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Relationships Among Ethnic Identity, School Attitudes, General School Self-Concept, and Academic Achievement of African American and Hispanic High-Ability Students from Low-Income Families

Mihyeon Kim, Ph.D., Ed.D.

Abstract

Ethnic identity is a reflection of an individual's own ethnic group membership and interaction with members of other groups. This study examined the relationship between students' ethnicity, general school self-concept, school attitudes, and academic performance measured by self-reported responses. The sample was made of low-income, high-ability African American and Hispanic 7th and 8th grade students, $N = 186$, that participated in a residential summer academic program. A path model was proposed with four components to measure academic achievement: ethnic identity, school attitudes, general school self-concept, and self-reported GPA. The path analysis model explained 11% of the variance in GPA and revealed one direct effect on GPA: school attitudes. Ethnic identity was indirectly linked with GPA through school attitudes. The effect of ethnic identity on GPA was indirectly associated with school attitudes ($p < .01$). Understanding students' backgrounds and increasing their ethnic identity may contribute to providing a positive school experience to low-income ethnically diverse student groups and reducing the achievement gap.

Keywords: *ethnic identity • school attitudes • academic performance • self-concept*

The academic achievement gap between low-income and high-income students has been a well-documented problem in the last few decades (Lacour & Tissington, 2011; Reardon, 2013). A notable issue to address in addition to the achievement gap between low-income and high-income students is the poverty rate for African Americans and Hispanic populations (Creamer, 2020). Families with incomes below 200% of the federal poverty guideline are often classified as "low-income," and families with incomes below 50% of the poverty guideline are classified as in "deep poverty" (Office of the Assistant Secretary for Planning and Evaluation, 2015). The National Assessment of Educational Progress (NAEP) found that very few low-income students scored at the advanced level on any national test with achievement gaps in math and reading being more significant than in any other subject areas (Plucker & Peters, 2018). Data from the US Census Bureau provided evidence that African American and Hispanic individuals "continue to over-represent in the population in poverty relative to their representation in the overall population" (Creamer, 2020, para. 13). The achievement gap and the underrepresentation of low-income and students of color in advanced enrichment programs also continue to be a concern in gifted education (Olszewski-Kubilius & Thomson, 2010). As Ford et al. (2021) addressed, African American and Hispanic students from low-income backgrounds have been underrepresented

in school gifted programs for decades, leading them to have inequitable educational opportunities. However, regardless of the achievement gap between low-income and high-income gifted students, many gifted students from low-income families still achieve academic success (Joseph et al., 2016). To support the academic success of high-ability African American and Hispanic students from low-income backgrounds, many studies have explored various psychological factors, such as ethnic identity, that influence their academic achievement. Adolescent ethnic identity may be an important variable to consider in order to understand their behaviors and performance in school. A study by Whiting (2009) suggested that identity and self-perception are achievement barriers for Black male students. When Black students face messages that they are less capable than their White classmates, they may not feel confident about their academic capability. Although Whiting's study is focused on Black males, it is notable to address the importance of positive identity development for the academic achievement of African American students.

The social identity theory believes that:

the dynamics of prejudice and intergroup conflict were best understood as group phenomena generated by basic human motivations and cognitive processes impacted by people's beliefs about themselves, and about the society, social context, and immediate situations people find themselves and their groups in. (Hogg, 2016, p. 4)

The developmental theory examines nature and sources of human beings' growth and the issues around their growth (Lerner, 1998). Both the social identity theory

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and the developmental theory indicate that a stronger or more committed ethnic identity would be associated positively with one's psychological well-being (Iturbide et al., 2009; Yasui et al., 2004). Smith and Silva (2011) synthesized research examining the relationship between the constructs of ethnic identity and personal well-being among people of color in North America. They consistently found that ethnic identity is positively related to measures of well-being and that students' well-being is associated with their academic success (Amholt et al., 2020; Simovska et al., 2016).

