Diversity, Difference, and Contact in Educational Settings:

Understanding the Ecological Factors Contributing to Positive Intergroup Relations

A Dissertation

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By

Amir G. François, B.A.

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Overview

The goal of the present work is to understand how aspects of diversity and difference within school environments contribute to the promotion of positive intergroup relations and the support of healthy social climates. This dissertation follows the requirements of the manuscript-style dissertation option, as defined in the Curry School of Education Ph.D. Dissertation Manual (2010) and the *Description of the Manuscript Style Dissertation Guidelines* (2013). The manuscript-style dissertation option calls for students to submit an introduction (or linking document) describing the conceptual and theoretical linkages among all three manuscripts and three first-authored completed papers (one submitted and two submission-ready). In adherence with these guidelines, I am the first author on all three of the included studies. Additionally, Study 1 is completed and will be submitted to *Group Processes & Intergroup Relations*, and Study 2 is complete and is under review at the *Journal of Teacher Education*.

All three studies are conceptually related while each making their own unique contribution to the field. The remainder of this proposal contains: 1) the rationale for and framework linking the three studies described in this proposal; 2) Study 1, *Interracial Friendliness and Conflict in American High Schools: The Role of Structural Features, Perceptions of Climate, and Opportunity for Contact*; 3) Study 2, *Pre-service Teachers' Multicultural Attitudes and Efficacy: The Differential Role of Individual, Interpersonal, and Training Experiences*; 4) Study 3, *Intergroup Contact Effects on Pre-service Teachers: Ethnic Identity and Social Cognitive Mediators of Multicultural Competence*.

Rationale for Work

Preparing for a Diverse Present

The early 21st century has been defined by shifting demographics, increased globalization, and pluralistic norms becoming the reality of most settings in the United States (Aud et al., 2013; Banks, 2006). Questions arise with this changing landscape: are we as society prepared for the growing pluralistic and multicultural world that is upon us? How can we prepare children to grow up to become naturally understanding and competent members of their current and future heterogeneous environments? It is imperative that our citizens are equipped with the skills and dispositions (e.g., cross-group cooperation and knowledge, conflict resolution, etc.) necessary to overcome these social differences (Dessel, 2010; Karcher & Fischer, 2004). But what are the best ways to create environments that can help shepherd all children on the trajectory of engendering these? These questions are pertinent and inevitable due to research that chronicles the pervasiveness of stereotypes (i.e., assigned characteristics to other solely on the basis of group membership), biases (e.g. showing more positive affect toward in-group than out-group members) and other prejudiced attitudes that are universally held by children and adolescents across the United States (Bigler & Hughes, 2009). Reasons to be proactive in the development of intergroup competence are many and varied. First, all children who engage in social interaction are at risk for maladaptive and negative developmental outcomes that can affect major pillars of a successful and productive life, including core values, individual characteristics, and future aspirations and goals (Bigler & Liben, 2006; Steele, 1997). Also, studying positive intergroup relational influences can lead to earlier intervention options in promoting positive intergroup behaviors – tasks that may prove easier than undoing the damage of hardened prejudiced attitudes (Banks, 2006).

Leveraging the environment. Fortunately, intervention strategies in intergroup relations are many, and the dynamic, diverse environments that we are preparing our youths to thrive within might offer a channel for achieving this goal. The school context, consisting of academics, participation in school activities, peer interactions, and student-teacher relationships, is a primary intervention point for child and adolescent behavior and development (Solomon, 1997; Crosnoe et al, 2004). Schools are thought to be powerful agents of social development due to the provision of numerous opportunities for peer influence, social identity construction, and their functioning as one of the first places where social conflicts emerge and are managed (Phinney et al, 2007). These classroom social interactions can lead to positive outcomes, such as positive identity development, academic achievement, and social acumen (Sheets, 2003). Due to the nature of the experience in a classroom (e.g., the interaction between students, teachers, and in the context of learning), this environment can be as relevant to intergroup competence as home and neighborhood contexts (Dessel, 2010; Sheets, 2003).

Intergroup Contact in Social Settings

The contact hypothesis states that when individuals from different groups interact with each other, under specific conditions, the encounter will lead to positive out-group attitudes for all parties that are involved (Allport, 1954; Pettigrew & Tropp, 2011). This idea may seem simple and intuitive, but healthy and positive contact between diverse individuals is not the norm in most diverse settings, with conflict and segregation usually the resulting outcomes (Dixon, Durrheim, & Tredoux, 2005; Pettigrew & Tropp, 2011). Intergroup contact is especially efficacious at forming positive intergroup attitudes when close cross-race friendships and relationships are formed and maintained (Aboud, Mendelson, & Purdy, 2003; Davies, Tropp, Aron, Pettigrew, & Wright, 2011). Contact's effectiveness is also, however, dependent upon

environmental and personal characteristics that can moderate the extent to which experience influences attitudes and relationship choices (Pettigrew & Tropp, 2011).

