

## **Contradictions of Adolescent Self-Construal: Examining the Interaction of Ethnic Identity, Self-Efficacy and Academic Achievement**

*Margaret Zoller Booth*  
Bowling Green State University

*Sara Abercrombie*  
Northern Arizona University

*Christopher J. Frey*  
Bowling Green State University

*This research examines the relationship between ethnicity, ethnic identity, self-efficacy, and academic achievement within a multi-ethnic mid-sized city in the US Midwest. Utilizing a mixed-methods approach, middle and high school adolescents (Fall, N=482; Spring, N=392) were surveyed and interviewed over the course of one year to investigate the interaction of these variables within the context of their school climate. Quantitative analysis indicated that prior Math achievement and ethnic identity predicted self-efficacy. The qualitative results support this finding, indicating that for some minority groups, a strong ethnic identity may be a protective factor in efficacy development. The complexity of the relationship between youth ethnic identity on an individual level and within the context of school climate and community is highlighted through the mixed methods analysis.*

### **Contradictions of Adolescent Self-Construal: Examining the Interaction of Ethnic Identity, Self-Efficacy and Academic Achievement**

Within the context of the United States, youth from different ethno-racial backgrounds respond in various ways to the sociocultural contexts of their schools and the surrounding communities. The position and status of their own cultural group within their community often influences adolescents' self-perception and their motivational level toward educational aspirations (Schunk, 2003). To contribute to understanding this complex phenomenon, this study examined the relationship between race/ethnicity, strength of ethnic identity, and feelings of self-efficacy within a multi-ethnic school system in the Midwest. It also investigated the relationship between these variables (ethnic identity and self-efficacy) and academic achievement in math and reading.

#### **Conceptual Framework**

Theoretical frameworks supporting the necessity for studying “the self” in relation to healthy youth development have proliferated since Erikson’s (1950) initial analysis of the significance of understanding the self and identity. Identity development during adolescence includes the formation of a sense of self. The *symbolic interactionist perspective* (Harter, 1999) suggests that individuals internalize the appraisals of significant others (i.e., family, peers, and teachers) in

their formulation of several measures of the self. The study of the self has sprouted detailed analyses of self-concept, self-esteem, and self-efficacy (Bandura, 1977; Simmons, Rosenberg, & Rosenberg, 1973). While the study of self-concept is the general perception of oneself, self-esteem has been interpreted as the subjective feelings one has about those self-perceptions (Simmons et al., 1973). However, as a result of its demonstrated significance within the field of education (Usher & Pajares, 2008), Bandura's conceptualization of self-efficacy is the focus of this research. Bandura (1977) perceived self-efficacy as "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (p. 5).

Bandura (1977) noted that the interaction between the ecological environment and cultural interpretation may be influential on self-efficacy, which has been found to be significant for motivation. Within the ecological environment, Bandura noted four major sources which contribute to the formation of self-efficacy: enactive mastery experience (e.g., personal experiences with success or failure), vicarious experience (e.g. modeling from others), verbal persuasion (e.g., suggestions or prompts from self or others), and physiological reactions (e.g., biofeedback) (Bandura, 1977). All of these shape individuals' beliefs that they may or may not possess competence or the ability to perform a task. These frameworks will assist in conceptualizing our understanding of the connection between ethnic identity, self-efficacy, and academic achievement.

### **The Importance of Ethnic Identity for Adolescents**

Adolescent identity development, as conceived by Erikson, is multifaceted and generally has been considered to incorporate three elements: 1) abilities and interests; 2) identifications with other people; 3) opportunities available in society (Arnett, 2016). In the process of identifying with other people, the importance of identifying, or not, with one's ethnicity becomes increasingly salient during adolescence into emerging adulthood (Arnett, 2016). Scholars have defined the multi-faceted development and strength of ethnic identity differently, but generally focus on knowledge of ethnic history including language, in addition to exhibiting feelings of belonging, commitment, and self-labeling as a member of one's ethnic group (Phinney, 1992). More recently, some researchers focus on the exploration and affirmation element of ethnic identity (Fisher, Reynolds, Hsu, Barnes, & Tyler, 2014). Increasingly, research suggests that youth begin to interpret the complexity of identity as a result of an increased *group consciousness perspective* of ethnic and racial identity (ERI), and this influences self-identity in relation to other individuals (Rivas-Drake et al., 2014). As a result, much contemporary research uses the term ethnic and racial identity/ERI (Rivas-Drake et al., 2014).