In addition to ethnic identity, many other factors have been considered important to the achievement of high academic performance, such as academic self-concept (Bonilla, 2018) and school attitudes (McCoach & Siegle, 2003; Ritchotte, 2016; Siegle et al., 2020). The present study explored the relationships among ethnic identity, academic self-concept, school attitudes, and academic achievement of low-income, high-ability middle school students enrolled in a residential academic summer enrichment program. These socio-emotional and school-related factors have been examined as predictors of academic achievement in previous studies (Grindal & Nieri, 2015; Guzman, 2002; Ivory, 2002; Oyserman, 2008) examining each factor separately to predict academic achievement. However, this study seeks to examine relationships among ethnic identity, general school self-concept, school attitudes, and academic achievement of low-income, high-ability students in a single model through path analysis. Path analysis allows us to estimate all proposed relationships among multiple variables simultaneously rather than analyzing one dependent variable at a time. In addition, path analysis is used to examine the comparative strength of direct and indirect relationships among variables, providing a better understanding of the causal relationship among different variables (Crossman, 2019; Lleras, 2005).

Ethnic Identity and Academic Achievement

Adolescence is a developmental stage where an individual often faces an identity crisis (Erikson, 1968). According to Erikson (1968), adolescents are actively engaged in identity exploration, yielding confusion about themselves and fluctuations in ego strength. This development is characterized as an identity crisis. Therefore, understanding the impact of identity formation on students' learning and development is an important factor for consideration, (Bonilla, 2017) and school is a crucial environment for such identity development. Students who are in ethnically diverse schools learn how ethnicity may matter in their lives based on interactions with students, teachers, and others in their schools. French et al.'s (2006) study showed that the ethnic identity of African American students increased for both early and middle adolescents.

Identity development, including ethnicity develop-

ment for youths (approximate age of 12–18), is important in developing a sense of self through social interaction (Erikson, 1968). Although race and ethnicity are often used interchangeably, the dictionary by Merriam-Webster (n.d.) defines race as "any one of the groups that humans are often divided into based on physical traits regarded as common among people of shared ancestry," while ethnicity is defined as an "affiliation of large groups of people classed according to common racial, national, tribal, religious, linguistic, or cultural origin or background." Race in the United States has been related to one's political rights. Racial identity refers to "an individual's sense of group identity which results from being socialized to believe that she or he [sic] has a common racial heritage, shared history, and is part of a racial group," (Cokley & Chapman, 2008, p. 350) and is a popular construct in African American samples such as Black racial identity (Cross, 1971). This started as a developmental model and expanded to an attitudinal model of the nigrescence model (Cross & Vandiver, 2001; Worrell et al., 2020). Meanwhile, ethnicity has more socially constructed meanings, as ethnic identity refers to a person's social identity within a larger context of descent-based attributes such as culture, religion, geography, language, and practices (Chandra, 2006; Evans et al., 2010; Phinney, 1996). Ethnic identity has social meanings in terms of the stereotypical characteristics, norms, and behaviors of social groups (Camacho et al., 2016; Fuligni et al., 2005). Among different race-ethnicity groups, more African American and Hispanic families were found to be under lower income categories compared to White (non-Hispanic) and Asian families according to 2019 income data, continuing what had been a historical trend (Semega et al., 2020).

High-ability students from low-income ethnic groups may have faced challenges such as discrimination, prejudice, and biased or inappropriate assessments toward them during school (Baldwin, 2005). Although research examining academic outcomes has found that a strong ethnic identity contributed to increased positive attitudes toward school (Grindal & Nieri, 2015; Guzman, 2002; Ivory, 2002; Oyserman, 2008), there has been a mixture of results concerning the association of ethnic identity with academic performance. While some of the findings support a positive association of ethnic identity with academic performance (Graham & Anderson, 2008; Grindal & Nieri, 2015), many studies did not find any such associations (Guzman et al., 2005; Ivory, 2002; Shermack, 1996; Sobansky, 2003; Velez-Yelin, 2002). However, a sense of belonging in an educational setting for African American and Hispanic students from low-income backgrounds may interact with their academic self-concept and influence their school attitudes and academic achievement. Therefore, the ethnic identity of African American and Hispanic students from low-income backgrounds may be an

important variable to consider in understanding their behaviors associated with other school-related variables and their performance in school.