Contact conditions. School and classroom demographics (i.e., number of students and racial diversity) are ecological features that are directly determinant of intergroup contact between students from dissimilar cultural and racial backgrounds (Dessel, 2010; Khmelkov & Hallinan, 1999). When considering student composition features, research has found that having a racial and ethnically diverse population is necessary, but not sufficient to promoting positive intergroup contact due to the fact that there is a higher probability that students with dissimilar backgrounds will interact more often than if they attended more homogenous educational environments (Hallinan, 1982; Pettigrew & Tropp, 2011). A group of studies found that majority students attending ethnically heterogeneous schools were more open to befriending minority students then their majority counterparts who attended more ethnically homogeneous schools (Margie, Killen, Sinno, & McGlothlin, 2005; McGlothlin & Killen, 2006). Bellmore and colleagues' (2012) recent article, using more nuanced measures of ethnic heterogeneity within school contexts, echoed past research findings that ethnic composition appears to have positive associations with intergroup attitudes and behaviors when at the higher and lower distributions of school ethnic diversity, but not when threat is aggravated by equal group representations (Bellmore et al., 2012; Juvonen et al., 2006; Moody, 2001).

While ethnic composition—in certain conditions—can promote positive intergroup outcomes, diverse environments can become segregated due to a number of societal, community, and school idiosyncratic factors resulting in negative cross-group effects. Wilson and Rodkin (2012) found that for both African-American and European-American children, a more segregated environment meant less acceptance by their cross-ethnicity counterparts, yet racial

group differences emerged for how same-ethnicity peers accepted and rejected students depending on their status and ethnicity. The moderation effect of composition and structure is further evidenced by studies that found ethnic composition, through the availability of same-ethnicity peers and in-group bias salience, helped determine racial preferences and friendship nominations (Bellmore, Nishina, Witkow, Graham, & Juvonen, 2007; Jackson, Barth, Powell, & Lochman, 2006).

Intergroup outcomes. Bellmore and colleagues' (2012) study, like other current rigorous work in the field, represents a growing movement from strict attitude and prejudice outcomes and friendship choices to measuring a more holistic conceptualization of students' experience of interracial climate through focusing on self-evaluations of peer interactions, teacher behaviors, and school norms – foundations to creating positive intergroup contexts and environments (Bellmore et al., 2012; Green, Adams, & Turner, 1988). Compared to seminal studies in intergroup relations (viz., Allport, 1954), contemporary work has done well to make the explicit distinction between studying the formation of prejudiced attitudes and preferential behavior (e.g., in-group bias and greater liking) toward one's own group. Not all research in the field has historically made this distinction (Aboud et al., 2003; Nesdale, 2008), but to truly understand the developmental process of cross-group stereotypes, other group beliefs must be teased apart from the large body of intergroup relational outcomes. Studies have found numerous positive intergroup outcomes such as mutual appreciation of the ethnic out-group and future ethnic-blind friendship choices (Cazabon, Lambert, & Hall, 1993; Lambert & Tucker, 1972); these evaluations, however, have not included behavioral intergroup outcomes and require further research to predict future relations (Paluck, 2010).

School Context Influences

For intergroup contact to even have a chance of occurring, environmental features must imitate the conditions described above. The bioecological model of human development (Bronfenbrenner & Morris, 2006) provides a framework to conceptualize the interrelation between contextual aspects of educational settings (e.g., structural features, teachers, etc.) that not only have direct influences on intergroup relations, but these elements along with other environmental inputs form climates that both implicitly and explicitly promote or hinder intergroup contact and relations in school settings (Bellmore et al., 2012; Benner & Graham, 2012; Green et al., 1988). Understanding how the dynamic interrelations between the structural features that comprise and the social climates that are promulgated within schools contribute to the intergroup outcomes of the individuals can lead to the engineering of environs that promote healthy intergroup attitudes and skills.

Structural features. Tseng and Siedman's framework for understanding the functioning of social settings operationalizes and disentangles the complex role that both structural features and social processes vital to establishing positive intergroup relational outcomes (2007). Organizational policies and objective attributes, while implemented and usually operating distinctly from individual-level factors, are foundational as they shape the external context that intergroup relations are embedded within the setting (Dessel, 2010; Paluck, 2010). Grouping students according to past and perceived ability levels, a strategy for schools to streamline education delivery, and school-wide extracurricular offerings (e.g., sports teams, special interest clubs, and volunteer associations) can determine the initial opportunity for intergroup contact (Khmelkov & Hallinan, 1999). As schools provide additional subgroupings that span racial and cultural divisions, opportunities for more intergroup interaction, that satisfy Allport's conditions, are increased (Chavous, 2005; Dessel, 2010; Paluck, 2010). These sustained school-based

dealings can promote cross-race friendships and in turn form more positive intergroup attitudes (Hallinan & Teixeira, 1987; Khmelkov & Hallinan, 1999; Turner, Hewstone, & Voci, 2007), however, activity choice can be correlated with socio-demographics and can lead to segregation as well (Ream & Rumberger, 2008). Sheer size of schools and classrooms can also negatively affect opportunity for intergroup contact, strongly evidenced by McPherson & Smith-Lovin's (1987) observational and survey findings that show that very large groups tend to force students to create smaller and more manageable circles based on comfort and affinity, thus limiting the circle of friendship and relationship choices to ethnically and racially similar peers.