The ERI framework emphasizes the role of the individual in developing ERI, noting how adolescents contextualize, elaborate, negotiate, internalize, and explore their ethnic identity (Umaña-Taylor et. al., 2014). Individuals' search for ERI is often dependent on developing a *positive affect* toward their racial-ethnic group (Umaña-Taylor et. al., 2014). These positive effects are normally influenced by one's ethnic and racial groups, including family, peers, and community, as these groups generally provide affirmation for the youth (Umaña-Taylor, 2004).

Drawing on Erikson's theory of identity development and social identity theory (Tajfel & Turner, 1979), which posits that the development of self-concept is impacted by group

membership, Phinney (2006) developed a line of inquiry focused on ethnic identity. The interpretation of one's ethnic identity is particularly salient for adolescents who interpret their own ethnic status differently in relation to their position within their community. This is especially complex for ethnic minority adolescents, who often have difficulty seeing themselves within dominant youth culture and therefore more consistently face discord between their home culture and that represented in everyday context (French, Seldman, Allen, & Aber, 2006; Phinney & Rosenthal, 2001). In contrast, individuals identifying with the dominant culture may not view ethnic identity with as much salience, as their identity is more typically represented in their everyday lives. For example, Phinney (1989) found ethnic identity to lack significance for Whites who, when part of the majority culture, are generally not forced to compare themselves daily with another cultural group. Similarly, Umaña-Taylor (2004) found that ethnic identity was less salient for Hispanic students in schools where they were the majority culture compared to schools in which they were in the minority. Yet, even with the expansion of research on ethnic identity, Umaña-Taylor (2004) claims "we know relatively little about the influence of social context on ethnic minority adolescents' ethnic identity and self-esteem" (p. 141).

Justification for studying ERI research among youth has emerged as ERI and a number of constructs from different facets of youth's experiences have been found to relate. Specifically, a consistent positive link between a strong ERI among ethno-racial minorities in the US academic outcomes is one of the most compelling research findings (Rivas-Drake, 2014). However, in addition to academics, the majority of research has focused on psychosocial factors. A strong ERI has been found to be a positive protective factor from ethnic discrimination (Toomey et.al, 2013) especially for African Americans (Rivas-Drake, 2014) and most positively for Black females (Rivas-Drake, 2014). Research pertaining to Hispanic youth is harder to summarize, given the varied Hispanic populations studied. Most relevant to this study, research with Mexican American youth has found a relationship between ERI and self-esteem, coping behaviors, optimism, and general prosocial tendencies (Rivas-Drake, 2014).

### **Academic Self-efficacy Among Youth**

The study of the self has increasingly focused on self-efficacy within the academic realm as increasing evidence points to its mediating effects on students' academic achievement (Zimmerman, 2000). Within the field of education, the conceptual frame of self-efficacy, more than self-esteem or self-concept, has demonstrated the greatest contribution to understanding the significance of self-analysis and academic achievement. Zimmerman (2000) illustrates thoroughly that the history of the study of self-efficacy has "clearly established the validity of self-efficacy as a predictor of students' motivation and learning" (p. 89).

According to Galla, Wood, and Langer (2014), "self-efficacy predicts effortful engagement, which in turn predicts academic performance" (p. 297). A great deal of self-efficacy research has focused on domain specificity, and significant associations between self-efficacy and particular subjects such as math or reading are commonly identified (Butz, 2015; Pajares, 1996; Usher & Pajares, 2008). However, increasing evidence demonstrates the importance of the distinction between academic and non-academic self-efficacy rather than differentiating between self-efficacy in specific academic disciplines. Academic self-efficacy focuses on individuals' assuredness that they can perform academic tasks successfully. Individuals make "largely

cognitive evaluations of their perceived capability without deliberately reflecting on their feelings generated by those evaluations” (Bong & Skaalvik, 2003, p. 8-9). Bong and Skaalvik (2003) attribute this to the fact that academic self-efficacy of verbal and math scores are often highly correlated. Furthermore, this correlation occurs because “students do not undergo internal comparison processes when judging their self-efficacy” (p. 23).