Academic Self-concept and academic achievement

Self-concept is the perception every individual has about the self, developed from one's interpretations of their own experiences and reflected appraisals (Rayner, 2001). According to Shavelson et al.'s (1976) multifaceted, hierarchical structure of self-concept, the self-concept structure is divided into academic and nonacademic components. General self-concept is considered an overarching self-concept, tending to be more consistent with less situational variability. This overarching construct encompasses both academic and non-academic components of self-concept (Snyder, 2016). Academic self-concept is generally considered to be more stable across time intervals compared to different types of self-concepts (Jansen et al., 2020). Regarding the structure of academic self-concept, Shavelson et al. (1976) described general-school self-concept (e.g., "I'm good at most school subjects") as the top of the hierarchy and domain-specific academic self-concept (e.g., "I am good at mathematics") at the next lower level. In terms of the stability of different levels of self-concepts, the higher-level general-school self-concept is considered to be more independent in specific situations than the lower-level of domain-specific academic self-concept.

In terms of the relationship between academic self-concept and achievement, literature on self-concept suggests that the academic self-concept has a higher correlation with academic achievement than the non-academic self-concept (Fin & Ishak, 2014). A meta-analysis study on the relationship between academic self-concept and achievement by Wu et al. (2021) demonstrated that academic self-concept predicted achievement significantly and vice versa. However, Esnaola et al. (2018) suggested that the domain-specific self-concept can be studied independently from the general school self-concept because the domain-specific self-concept would provide a better effect estimation of domain-specific intervention. Since this study does not examine domain-specific achievement, it used general school self-concept which is a component of academic self-concept relating to perceptions of their general academic performance.

School Attitude and Academic Achievement

As mentioned previously, many gifted individuals achieve at the level of their expected academic potential. Although school attitude can be described as students' perceptions of the effectiveness of school (Lee, 2016), some researchers in gifted education (McCoach & Siegle, 2003; Suldo et al., 2008) defined school attitudes as "interest in and affect toward school" (McCoach &

Siegle, 2003, p. 417). Among many factors that have been studied in relation to academic achievement, students' attitude towards school is a factor explored to encourage the academic performance of gifted students. Literature studying the relationship between attitudes in school and academic performance suggests that high achievers tend to have more positive attitudes toward teachers and schools than underachievers (Çakır, 2014; Lee, 2016; McCoach & Siegle, 2003). However, Lee's (2016) study suggested that a strong relationship between attitude and achievement is only seen in students coming from higher-income families (2 standard deviations above the mean) indicating the synergy effects of the income level of the family and school attitude on achievement. Therefore, exploring several socio-emotional and school-related factors associated with academic performance in a single model may provide more information in understanding how to encourage low-income, high-ability students' academic performance. The purpose of this study is to explore the relationship among factors contributing to academic achievement of low-income high-ability students, specifically ethnic identity, general school self-concept, and school attitudes of high-ability African American and Hispanic students from low-income families.

Method

Participants

The participants were students in a 2-week residential summer academic enrichment program. The program was developed and implemented specifically to support low-income, high-ability 7th and 8th grade students from school districts within 75 miles of the hosting university. All participants were from school districts within one state where the housing university is located. It was designed to address the need for enhanced and expanded STEM education in the region. Staff members contacted gifted coordinators in the districts and informed them about the purpose of the program, the responsibilities of the districts, and guidelines on how to identify students. Participants were 7th grade students that were nominated by school districts as low-income, high-ability students based on the following selection criteria:

- Family income level below \$45,000 and
- Any standardized test scores at the 90th percentile or better in at least any one of the test subscales, or
- Recommendation accompanied by evidence of performance (a recommendation letter with a rationale for the student's potential capability along with submitted evidence of performance).