School climate. A student's experience of their school's climate affects their sensitivity towards discrimination and prejudice within educational settings, shaping the success of intergroup contact (Bellmore et al., 2012; Benner & Graham, 2012; Pettigrew & Tropp, 2011). Schools and classrooms that promote norms of fairness, inclusion, and care have been associated with positive intergroup relations (Bellmore et al., 2012; Mattison & Aber, 2007). Peers are integral to the interpersonal processes that form the basis of climate and have been shown to encourage and promote intergroup contact (Pianta et al., 2005). Peer effects are so strong that even indirect (i.e., extended intergroup contact through same-race friends, Cameron, Rutland, Hossain, & Petley, 2011) and normative forces (i.e., peer role models & pressure, Paluck, 2010; and peer social norms, Tatum, 2003) shape children and adolescents intergroup behaviors.

Teachers. Research focusing on the extent to which teachers influence students' intergroup outcomes has found that through the establishment and reinforcement of positive classroom behaviors and domain-spanning (e.g., racial, cultural, socio-economic) diversity messaging, norms of interracial sociability and inclusion infuse not only the culture of the classroom, but also the psyche of the students (Bellmore et al., 2012; Hallinan et al., 2009;

Khmelkov & Hallinan, 1999). Creation of this climate can also be facilitated through a teacher's

explicit effort to expand the social landscape of the classroom through pedagogical choices, such

as acknowledging prowess and dispersing rewards across a range of skills (e.g., academic, pro-

social, athletic, artistic) and deliberate non-use of group characteristics that deepen group

divisions (Patterson & Bigler, 2006).Teachers and other adults in school settings are responsible

for creating opportunities and climates that are either conducive to or inhibitory of intergroup

relations (Pianta et al., 2005). Cultural characteristics and attitudes (e.g., race, orientation toward

diversity) have been linked to a teacher's ability to provide more supportive and culturally-

responsive environments for their ethnic minority students to thrive within (Grant and Gibson,

2011). Teacher education programs have adopted a variety of different approaches to addressing

the need for training more culturally sensitive teachers such as specific courses on

multiculturalism and integrating multicultural training into all coursework and field experiences.

(Cicchelli & Cho, 2007). After understanding the main effects of these ecological factors, the

variability present within individuals must be accounted for to truly employ the knowledge

gained effectively.

Generalizing Ecological Effects

Structuring effective intergroup contact experiences and ultimately engendering

intercultural competence in individuals is dependent upon the idiosyncratic characteristics of the

individuals in question. Ethnic background and cognitive processes can guide the perceptions of

the setting in which social relationships occur and consequently the social group dynamics that

can influence the development and behavior of individuals in a setting (Rutland, Killen, &

Abrams, 2010).

Sociocultural lens. Personal characteristics interact with the environment to create worldviews and develop the competencies integral to functioning in a pluralistic and multicultural society (Ponterotito, Baluch, Greig, & Rivera, 1998). Individuals view and experience the world through a sociocultural filter created by many personal factors formed throughout their lifetime (Helms, 1990; Milner, 2006). These factors include disposition regarding ideas about diversity, openness to diverse perspectives, and willingness to challenge one's own beliefs (Engberg, Meader, & Hurtado, 2003), and ethnic identity, a dimension of social identity that is determined by one's ethnic group membership and incorporates associations between norms, behaviors, and values of that specific group (Phinney, 1992). Importantly, ethnic identity helps to create a foundation that dictates how individuals view cultural difference and respond to these distinctions in social settings (Helms, 1990; Sleeter, 2008; Sleeter & Owuor, 2012).

Socio-cognitive barriers. Contextual features have also been shown to be associated with social-cognitive strategies that determine the likelihood of intergroup contact success. One such mediating route concerns the reduction of anxiety, or feelings of worry and doubt that you will have poor interactions with out-group members (Hewstone et al., 2002; Stephan & Stephan, 1985, 2000). Research focused on this mechanism has demonstrated repeatedly that intergroup contact typically reduces intergroup threat and anxiety, and with reduced feelings of anxiety, perceptions of out-group members can become more accurate, less polarized, and more favorable (Hewstone et al., 2002; Turner, Hewstone, & Voci, 2007). Empathy has also been implicated in mediating the pathway between intergroup contact and positive attitudes towards the out-group (Finlay & Stephan, 2000). Empathy, in the intergroup relations literature, has both a cognitive element that involves perspective-taking skills and mental awareness, and an affective aspect that

involves forming an emotional connection to the well-being of out-group members that causes

dissonance within the individual (Finlay & Stephan, 2000).