Race/ethnicity has been found to be significantly tied to some outcomes of self-efficacy research. For instance, a study in Boston that investigated the predictive power of self-efficacy on math scores found that self-efficacy had a stronger relationship with prior math achievement for the Hispanic students compared to White students (Stevens, Olivarez, Lan, & Tallent-Runnels, 2004). Beyond specific subject-related self-efficacy, some research has found racial/ethnic differences in perceived barriers to future success, influencing their level of overall self-efficacy in achieving one’s goals (Hill, Ramirez, & Dumka, 2003). Research also shows that self-efficacy is tied to ERI, as it can be influenced by a reciprocal relationship between individual youth characteristics, such as ethnicity and SES, and the socio-cultural context of the school (Schunk, 2003). Similar to findings on ethnic identity, because strong peer networks aid self-efficacy, minority students in institutions where they are the majority have been shown to develop a stronger self-efficacy compared to when they are numerically a minority (Rodgers, 2008; Schunk, 2003). As a result, school context and climate is essential to study when seeking to understand youth self-efficacy (Schunk & Gunn, 1986).

### **The Current Study**

Prior research indicates there are ethnic group differences on ethnic identity (Booth, Curran, Frey, Gerard, Collet, & Bartimole, 2014) and it is well documented in the literature that there are ethnic group differences on standardized tests of academic achievement (Institute of Education Sciences, 2015). Further, past research has indicated that academic performance is related to academic self-efficacy (Pajares, 1996; Stevens et al., 2004), but we do not yet understand the relationship between ethnic identity and academic self-efficacy. Our research explored whether ethnic identity might serve as a protective factor that explains some of the unique variance of academic self-efficacy above and beyond what is predicted by academic performance measures.

In the current study, we used a multifaceted approach to examine the relationship between ethnicity, ethnic identity, mathematics and reading performance, and academic self-efficacy in order to identify how adolescents construct their academic self-efficacy. Since research indicates the importance of context in the development of self-construal, we first examined whether ethnic status predicts strength of ethnic identity, prior achievement (mathematics and reading scores), and ethnic identity. Then, in order to test the relationship between different factors and self-efficacy, we tested whether ethnic identity and prior achievement predict academic self-efficacy, as well as the relative strength of each in predicting academic self-efficacy. These quantitative analyses are paired with content analysis of interviews conducted with a sample of adolescents, to provide further insight into how adolescents build their own self-construals, with a focus on their academic lives.

## Research Questions

1. Within the context of a diverse Midwestern school setting, how do students from various ethnicities differ in terms of academic self-efficacy?
2. To what extent does ethnic identity and prior academic achievement in mathematics and reading each predict academic self-efficacy?
3. To what extent does ethnic identity predict academic self-efficacy above and beyond the variance accounted for by prior academic achievement?
4. How are adolescent perceptions of school experiences related to their ethnicities, ethnic identities, academic performance, and academic self-efficacy?

## Methodology

This study examined the relationship between ethnic status, strength of ethnic identity, feelings of self-efficacy, and academic achievement among adolescents in a multi-ethnic Midwestern school district. This paper is drawn from a four-year longitudinal multi-strand concurrent mixed method design (Tashakkori & Teddlie, 2003). The current results report data from year two of the study and build on work previously published in a prior article (Booth et al., 2014). This study was approved by the authors' Institutional Review Board.

## Research Context

**Research setting.** The Lakeport School District (a pseudonym), located in northern Ohio, was selected as the research site because its ethno-racial demographics are comparable to national averages, while experiencing slow economic and demographic growth common to the Great Lakes region. Lakeport's population was about 16,000 in 2010, and nearly twice as many people reside in the school district. Populated in the 19th Century mainly by German and Irish immigrants, its strong economic base began attracting Hispanic and Black residents in the 1920s (Valdés, 2000).

Lakeport's ethno-racial demographics reflect these patterns. When this study began in 2009-2010, the average daily student enrollment was about 4200 students, of whom 15.1% were Hispanic, 7.5% African-American, 12.8% multi-racial, and 64.0% White. Furthermore, 57.8% of the students were identified as economically disadvantaged, 6.9% as English language learners, and 1.0% as migrants (Ohio Department of Education [ODE], 2010). Lakeport's Hispanic population is about three times higher than state average, and is approaching the national average; the number of multi-racial students is over four times higher than state and national averages.

**Lakeport and Ohio achievement gaps.** The student achievement gap in Lakeport School District is similar to state and national trends. Between 2008 and 2010, between 84% and 88% of students graduated, below the state's requirement of 90%. The three-year average graduation rates were highest for White (88.3%) and Multiracial students (87.3%); the averages were

considerably lower for Hispanic (81.6%) and Black students (71.2%). Despite these gaps, all four ethno-racial groups met Adequate Yearly Progress (AYP) for each of the three years in mathematics and reading. The low graduation rates for Black and Hispanic students suggest they are negatively influenced by additional characteristics outside of scholastic progress, requiring investigation.