After the first year, participants were invited back for a second year as 8th graders, along with a new 7th grade

cohort. Data were collected for 4 years from 2016 to 2019. Both 7th and 8th grade students were included in the study during the first year; however, only 7th grade students participated in the study afterward because the 8th grade students had participated in the study as 7th graders in the previous year. Almost all 7th and 8th grade students (about 250 students) in the program received parental permission and assented to participate in the study. They were from four different ethnic groups as stated in an application form (open entry): 24.42% ($n=53$) identified as Hispanic, 61.29% ($n=133$) identified as African American, 9.22% ($n=20$) identified as having mixed ethnicity, and 5.07% ($n=11$) identified as White. Data was available from 217 students who completed all three surveys. Thirty-three students who completed only one or two surveys were removed from the data used in this study. Students identifying as White and having mixed ethnicity were also not used in the study because the number of students from these ethnic groups was not large enough to be included in the statistical analysis. A total of 186 African American and Hispanic students from the 217 valid surveys were thus included in this study. Of the 186 7th and 8th grade high-ability students from low-income backgrounds included in this study, 71.5% ($n=133$) were African American and 28.5% ($n=53$) were Hispanic.

Measures

Ethnic Identity

Ethnic identity was measured using Phinney and Ong's (2007) Multigroup Ethnic Identity Measure Revised (MEIM-R). This measure, developed for use with ethnically diverse samples, includes six closed-ended items followed by two open-ended questions about their ethnicity. The MEIM-R includes two subscales: exploration of one's ethnic identity (e.g., "I have often talked to other people in order to learn more about my ethnic group"), and commitment to one's ethnic identity (e.g., "I feel a strong attachment towards my own ethnic group"). Responses are scored on a 5-point Likert-type scale with endpoints 1 (strongly disagree) and 5 (strongly agree). Phinney and Ong (2007) performed a confirmatory factor analysis to provide evidence for scale validity which supported the two-factor structure along with a subsequent study by Chakawa et al. (2015). Herrington et al. (2016) performed a Reliability Generalization (RG) study using 46 previous studies (age range from 13-52) reporting Cronbach's alpha reliability coefficients for the MEIM-R. Although lower reliability than the original MEIM was reported for the MEIM-R (Herrington et al., 2016), the reliability of the MEIM-R was in an acceptable range: .81 for the total scale, .76 for the Exploration subscale, and .78 for the Commitment subscale. Prior research with adolescents

reported adequate internal consistency of item scores, with Cronbach's α ranging from .70 to .92 (Homma et al., 2014; Musso et al., 2018). In the current study, Cronbach's alphas were .80 and .84.

Students' Attitudes in School

Students' attitudes in school were measured using the School Attitudes Assessment Survey-Revised (SAAS-R; McCoach & Siegle, 2003) which consists of 35 items. This assessment measures academic self-perceptions (e.g., "I am intelligent"), attitude toward school (e.g., "This school is a good match for me"), motivation/self-regulation (e.g., "I check my assignments before I turn them in"), goal valuation (e.g., "I want to get good grades in school"), and attitudes toward teachers (e.g., "My teachers make learning interesting"). Response options included 1 = "Strongly Disagree", 2 = "Disagree", 3 = "Slightly Disagree", 4 = "Neither Agree Nor Disagree", 5 = "Slightly Agree", 6 = "Agree", and 7 = "Strongly Agree". Students reported their own GPA. SAAS-R measures the presence or absence of achievement-oriented attitudes with high scores indicating positive achievement-oriented attitudes. McCoach and Siegle's (2003) study provided evidence of the construct validity of the scale, demonstrating acceptable reliability with an internal consistency for each scale above .85. Pérez et al. (2016) performed confirmatory factor analysis procedures with 1,398 students ranging between 11 and 15 years of age reporting reliability for the total scale of .94. In the current study, coefficient alphas for the SAAS-R subscales ranged from .86 to .94.

Academic Achievement.

Self-reported GPA was obtained from the SAAS-R (McCoach & Siegle, 2003) instrument for academic achievement. Response options are included as shown in Table 1. Based on the measurement, higher values of the variable would represent lower academic performance.