Proposed Ecological Model

My dissertation is a compilation of three distinct studies focusing on the intersection of

ecological and individual-level factors that contribute to interracial relations and cultural

competence development. The goal of this work is to harness the power of intergroup contact

through environmental and climate influences while accounting for the person-context and group

effects. To conceptually integrate the constructs, I propose an ecological model of intergroup

relational development (Figure 1, Appendix A). This framework incorporates the factors

explained above into a model for developing research strategies to illustrate the connections

between these constructs and examine possible points of intervention. Central to the model is

intergroup contact, encompassing quality and quantity components of cross-group interactions.

The primary influences on intergroup contact are environmental factors, consisting of contextual

features and social processes, establishing the stage for intergroup interactions within the setting

of interest. Effective contact interactions, shaped by their environmental influences, lead to

changes within setting and ultimately within individuals. Intergroup competence outcomes and

the social-cognitive processes (e.g., empathy and intergroup anxiety) that act as mediators

between contact and competence are both shaped by contact experiences. Lastly, the

sociocultural lens through which individuals interact and view the world attenuates all

connections within the model as these moderators can increase or decrease group salience, the

awareness and importance of group distinctions.

A Three Study Framework

The goal of this research it to make a case for the integration of contextual and individual factors into the same model of influencing intergroup relations, with a specific focus on applications in the school context. This collection of studies has three main aims: 1) investigating the role that interpersonal and ecological factors play in the association and effectiveness between contact and related intergroup outcomes; 2) accounting for the variability of the person-context interaction on intergroup outcomes; and 3) making educational setting implications for K-12 settings and teacher preparatory programs. Using the proposed ecological framework for intergroup relational development, the first study focused on contextual features and social processes' relationships to outcomes that assess intergroup relational climate. This study uses the nationally representative Educational Longitudinal Study (ELS) of 2002 to understand factors related to school-level perceptions of interracial friendliness and conflict. The major findings for this study revealed that structural features of the school environment were more associated with negative interracial perceptions than positive ones. Hypotheses about how ethnic heterogeneity was related to interracial perceptions were confirmed, however school climate and intimate contact opportunities within schools resulted in a mixed pattern relations across levels of diversity that require more research to truly unpack and discern.

The second and third studies use a pre-service teacher sample to examine intergroup relations within an educational setting and their influence on construction of future school environments. The second study delves into understanding the influence of person-context interaction through investigating the relationships between individual, interpersonal, and teacher training predictors, and future teachers' multicultural attitudes and efficacy (i.e., the extent to which teachers believe they can work with students from ethnically and racially diverse

backgrounds). After comparing attitudes and efficacy, results suggested that these two constructs

were differentially related to personal and contextual factors. Specifically, multicultural efficacy

was higher among pre-service teachers with higher levels of ethnic identity, and both race and

ethnic identity moderated the association between contact and efficacy. The results also imply

that efficacy may involve more behavioral and experiential components relative to multicultural

attitudes.

The third study takes the contextual frame of the first, while attempting to explain how

contact influences intergroup competence outcomes through social-cognitive pathways. Using

path analysis, we tested the associations between these constructs and the moderating effect of

ethnic identity. Ethnocultural empathy mediated the association between intergroup contact and

multicultural efficacy, which confirmed hypotheses. Intergroup anxiety, contrary to previous

literature, was not a mediating pathway. Lastly, the pattern of relations between contact,

empathy, anxiety, and multicultural efficacy varied across pre-service teachers' levels of ethnic

identity.

References

Aboud, F., Mendelson, M., & Purdy, K. (2003). Cross-race peer relations and friendship quality. International Journal of Behavioral Development, 27(2), 165-173.

Allport, G. W. (1954). The nature of prejudice. Basic books.

Aud, S., Wilkinson-Flicker, S., Kristapovich, P., Rathbun, A., Wang, X., & Zhang, J. (2013). The Condition of Education 2013. NCES 2013-037. *National Center for Education Statistics*.

Banks, J. A. (2006). *Race, culture, and education: The selected works of James A. Banks*. Taylor & Francis.

Bellmore, A. , Nishina, A., Witkow, M. R., Graham, S., & Juvonen, J. (2007). The Influence of Classroom Ethnic Composition on Same-and Other-ethnicity Peer Nominations in Middle School. Social Development, 16(4), 720-740.

Bellmore, A., Nishina, A., You, J. I., & Ma, T. L. (2012). School context protective factors against peer ethnic discrimination across the high school years. American journal of community psychology, 49(1-2), 98-111.

Benner, A. D., & Graham, S. (2012). The antecedents and consequences of racial/ethnic discrimination during adolescence: Does the source of discrimination matter?. Developmental psychology, 49(8), 1602.