**Participants**

Adolescents who participated in the first year (N = 1044) of data collection were invited to join again during the fall and spring semesters of the second year. In total, 979 students participated in the second year of data collection. Since the current study examines the role of prior year academic achievement as measured by state standardized test scores, only those students with test scores from the previous year were included in the analysis. This limiter excludes all students who were in the ninth grade during the first year of the study, since ninth graders do not take any state assessment. In addition, only students with complete data for the survey measures of interest and who had reported ethnicity were included in the current analysis. Finally, students who self-identified as Asian/Pacific Islander (n = 2), Native American (n = 9), or Other (n = 7) were omitted from the analyses, since there were not adequate numbers in these groups to conduct meaningful statistical analyses. In total, 482 students met all necessary inclusion criteria for this study. Table 1 summarizes these participants’ demographics.

Table 1  
*Frequency of demographic characteristics*

	Fall <i>N</i>	Spring <i>N</i>
Total	482	392
Sex		
Female	248	204
Male	234	188
Ethnic Status		
Black	34	23
Hispanic	60	48
White	296	242
Multi-racial	92	79
Grade		
Eighth	180	142
Ninth	189	158
Tenth	6	5
Eleventh	107	89

**Materials and Procedures**

**Ethnic identity.** Ethnic identity was measured by using 14 items from the Multigroup Ethnic Identity Measure (Phinney, 1992), a widely used measure that has been partially validated (Ponterotto, Gretchen, Utsey, Stracuzzi, & Saya, 2003). These items, which have been regularly combined as an ethnic identity score, are measured on a four-point scale (4 = strongly agree, 1 =

strongly disagree). Sample items include “*I have a lot of pride in my ethnic group and its accomplishments*”, and “*I have spent time trying to find out about my own ethnic group, such as its history, traditions, and customs.*” Two negatively worded items were reverse coded and scores for each individual were averaged across all items to arrive at a mean ethnic identity score (fall,  $\alpha = .87$ ; spring  $\alpha = .88$ ). To test the reliability of the instrument, principal axis exploratory factor analysis estimation with a varimax rotation was conducted with both the fall and spring data. In both analyses, the factor solution was determined based on the Kaiser rule and the examination of scree plots. For both the fall and spring data, a single factor solution was identified, explaining 24% and 27% of the variance respectively. This indicates that the scale was conceptually coherent but that quite a bit of unexplained variance remained.

**Academic self-efficacy.** Perceptions of students’ overall academic capability were measured with a seven-item scale that included non-discipline-oriented statements, such as “*I’m certain that I can learn the skills taught in school this year;*” or negatively worded with “*No matter how hard I try, there is some school work I’ll never understand.*” This measure was patterned after the Marjoribanks (2002) School Attitude Scale. Each of the scales were based on a four-point response format that ranged from 1 (*strongly disagree*) to 4 (*strongly agree*), where scores were averaged to arrive at a mean academic self-efficacy score (fall,  $\alpha = .85$ ; spring,  $\alpha = .89$ ). Higher scores on these scales reflect more positive evaluations of the school context. Principal axis estimation factor analysis with a varimax rotation was conducted on both the fall and spring data. In both analyses, the factor solution was determined based on the Kaiser rule and on examination of scree plots. For both the fall and spring data, a single factor solution was identified, explaining 49% and 59% of the variance respectively. This indicates that the scale was conceptually coherent and explained a large amount of variance, though additional validity investigations are warranted.

**Academic achievement.** During this study, the Ohio Department of Education administered two standardized exams which assessed reading, writing, mathematics, social studies, and science: the Ohio Achievement Test (OAT), given each spring to all students in third through eighth grade; and the Ohio Graduation Test (OGT). Scores from the annual standardized achievement tests were used as the measures of academic achievement in the current research study.

