Development, 63, 1266–1281.

Stevenson, H. W., Chen, C. & Uttal, D. H. (1990). Beliefs and achievement: A study of black, white, and Hispanic children. Child Development, 61, 508–523.

Taylor, R. D., Casten, R., Flickinger, S., Roberts, D. & Fulmore, C. D. (1994). Explaining the school performance of African-American adolescents. Journal of Research on Adolescence, 4, 21–44.

Whaley, A. (1993). Self-esteem, cultural identity, and psychosocial adjustment in African-American children. The Journal of African-American Psychology, 19, 406–422.

J. S. Eccles, University of Michigan, Institute for Social Research, P.O. Box 1248, Ann Arbor, MI 48106, USA, e-mail: jeccles@umich.edu