Bigler, R. S., & Hughes, J. M. (2009). The nature and origins of children's racial attitudes. *The Routledge international companion to multicultural education*, 186-198.

Bigler, R. S., & Liben, L. S. (2006). A developmental intergroup theory of social stereotypes and prejudice. *Advances in child development and behavior*, *34*, 39-89.

Bronfenbrenner, U., & Morris, P. A. (2006). The bioecological model of human development.

Handbook of child psychology.

Cameron, L., Rutland, A., Hossain, R., & Petley, R. (2011). When and why does extended

contact work? The role of high quality direct contact and group norms in the development

of positive ethnic intergroup attitudes amongst children. *Group Processes & Intergroup*

Relations, *14*(2), 193-206.

Cazabon, M.T., Lambert, W.E., & Hall, G. (1993). Two-way bilingual education: A progress

report on the Amigos program (Research Rep. No.7). Santa Cruz, CA and Washington,

DC: National Center for Research on Cultural Diversity and Second Language Learning.

Chavous, T. (2005). An intergroup contact-theory framework for evaluating racial climate on

predominantly White college campuses. *American Journal of Community*

Psychology, *36*(3-4), 239-257.

Cicchelli, T., & Cho, S. J. (2007). Teacher Multicultural Attitudes Intern/Teaching Fellows in

New York City. *Education and urban society*, *39*(3), 370-381.

Crosnoe, R., Johnson, M. K., & Elder, G. H. (2004). Intergenerational bonding in school: The

behavioral and contextual correlates of student-teacher relationships. Sociology of

Education, 77(1), 60-81.

Davies, K., Tropp, L. R., Aron, A., Pettigrew, T. F., & Wright, S. C. (2011). Cross-Group

Friendships and Intergroup Attitudes A Meta-Analytic Review. *Personality and Social*

Psychology Review, *15*(4), 332-351.

Dessel, A. (2010). Prejudice in schools: Promotion of an inclusive culture and climate. Education

and Urban Society, 42(4), 407-429.

Dixon, J., Durrheim, K., & Tredoux, C. (2005). Beyond the optimal contact strategy: a reality

check for the contact hypothesis. *American Psychologist*, *60*(7), 697.

Engberg, M. E., Meader, E. W., & Hurtado, S. (2003). Developing a pluralistic orientation: A comparison of ethnic minority and White college students. Ann Arbor, 1001, 48109-1259.

Finlay, K. A., & Stephan, W. G. (2000). Improving Intergroup Relations: The Effects of Empathy on Racial Attitudes1. *Journal of Applied Social Psychology*, *30*(8), 1720-1737.

Grant, C., & Gibson, M. (2011). Diversity and teacher education: A historical perspective on research and policy. In A. F. Ball & C. A. Tyson (Eds.), *Studying diversity in teacher education*. Lanham, MD: Rowman & Littlefield.

Green, C. W., Adams, A. M., & Turner, C. W. (1988). Development and validation of the school interracial climate scale. *American Journal of Community Psychology*, *16*(2), 241-259.

Hallinan, M. T. (1982). Classroom racial composition and children's friendships.*Social Forces*, *61*(1), 56-72.

Hallinan, M. T., & Teixeira, R. A. (1987). Students' interracial friendships: Individual characteristics, structural effects, and racial differences. *American Journal of Education*, 563-583.

Hallinan, M. T., Kubitschek, W. N., & Liu, G. (2009). Student interracial interactions and perceptions of school as a community. *Social Psychology of Education*, *12*(1), 5-19.

Helms, J. E. (1990). *Black and White racial identity: Theory, research, and practice*. Greenwood Press.

Hewstone, M., Rubin, M., & Willis, H. (2002). Intergroup bias. *Annual review of psychology*, *53*(1), 575-604.

Jackson, M. F., Barth, J. M., Powell, N., & Lochman, J. E. (2006). Classroom contextual effects of race on children's peer nominations. *Child Development*,*77*(5), 1325-1337.

Juvonen, J., Nishina, A., & Graham, S. (2006). Ethnic diversity and perceptions of safety in

    urban middle schools. *Psychological Science*, *17*(5), 393-400.

Karcher, M. J., & Fischer, K. W. (2004). A developmental sequence of skills in adolescents'

    intergroup understanding. *Journal of applied developmental psychology*, *25*(3), 259-282.

Khmelkov, V. T., & Hallinan, M. T. (1999). Organizational effects on race relations in

    schools. *Journal of social Issues*, *55*(4), 627-645.

Lambert, W. E., & Tucker, G. R. (1972). Bilingual education of children: The St. Lambert

    experiment.

Margie, N. G., Killen, M., Sinno, S., & McGlothlin, H. (2005). Minority children's intergroup

    attitudes about peer relationships. *British Journal of Developmental Psychology*, *23*(2),

    251-270.