**Student interviews.** During the first year of the study, a sub-sample of students were selected using a semi-stratified-random process, resulting in 53 students in the first year, with 38 returning for a second year interview. Qualitative analyses were based on semi-structured interviews conducted once during mid-year in a comfortable study room at school. These conversational interviews explored students’ attitude about themselves, toward school, relationships with teachers and peers, academic expectations, and future opportunities. Some qualitative questions were adapted from the Simmons, Rosenberg and Rosenberg (1973) self-image interview protocol, including items that would assist in analyzing self-efficacy as part of self-construal. Students were asked, “*If I met your mom or dad (or individual raising you) how would they describe you to me? What would they say about you?*” The same question was asked about their teacher’s response to this question. The interview also included an introductory, open-ended section in which students were asked “*How do you like school this year? And compared to last year, how would you compare it?*” Because the larger study was a mixed-methods design from the beginning, strategies employed throughout the study for the qualitative

analysis included simultaneous analyses where a constant comparative method was used to discover emerging themes. In addition, post-hoc investigations were also conducted to investigate suggested explanations or contradictions to the quantitative results. In addition to the primary qualitative researcher, two graduate assistants contributed to interviewing and reliability of theme coding. This was conducted by all three interviewers cross-checking 20% of each other’s codes and finding 95% coder reliability.

**Results**

**Quantitative Results**

Descriptive data from all measures, including performance on mathematics and reading achievement tests, ethnic identity, and academic self-efficacy are reported in Table 2. Correlations between measures are reported in Table 3. First, we investigated whether students from various ethnicities differed in terms of academic self-efficacy. Two univariate analyses of variance (ANOVAs) were conducted, for the fall and spring data separately, with ethnic status as the between subjects factor and academic self-efficacy as the dependent variable. The assumptions for ANOVA were checked indicating that the data were normally distributed and there was no violation of homogeneity of variances (Levene’s test,  $p = .204$ ). Since the assumptions were met, the ANOVA is acceptable despite the unequal group sizes in our data (Keppel & Wickens, 2004). No between group differences were identified for academic self-efficacy for either fall or spring, ( $F(3, 478) = 1.46, p = .224$ ;  $F(3, 388) = .916, p = .433$ , respectively). These results indicate that we could identify no differences in academic self-efficacy based on ethnic status.

Table 2  
*Achievement and Perception Measures Means and Standard Deviations by Ethnic Status*

	N	Mathematics Achievement		Reading Achievement		Ethnic Identity		Academic Self-Efficacy	
		M	SD	M	SD	M	SD	M	SD
<b>Black</b>									
Prior Year		401.76	24.64	403.56	22.37				
Fall	34					2.88	0.40	3.16	0.50
Spring	23					2.88	0.39	3.09	0.63
<b>Hispanic</b>									
Prior Year		413.28	21.89	412.43	22.53				
Fall	60					2.86	0.49	3.12	0.43
Spring	48					3.06	0.43	3.16	0.41
<b>White</b>									
Prior Year		427.46	26.10	424.84	23.43				
Fall	296					2.55	0.45	3.23	0.51
Spring	242					2.60	0.47	3.23	0.52
<b>Multi-Ethnic</b>									
Prior Year		424.21	29.45	423.42	24.92	2.64	0.46	3.13	0.54
Fall	92					2.68	0.45	3.14	0.57
Spring	79								

Table 3  
*Bivariate Correlations between Achievement and Perceptions Measures*

	1	2	3	4	5	6
1. Math Score	1	.627*	.328*	-.114*	.291*	-.047
2. Reading Score		1	.266*	-.110*	.211*	-.061
3. Fall Academic Self-Efficacy			1	.084	.568*	.180*
4. Fall Ethnic Identity				1	.103*	.517*
5. Spring Academic Self-Efficacy					1	.192*
6. Spring Ethnic Identity						1

\*significantly correlated at  $p < .05$

In order to investigate whether ethnic identity predicts academic self-efficacy, above and beyond prior academic achievement, a hierarchical multiple regression analysis was conducted, where self-efficacy was the dependent variable and ethnic identity, mathematics achievement score, and reading achievement scores were the predictor variables. Mathematics and reading achievement scores were entered in step one, then ethnic identity was entered in step two, in order to test whether ethnic identity predicts unique variance in academic self-efficacy, above and beyond the other two variables. To reflect the longitudinal nature of the study, the mathematics and reading scores from the prior academic year and the fall ethnic identity data were used to predict the spring academic self-efficacy scores.