Self-Concept

The Self-Description Questionnaire-I (SDQ-I; Marsh, 1992) is a 76-item survey with three dimensions represented by eight subscales: Academic Self-Concept (General School, Reading, Math); Non-Academic Self-Concept (Physical Appearance, Physical Ability, Parent Relations, Peer Relations); and General Self-Concept. The SDQ-I is designed for children from ages 8–12. From the eight subscales, only the General School Self-Concept (e.g., "I am good at all school subjects") was used in this study. General School Self-Concept encompasses the perception of the self related to their academic activities (DeVries et al., 2021). Response options included 1 = "False", 2 = "Mostly False", 3 = "Sometimes False, Sometimes True", 4 = "Mostly True",

Table 1: Academic achievement scale value

Values	Options
1	4.0 or higher (All A's")
2	3.75 to 3.99 (Mostly A's)
3	3.5 to 3.74 (More A's than B's)
4	3.25 to 3.49 (More B's than A's)
5	3.0 to 3.24 (Mostly B's some A's and C's)
6	2.5 to 2.99 (More B's than C's)
7	2.0 to 2.49 (More B's than C's)
8	1.5 to 1.99 (More C's than D's)
9	1.0 to 1.49 (More D's than C's)
10	less than 1.0 (Mostly D's and F's)

and 5 = "True". The SDQ-I has been used in self-concept-related research over the years (e.g., Cross et al., 2015; Hoge & Renzulli, 1993; Marsh, 1990, 1993; Möller et al., 2009) and is considered the most psychometrically validated self-concept measure for late childhood and early adolescence (Byrne, 1996; Guerin et al., 2019). The coefficient alpha for general school self-concept in the current study was .87.

Results

Table 2 presents the basic descriptive statistics and correlations for the study's variables to provide basic information about them (Hancock & Mueller, 2010). Correlations among the studied variables indicated that there is no statistically significant relationship between ethnic identity and academic achievement measured by GPA. Preliminary data screening confirmed a normal distribution. The residual plots confirmed normality and skewness. Univariate normality was assessed via examination of the kurtosis and skewness values. The kurtosis values ranged from -1.13 to 2.47 which may be reasonably considered as normally distributed (Hancock & Mueller, 2010). Descriptive statistics, Pearson *r* correlations, and path analysis were used to explore the relationship among the variables (Field, 2018). Path analysis is a type of structural equation modeling (SEM)

Table 2: Means, Standard Deviations, and Correlations among the study variables (n=186)

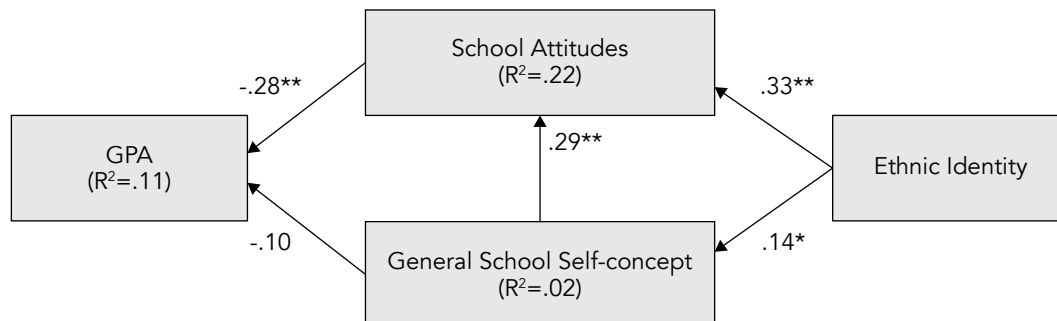
	1	2	3	4
1. Ethnic Identity	-			
2. School Attitudes	.37**	-		
3. GPA	-.07	.31**	-	
4. General School Self-concept	.14*	.34**	-.19**	-
M	3.79	5.86	2.79	3.13
SD	.80	.83	1.43	.48

Note: **p* < .05, ***p* < .01

without latent variables (Hancock & Mueller, 2006). Path analysis, an extension of multiple regression, represents relationships among variables with a visualized path diagram. As such, path analysis is bound by the same set of assumptions as linear regression (Norman & Streiner, 2003). The variables are either exogenous (independent variable) or endogenous (dependent variable).