Mattison, E., & Aber, M. S. (2007). Closing the achievement gap: The association of racial

    climate with achievement and behavioral outcomes.*American Journal of Community

    Psychology*, *40*(1-2), 1-12.

McGlothlin, H., & Killen, M. (2006). Intergroup attitudes of European American children

    attending ethnically homogeneous schools. *Child Development*, *77*(5), 1375-1386.

McPherson, J. M., & Smith-Lovin, L. (1987). Homophily in voluntary organizations: Status

    distance and the composition of face-to-face groups.*American sociological review*, 370-

    379.

Moody, J. (2001). Race, School Integration, and Friendship Segregation in America1. *American

    Journal of Sociology*, *107*(3), 679-716.

Nesdale, D. (2008). Peer group rejection and children's intergroup prejudice.*Intergroup attitudes

    and relations in childhood through adulthood*, 32-46.

Paluck, E. L. (2011). Peer pressure against prejudice: A high school field experiment examining

      social network change. *Journal of Experimental Social Psychology*, *47*(2), 350-358.

Patterson, M. M., & Bigler, R. S. (2006). Preschool children's attention to environmental

      messages about groups: Social categorization and the origins of intergroup bias. *Child*

      development, *77*(4), 847-860.

Pettigrew, T. F., & Tropp, L. R. (2011). *When groups meet: The dynamics of intergroup contact*.

      Psychology Press.

Phinney, J. S. (1992). The multigroup ethnic identity measure a new scale for use with diverse

      groups. *Journal of adolescent research*, *7*(2), 156-176.

Phinney, J. S., Jacoby, B., & Silva, C. (2007). Positive intergroup attitudes: The role of ethnic

      identity. *International Journal of Behavioral Development, 31(5),* 478-490.

Pianta, R., Howes, C., Burchinal, M., Bryant, D., Clifford, R., Early, D., & Barbarin, O. (2005).

      Features of pre-kindergarten programs, classrooms, and teachers: Do they predict

      observed classroom quality and child-teacher interactions?. *Applied developmental*

      science, *9*(3), 144-159.

Ponterotito, J. G., Baluch, S., Greig, T., & Rivera, L. (1998). Development and initial score

      validation of the teacher multicultural altitude survey. *Educational and Psychological*

      Measurement, *58*(6), 1002-1016.

Ream, R. K., & Rumberger, R. W. (2008). Student engagement, peer social capital, and school

      dropout among Mexican American and non-Latino white students. *Sociology of*

      Education, *81*(2), 109-139.

Rutland, A., Killen, M., & Abrams, D. (2010). A new social-cognitive developmental

perspective on prejudice the interplay between morality and group identity. *Perspectives*

on Psychological Science, *5*(3), 279-291.

Hernandez Sheets, R. (2003). Competency vs. good intentions: Diversity ideologies and teacher

potential. *International Journal of Qualitative Studies in Education*, *16*(1), 111-120.

Sleeter, C. (2008). An invitation to support diverse students through teacher education. *Journal*

of Teacher Education, *59*(3), 212-219.

Sleeter, C. E., & Owuor, J. (2011). Research on the impact of teacher preparation to teach

diverse students: The research we have and the research we need. *Action in Teacher*

Education, *33*(5-6), 524-536.