The step one model, which included both mathematics and reading performance as potential predictor variables and academic self-efficacy as the criterion variable, was statistically significant but only with mathematics performance as a predictor variable. Reading performance did not significantly contribute to the model and was therefore eliminated. This result was not surprising given the correlation between mathematics and reading scores identified in the current study, as well as in prior research (Bong & Skaalvik, 2003), though examination of the tolerance and VIF statistics revealed no multicollinearity violations, suggesting each variable is indeed distinct in the analysis. Ethnic identity was entered in the model in step two, resulting in a statistically significant model. These results indicate that prior mathematics performance but not reading performance influenced students' global ratings of academic self-efficacy; that prior year mathematics achievement and fall ethnic identity account for 10% of the variance of academic self-efficacy in the spring; and that ethnic identity indeed accounts for variance in academic self-efficacy above and beyond math achievement,  $\Delta R^2 = .02$ . These results demonstrate that the relationship between prior year mathematics achievement and academic self-efficacy endures throughout the school year and suggests that the relationship between ethnic identity and academic self-efficacy similarly persists. See Table 4 for a summary of the regression results.

Table 4  
*Regression Analysis Results of Mathematics Achievement, Reading Achievement, and Ethnic Identity on Academic Self-efficacy*

	Statistical Significance	Standardized Beta	R <sup>2</sup>
Step 1 Model	$F(1, 390) = 36.09, p < .001$		.085
Mathematics Achievement	$p < .001$	$\beta = .291$	
Reading Achievement*	$p = .577$		
Step 2 Model	$F(2, 389) = 22.807, p < .001$		.105
Mathematics Achievement	$p < .001$	$\beta = .310$	
Reading Achievement*	$p = .519$		
Ethnic Identity	$p = .003$	$\beta = .144$	

\*Omitted from model due to lack of statistical significance

**Qualitative Results**

**Perceptions of achievement gap.** As a result of the quantitative results demonstrating the influence of prior mathematics performance on global ratings of academic self-efficacy, transcripts were analyzed to investigate whether math emerged as a topic in interviews. The 38 students were never deliberately asked to discuss particular course subjects like reading or math, but they were asked broad questions about themselves and school. Yet, five of the seven African Americans interviewed voluntarily commented negatively about math, including all three females, who expressed a lack of confidence in their mathematics ability. For example “*Geometry is my least favorite. If I start out good, I tend to go down.*” However, an eleventh grade Black male student blamed his math weakness on attitude when he said, “*They say I can do good, but in math I don’t try, I just don’t like it.*” No other ethnic group discussed mathematics self-efficacy with such a consistently negative tone.

Unlike mathematics, reading was never discussed in a negative light in interviews, revealing no evidence as contributing negatively to self-efficacy for any students. On the contrary, Hispanic females most often expressed pride in their English skills, such as one tenth grade girl who emphasized that she was in “*English honors*” and an eleventh grader who “*has two English classes, and I like that.*” Thus, contributing to the quantitative analysis, this qualitative inquiry revealed that only mathematics was associated negatively with self-efficacy and this was limited to the Black students’ interviews.

**Overall self-efficacy.** As a whole, the 38 students interviewed expressed more positive than negative feelings about their self-efficacy, when discussing their own personal traits, with 115 positive self-efficacy comments to 47 negative. These 162 comments were coded as self-efficacy when the youth described their abilities toward a skill, including academic and non-academic abilities; however, for this paper, the focus of analysis will be on academic self-efficacy statements, or those statements that point directly or indirectly to personal capabilities related to academic/school skills.

When analyzing the students' interviews by ethnic status and gender, all groups except Black females had more positive than negative self-efficacy statements within the total 162 self-efficacy comments. To illustrate one example, self-efficacy toward schoolwork was demonstrated by an eleventh grade Black female who said, *"It's harder, just harder --the classes and I don't know, it's just difficult for me."* On the other end of the spectrum, the Hispanic females had the most frequent positive self-efficacy comments. For instance, in describing what she thinks her father would say about her, a ninth grade Hispanic girl suggested, *"He'd say I get my work done and get my homework in on time... Right now, even though I bombed this test in English -- there's only been that one bad test, but it will go up."* Even when experiencing failure, she recognized her ability to do better in the future.

**Ethnic identity and self-efficacy.** As a result of the quantitative findings that suggest a relationship between ethnic identity and self-efficacy, student interviews were also coded for statements that reflect attitudes about their ethnicity, such as 1) *When you have to complete a racial/ethnic question on a survey, do you know what to check or do these sorts of questions confuse you?* 2) *Do you think your ethnicity influences your relationships with others in school?* 3) *Do you think there are different expectations at school (or in the community) about you simply because of your race/ethnicity?* In response to the first question, no White students were confused about ethnicity demographic questions. Likewise, eight of ten Hispanic students and six of eight Black students also reported confidently answering about their race/ethnicity. However, more than half of the Multiethnic/racial students stated that the forms were confusing and that they often did not know what to check.