A path analysis was performed using SPSS AMOS 27 to investigate model fitness and parameter estimates. Fit indices such as the Comparative Fit Index (CFI), Root Mean Square Error of Approximation (RMSEA), Normed Fit Index (NFI), and Goodness of Fit (GFI) were examined to assess the fitness of the model to the data, as recommended by Hancock and Muller (2010). For the original path model, model fit was not assessed, and fit indices were not reported since it was a saturated model. Its degrees of freedom were zero and there was no measurement error. Most models examined in empirical research focus on models that are not saturated to ensure that a researcher's interpretation of estimates is carried out only for models that are reasonable approximations of the analyzed data (Raykov & Marcoulides, 2006). The correlation analysis indicated that only the relationship between ethnic identity and academic achievement as measured by GPA was not statistically significant (see Table 2). Most of the previous studies on the relationship between GPA and scores on the MEIM-R have indicated no relationship between these variables (e.g., Guzman, 2002; Ivory, 2003; Meyer, 2004; Shermack, 1996; Sobansky, 2004; Velez-Yelin, 2002). Therefore, a path

Figure 1: A Path Model for Both African American and Hispanic students (n=186)



Note: **p* < .05, ***p* < .01

Table 3: Estimates of the Path Model for African American and Hispanic Students as a Whole ($n=186$)

Endogenous Variables	Exploratory Variables	Standardized Estimate	Standardized Error
GPA	School Attitudes	-.28**	.14
GPA	General School Self-concept	-.10	.20
School Attitudes	Ethnic Identity	.33**	.06
School Attitudes	General School Self-concept	.29**	.10
General School Self-concept	Ethnic Identity	.14*	.04

Note: * $p < .05$, ** $p < .01$

model examining relationships among the variables without a direct path between ethnic identity and GPA was tested (See Figure 1).

Overall fit index values indicated that the model provided a good fit to the data with a CFI value of 0.99, a RMSEA value of 0.01, a GFI value of 0.99, and a NFI value of 0.98. Marcoulides and Yuan (2017) have proposed a set of descriptors with a range of adjectives associated with certain values of the RMSEA (.01 = "excellent", .05 = "close", .08 = "fair" and .10 = "poor") and the CFI (.99 = "excellent", .95 = "close", .92 = "fair" and .90 = "poor"). Kline (2015) also provided recommended values for the different fit indicators as CFI (>0.90), GFI (>0.90), RMSEA (<0.08), and NFI (>0.90) to show a good model fit. Of the five paths tested, four yielded statistically significant path coefficients. A path that was not statistically significant was a path between general school self-concept and GPA. Overall, the model accounted for 11% of the variance in GPA, 22% of the variance in school attitudes, and 2% of the variance in general school self-concept. The proportion of variances shows the strength of the relationship between exogenous (independent variable) and endogenous (dependent variable) variables. From the results, general school self-concept had the weakest relationship with academic achievement among all variables in the model. Although the results of the subgroups' data analysis would be interesting, separate data analyses for each subgroup (African American students and Hispanic students) were not performed due to the smaller sample sizes for each subgroup. Based on Kline's (2016) sample size guidelines for analyzing data using SEM, any sample size below 100 was not recommended for any type of SEM technique. Although Kline considered a sample size of 100 to 200 as acceptable, having more than 200 cases is strongly recommended. The sample size of this study did not have enough to reach the acceptable sample size for each subgroup of African American and Hispanic students. Future research should further examine each subgroup intensively with acceptable sample sizes. Table 3 presents the main results of the measurement model with standardized estimates. To test if ethnic identity was indirectly related to GPA through school attitudes or general school self-concept, the indirect effects were analyzed. Table 4 presents the standardized estimates of

the indirect effects in parentheses along with the size of the effects. Through school attitudes, ethnic identity had a significant indirect link with GPA ($p < .01$). Also, the general school self-concept had a significant indirect link with GPA through school attitudes ($p < .01$).