Figures

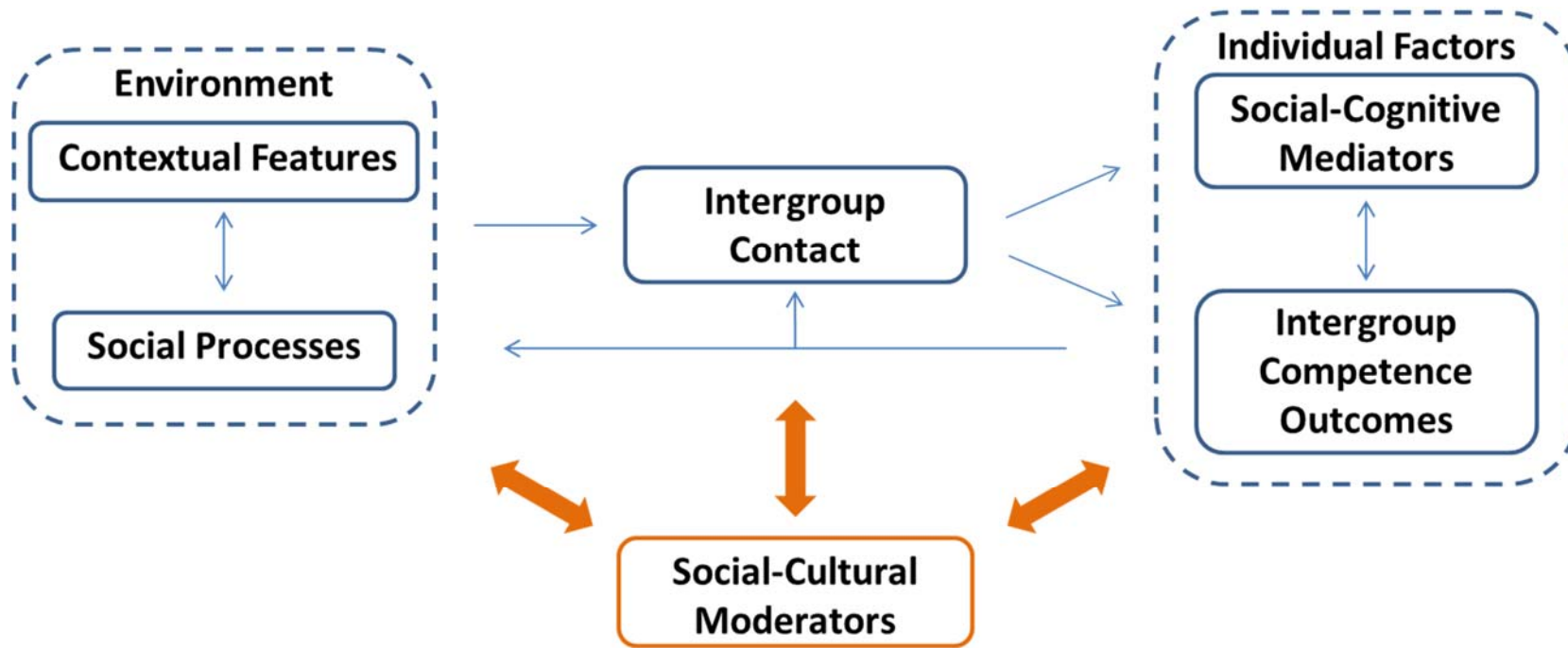*Figure 1. Ecological Model of Intergroup Relational Development*

Study 1

Interracial Friendliness and Conflict in American High Schools: The Role of Structural

Features, Perceptions of Climate, and Opportunity for Contact

Amir François & Joanna Lee Williams

Curry School of Education

University of Virginia

Author Note

Amir François & Joanna Lee Williams, Department of Educational Leadership, Foundations, and Policy, Curry School of Education, University of Virginia.

Amir François is now at Department of Mental Health, Bloomberg School of Public Health, Johns Hopkins University.

Correspondence concerning this article should be addressed to Amir François, Bloomberg School of Public Health, Johns Hopkins University, 615 N. Washington St., Baltimore, MD 21205. Contact: amir.francois@virginia.edu

Abstract

In light of current demographic shifts, diverse student populations in schools will present new opportunities and challenges for instilling the skills and creating the attitudes for facilitating positive intergroup relations. The current study used a nationally representative sample from the Educational Longitudinal Study of 2002 and hierarchical linear regression to understand the magnitude of association and the relationships between structural and organizational features, demographic and geographic characteristics, and school climate perceptions with perceived interracial/ethnic friendliness and conflict in American high schools. Results confirmed hypotheses that increased school-wide ethnic heterogeneity and cross-racial friendships were related to more positive and more negative intergroup perceptions within high schools. In addition, while school structural features were more related to negative perceptions, student perceptions of climate were more mixed and require further examination. Research and educational policy implications of the findings are discussed.

Keywords: intergroup relations, intergroup contact, race, diversity, ecological, friendliness, conflict

Study 1: Interracial Friendliness and Conflict in American High Schools: The Role of Structural

Features, Perceptions of Climate, and Opportunity for Contact

As our society becomes increasingly diverse (Aud et al., 2013), it is imperative that today's young people are prepared to understand, engage, and work with people from racial, ethnic, and cultural backgrounds different from their own (Banks, 2006; Schofield, 2004). Attending to youths' understanding of this growing diversity may foster the development of global citizens who actively seek out diverse perspectives and ideas (Banks, 2006), and may also counteract the universal developmental trajectory of forming biases (e.g., showing more positive affect toward in-group than out-group members), confirming negative stereotypes (i.e., assigned characteristics to other solely on the basis of group membership), and calcifying prejudicial attitudes based on societal and family messaging (Bigler & Hughes, 2009). Since the genesis of research on desegregation, social scientists have been studying the features and characteristics of educational settings and their influence on intergroup relations (McKown, 2005). Educational settings are an attractive environment for studying intergroup relations due to the amount of time children and adolescents spend in schools, their established role as a socializing force for educational and social conventions, and the domain-general emphasis on learning and developing as a person (Dessel, 2010). Capitalizing on these assets requires viewing schools as more than the students that reside within their walls; social process (e.g. student-teacher interactions), resources (e.g. highly-qualified teachers), and the organization and implementation of those resources (McKown, 2005; Tseng & Seidman, 2007), all comprise possible points of intervention that require further targeted research to understand their influence on instilling students with positive intergroup attitudes (e.g., respect and perspective-taking) and behaviors (e.g., inclusion) (Aboud et al., 2012).