Analysis of responses to the ethnicity questions revealed several trends pertaining to the use of language and its role in ethnic identity. In Lakeport, the term Black was used more frequently than African American (including by Black participants) and all students used the term Mexican to refer to the Hispanic student population. Furthermore, Hispanic students discussed their bilingualism as a positive skill to possess, noting how they help other students with Spanish homework. However, some non-Hispanic students interpreted the use of Spanish as a way for Hispanic students to separate themselves. One ninth grade Multiethnic/racial female student complained, *"The Mexicans hang out with the Mexicans and speak Spanish so they won't be messed with."* Others did not appreciate having to learn Spanish in school because as one ninth grade male said, *"I live in Lakeport -- we don't speak Spanish."*

The influence of race/ethnicity on students' own self-analysis within the school environment was often reported based on how adults in the community spoke about them. For instance, Black males discussed the impact of social self-efficacy when they were asked if their ethnicity ever influenced their relationship with others in school or if there were different expectations of them because of their ethnicity. Black males reported that their parents or other adults often warned them how to behave in school because of their ethnicity. For example, one eleventh grade Black male said, *"Dad thinks, just because I am a big African American, I sometimes pose a threat to teachers. He said I got to be real careful how I approach them and how I speak to them."* Another eleventh grader said his mother warned him, *"Just don't act your color in front of people."* He explained that his mother meant not to act loud. Finally, a ninth grader also said his mother urged him to think carefully about which college to attend, because *"you just can't change your color."* As a result, while these comments may be focused on social competence,

they may influence academic self-efficacy because they warn of behaviors within an academic environment.

Students also expressed frustration about the parents of some of their friends. Several Black high school males said that girls at school were told by their parents that they could not date someone who is Black. One White eleventh grade female even said that *“one friend wanted to be friends with this one person but her mom wouldn’t let her because he was Black.”* Another White eleventh grade female expressed frustration with her own parent’s attitude when she explained. *“My dad, he kind of don’t like different races. He gets mad. Right now I have African American friends, but he don’t like them.... I’m afraid to bring them home to meet my dad. I don’t want him to offend them.”*

While most Hispanic students remained positive when discussing their ethnicity, a few students did express the concern that some adults in the community viewed them as *“lower class”* and as *“Mexicans”* in this region for one purpose *“to work manual labor.”* However, most students expressed disapproval of these opinions which they interpreted as *“stereotyping”* and *“racist,”* and generally interpreted their peers’ attitudes and behaviors as much more advanced than community adults. Furthermore, teachers often assisted students in understanding and addressing negative stereotypes, such as one Hispanic eleventh grade male student who recalled a comment by a male Hispanic teacher, *“when most people see a Hispanic kid they think they are going to drop out of school. So he says you have to prove people wrong.”* These reports of adult ethnocentric biases demonstrate students’ own awareness of ethno-racial stereotyping in the adult community, but reveal disagreement with these attitudes within their own peer community.

### Discussion

Holistic analysis of the quantitative and qualitative findings suggests several relationships between ethnic status, academic self-efficacy, and academic achievement for students in Lakeport. Most noteworthy for discussion include the influence of mathematics competency but not reading as a significant predictor of self-efficacy, ethnic identity as a significant predictor of self-efficacy, and the apparent strengthening of the relationship between ethnic identity and self-efficacy over the course of an academic year for adolescents. Furthermore, the qualitative results illustrate how individuals may be influenced through a *group consciousness* perspective where social stereotypes, including the influence of language stereotypes, may affect both ethnic identity formation and general self-efficacy for these youth.

Like other adolescent research linking mathematics achievement with self-efficacy (Schunk & Pajares, 2002), this study contributes to that body of literature, strengthening our perception of the importance of self-efficacy for academic achievement, especially mathematics. However, what is most notable in this study are the results demonstrating the unique significance of ethnic identity as a predictor of self-efficacy, even above and beyond math achievement.

Applying Bandura’s four major components to this analysis, we can posit that the importance of *enactive mastery experience* is evident when the success (or lack thereof) of math directly influences students’ later perceptions of their self-efficacy in math. What is also notable in this study is the continued influence that this appears to have on their efficacy as the year progresses.

It is likely that a snowballing effect occurs as they either continue to do well or not, continuing the correlation between math and self-efficacy.