Discussion

Contrary to the results of several previous studies (Oyserman et al., 2003; Pizzolato et al., 2008; Worrell, 2007; Yasui et al., 2004), the results of this study indicate that ethnic identity is not related to self-reported GPA for low-income Hispanic and African American students. A conflicting result between some of the previous research and current research may be due to the different types of samples, since previous studies' samples of students did not necessarily include gifted students (Oyserman et al., 2003) or examined moderately high-income gifted (Worrell, 2007) and high-achieving students who were not low-income specifically (Pizzolato et al., 2008; Yasui et al., 2004). Unlike previous studies, participants of this study were high-ability students from low-income families. Regardless, the result of non-association between ethnic identity and self-reported GPA among low-income high-ability students is notable and should be examined further. Although there was no relationship between ethnic identity and self-reported GPA, this study found that the strong ethnic identity of students was related to positive school attitudes among Hispanic and African American students. There was a significant indirect effect of ethnic identity on GPA through school attitudes. The general school self-concept also had a significant indirect link with GPA through school attitudes.

These results are consistent with previous research indicating that cultural perception is associated with academic attitudes and achievement (Caldwell & Obasi, 2010; Cooper & Sánchez, 2016). The findings of this study suggest that heightened ethnic identity may help low-income high-ability Hispanic and African American students develop or maintain positive school attitudes, which may contribute to academic performance in school (Geddes et al., 2010).

The findings of ethnic identity in relation to academic self-concept showed that ethnic identity was associated with the general-school self-concept among

Table 4: Indirect effects of the model

Endogenous Variables	Exploratory Variables	Indirect Effects
GPA	General School Self-concept	-.49 (-.08)**
	Ethnic Identity	-.45 (-.10)**

Note: * $p < .05$, ** $p < .01$; values in parentheses are standardized estimates.

African American and Hispanic students. However, the result demonstrated in this study should be considered cautiously because this study did not analyze any differences in the two subgroups with path analysis due to the small sample size of each subgroup. Future research is strongly suggested with an appropriate sample size of each subgroup student population.

The lives and educational experiences of Hispanic and African American high-ability students need more research. High-ability students have the same needs for positive personal interactions as other students. In school contexts, many culturally diverse gifted students experience a tension between ethnic identity and academic success (Brulles et al., 2011). Researchers have argued that many African American students are forced to choose between a positive ethnic identity and a strong academic identity (Davidson, 1996; Ferguson, 2000; Fordham, 1996; Ogbu, 1987). Robinson and Biran (2006) examined 96 African American adolescents to understand the connections between African identity, study habits, and academic achievement. Although their study did not specifically examine ethnic identity, the results of the study demonstrated that Black students' feeling responsible for the entire Black community was positively related to the amount of effort applied to performing well academically. In terms of Hispanic students, McHatton et al. (2007) found that Hispanic students in both general education and gifted education described experiences of discrimination in school, with a majority of their experiences being related to ethnicity, academic ability, English language, or a combination of those (McHatton et al., 2007). Grindal and Nieri (2015) examined the role of ethnic identity with 193 Latino adolescents and found that ethnic identity was significantly associated with better academic performance measured by self-reported grades; however, students in that study were not specifically from low-income nor identified as gifted or high-achieving.

High-ability students from low-income ethnic groups may have faced challenges such as discrimination and prejudice, the use of biased or inappropriate assessments, and lack of parental knowledge about their academic abilities (Baldwin, 2005). However, some low-income Hispanic and African American students perform well in academics. Strong ethnic identity may help students to maintain their personal values and have a positive attitude toward school even when their interactions with others within the school make them feel that they should have different values and behaviors

(Webber, 2017). The results of this study indicated that the development of a strong ethnic identity may be one of those factors supporting positive school attitudes and positive self-concepts among culturally diverse low-income gifted students within the school context, leading them to perform well in academics. The value of encouraging the ethnic identity of high-ability students from low-income families should not be undermined to support their academic performance.

Limitations

This was a study of high-ability African American and Hispanic students from low-income households, using a test score or performance entrance criteria. Because there were not enough students from other ethnic groups to statistically analyze in the study, our sample consisted of African American and Hispanic students. Future research on students of other ethnic groups would provide a more comprehensive understanding of the relationship between ethnic identity and academic achievement. GPAs of participants were generally high (Mostly A's or More A's than B's range), requiring caution about the generalizability of the results to all gifted and talented students. Even though students were not required to have high GPAs to participate in the program, school districts might nominate high-achieving students as a convenient way of identifying qualified students; providing students' performance portfolios or appropriate work samples with recommendation letters could be an extra burden for many school staff members. Additionally, this study collected self-reported GPAs, which may not reflect the actual GPAs of students. Since getting official GPAs required additional processes from school administrators of 13 different school districts/divisions, it was not possible to coordinate and receive all participating students' official GPAs by the registration deadline. Considering that a self-reported GPA could be obtained from the SAAS-R (McCoach & Siegle, 2003), it was used instead of an official GPA for this study; however, additional future research with students' actual GPAs will provide more accurate information.

The self-reported GPAs were ordinal data processed as continuous data throughout data analysis. There is debate among researchers about the legitimacy of such analysis; however, many researchers need to make informed decisions about how to analyze such data. Many data sets in social sciences and medical sciences, strictly speaking, are at the ordinal level, such as data sets

from Likert-type scales, but are analyzed as intervals in practice (Cohen, 2001). Some researchers suggest that if ordinal data has many categories, analyzing ordinal data with continuous data does not produce severely biased results (Cohen, 2001, Mîndrilă, 2010; Lorton & Rethman, 1990; Robitzsch, 2020; Rhemtulla et. al., 2012). Several researchers suggest meeting certain conditions such as enough sample sizes of more than 30 or a skewness and kurtosis value of less than an absolute value of 2.0 (Cohen, 2001, Heidel, 2023; Lorton & Rethman, 1990) for this practice. However, cautious interpretation of results is required and future research with the actual GPA obtained from school records is strongly recommended. Additional research on supporting or impeding factors influencing the academic achievement of high-ability students from low-income households will be a valuable addition to the field.

The participants were from geographically limited areas within one state, requiring caution about the generalizability of the results to all Hispanic and African American students. Despite the presence of different educational opportunities related to ethnicity in educational settings in the United States, there is a lack of research on the impact of students' ethnic background on their education and educational experiences (Henfield et al., 2008; Tate, 1997). Researchers in the gifted education field have examined diverse socio-emotional aspects and academic achievement of African American gifted students and Hispanic gifted students; however, there is still insufficient research on their educational experiences and ethnic identity development (Worrell, 2007). This area of research could advance our under-

standing of the role ethnic identity development plays in improving the academic performance of low-income gifted students. This study did not explore each subgroup intensively due to the small number of participants in each subgroup, but more extensive research on each subgroup would be beneficial.

Conclusion

Adolescence is a period when identity formation occurs (Brown et al., 2008). At this point in their developmental process, students have the cognitive skills to reflect on how society evaluates their ethnic group. Therefore, low-income African American and Hispanic gifted students should gain a sense of who they are and understand their background to prevent becoming discouraged by obstacles in the school system (Robinson & Biran, 2006). Understanding students' backgrounds and increasing their ethnic identity exploration may encourage positive school experiences for low-income ethnically diverse students, potentially reducing the achievement gap. Previous literature has documented inconsistent findings regarding the extent to which ethnic identity contributes to psychological well-being and academic performance among adolescents (Caldwell & Obasi, 2010; Cokley & Chapman, 2008; Cooper & Sánchez, 2016; Worrell, 2007). The current study adds to an emerging literature focused on ethnic identity, academic self-concept, school attitudes, and academic outcomes among ethnically diverse low-income high-ability students.

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