Bandura's concept of enactive mastery experience could also help explain the development of ethnic identity, in addition to self-efficacy, when experiences with social stereotypes influence their exploration and affirmation of their own ethnic identity (Fisher et al., 2014). For example, it may be that the African American girls who spoke so negatively about their math skills did so partially as a result of academic and social enactive experience. These results suggest additional research is needed on stereotype threat with this population.

Similarly, African American males also expressed negativity as a result of experiences within their social environment. Black and Hispanic students in this study consistently expressed feelings of prejudice from community adults (most strongly felt by Black males), yet within this context, a strong, positive ethnic identity appears to be protective and provide some resilience within their school environment. Illustrating Umaña-Taylor's (2014), ERI framework these youth appear to recognize, contextualize, and negotiate their environment as they internalize and explore their own ethnic identity within different contexts. In particular, the Hispanic students described the significance that a strong family support system may have, in addition to their Mexican roots, cultural traditions, and bilingual talents. As a result, when the term Mexican is solely used to describe anyone of the Hispanic community, this may contribute as a strengthening element (whether accurate or not), as it provides a national cultural context to identity formation. Consequently, for the Hispanic population, a strong ethnic identity that is rooted in this national/cultural heritage may act as a protective mechanism when faced with academic and other challenges, as suggested by Phinney and Rosenthal (2001) and Rivas-Drake (2014).

Because the Hispanic students symbolically identified with a particular place, social identity theorists (Tajfel & Turner, 1979) might suggest that this provided them with a clearer interpretation of their social identity than the students who referred to themselves as Black. The more frequent use of the term Black for the African American students symbolically limited their identity to a color, and was further reinforced by parental perceptions of the social environment that necessitate protective facilitation. Within the Black community, these types of parental conversations, often referred to as "the talk" (National Public Radio [NPR], 2012) have thought to be necessary by parents in order to prepare their children, especially males, for the hostile environments with which they will come in contact.

However, the strength of the relationship between ethnic identity and its continued influence throughout the year may suggest that other components of Bandura's framework are at play. Students' self-efficacy may be influenced indirectly through *vicarious experience* and *verbal persuasion* as they observe and listen to others at home about their own sense of self and strong ethnic and cultural foundations. For example, even those who receive "the talk" from an older relative will use that as a directive of how to behave – blueprints for success. While "the talk" might appear to be a negative conversation, it is in fact a type of mentoring, and therefore could be interpreted as positively enhancing a strong ethnic identity. As students strengthen these skills, couched within their ethnic/cultural world, they may be able to negotiate their social and

academic environment at school better than if they had not had “the talk” and as a result be better students.

While negativity was often expressed by Black and Hispanic males about the community, they spoke positively about the school environment. It may be that the security felt within the school’s safe environment and also the enhancing messages at home counteract negative societal, peer, and community messages. As a result, this highlights some contradictions between the psychologically measured ethnic identity self-construal (using the MEIM) and an external socially imposed environment. As youth internalize, they interpret partially by choosing from various perspectives (teachers, peers, and other adults) in their self-construal (Harter, 1999). As such, the qualitative information in this study illustrates how these youths may be evaluating a variety of others perspectives (adults and peers) in the development of their own identity. That identity includes both an academic identity (am I a mathematician) and ethnic identity. How that identity subsequently influences their self-efficacy is at least partially influenced by the appraisals that they internalized as part of their enactive mastery experience.

While this study has limitations as a result of the unequal distribution of demographic groups, it provides substantial results for future investigations. The triangulation of data through quantitative and qualitative methods has strengthened the reliability and trustworthiness of its outcomes. Furthermore, a longitudinal study in an authentic middle and high school environment with a retention rate of 81% over the course of a year and using several sources of data speaks to the unique blend of analysis and strength of the conclusions. With these methods, we have provided a more thorough analysis of the importance of positive enactive experience with math in addition to positive experiences with ethnic identity when developing a sense of self-efficacy. Consequently, professional educators and parents may utilize what has been learned with these youth to assist in developing psychologically safe environments that encourage ethnic pride for all of their students within the school, family and broader community context.

**Author Notes**

*Margaret Zoller Booth* is a Professor at Bowling Green State University.

*Sara Abercrombie* is an Assistant Professor at Northern Arizona University.

**Christopher J. Frey** is an Associate Professor at Bowling Green State University.

Correspondence concerning this article should be addressed to Sara Abercrombie at Sara.Abercrombie@nau.edu.

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