Intergroup contact, which theorizes that interaction between members from different groups ideally results in more positive cross-group attitudes, provides an established mechanism of how setting characteristics, such as ethnic composition and enrollment size, can engender positive relations between diverse groups (Allport, 1954; Bellmore, Nishina, You, & Ma, 2012; Pettigrew & Tropp, 2011). Combined with Tseng and Seidman's framework that views the aspects of schools (i.e., social processes, resources, and resource organization) in "dynamic transaction" with each other (2007), this study will examine structural features and perceptions of school climate as they relate to school-wide perceptions of intergroup relations in a nationally representative probability sample of U.S. high schools. This approach disentangles the complex role that both school resources and social processes (Tseng & Seidman 2007) play in establishing positive setting outcomes. Lastly, through the inclusion of variables representing multiple levels of intergroup contact (Christ & Wagner, 2013) and the modeling of intimate contact opportunities (Moody, 2001), this study adds valuable insight into the role of school organization in intergroup relations across varying levels of school diversity.

Literature Review

Intergroup Relations in Schools

Intergroup contact theory (Allport, 1954; Pettigrew, 1998), has been the theoretical foundation undergirding most intergroup relations research for the last half century, and has been regarded as especially suited to understanding the dynamic and socially complex cross-group interactions occurring within educational institutions (Chavous, 2005; Dessel, 2010). School environments fit the purview of intergroup contact because their organization presents the potential of meeting Allport's conditions for optimal contact (i.e., equal status among groups, common goals, intergroup cooperation, and authority sanction for the contact; Allport, 1954;

Pettigrew & Tropp, 2011). When these conditions are met, contact experiences have been shown to typically improve intergroup relations and to have numerous social-psychological and educational benefits for youths (Aboud et al., 2012; Hurtado, 2005; Terenzini, Cabrera, Colbeck, Bjorklund, & Parente, 2001). Cross-group friendships are seen as an effective form of intergroup contact, due to their hallmarks of repeated and wide-ranging interaction over a range of contexts, which over time model the optimal conditions of contact experiences (Davis et al, 2011; Pettigrew & Tropp, 2011).

For intergroup contact to occur, a diversity of groups must be present within the setting. School ethnic diversity functions as a prerequisite for contact as it provides the opportunity for cross-group interaction. Research has found that having a racially- and ethnically-diverse population is necessary, but not sufficient, for promoting positive intergroup relations (Chavous, 2005; Pettigrew & Tropp, 2011). School diversity has been shown to be uniquely related to intergroup outcomes depending on the level of diversity present within the setting. Diversity index scores, which reflect the chance two randomly selected students come from distinct ethnic groups have been found to have a nonlinear relationship with intergroup relational outcomes (Moody, 2001; Juvonen, Nishina, & Graham, 2006). At moderate levels of diversity, more negative intergroup outcomes are present, yet when diversity is high these negative outcomes level off, illustrating the complex relationship between contact opportunity and intergroup relations (Moody, 2001). More diverse school environments have produced mixed findings such as increased ethnic group segregation (Moody, 2001; Hallinan & Williams, 1989), less peer victimization (Agirdag, Demanet, van Houtte, van Avermaet, 2010; Bellmore et al., 2012; Graham, 2006), and more peer victimization and ethnic discrimination (Durkin et al., 2011),

indicating other factors at work in determining the intergroup relational environment of a school setting above and beyond ethnic composition (Thijs & Verkuyten, 2013).

When considering ethnic diversity, classroom and extracurricular composition has been argued to be a better determinant of intergroup contact opportunity than school-wide diversity levels (Thijs & Verkuyten, 2013). A recent Dutch study investigating classroom diversity at the high school level found that classroom composition was unrelated to racial friendship segregation. This finding indicates that school and specific classroom composition might be less relevant in secondary schools because of the frequency at which high school students' immediate setting changes throughout the day (Vermeij, van Duijn, & Baerveldt, 2009). Grouping policies (e.g., academic tracking) and extracurricular offerings (e.g., sports teams, special interest clubs, and volunteer associations), can provide additional contexts that span racial and cultural divisions, satisfying the conditions for effective intergroup interaction (Hallinan & Williams, 1989; Khmelkov & Hallinan, 1999). While past research has operationalized and modeled conditional variance between close contact settings (Goldsmith, 2004; Moody, 2001), very few studies have compared both negative and positive intergroup outcomes (Goldsmith, 2004; Stark, Flache, & Veenstra, 2013) and none have focused on the structural features that could be targeted for intervention.

School Structure & Climate

Having a diverse population only guarantees opportunities for intergroup contact. Ethnic composition is necessary, but not sufficient to improving intergroup relational outcomes, as actual interaction and the formation of close relationships between cross-group members cannot be ensured (Dessel, 2010; Echenique & Fryer, 2007). Invoking an ecological systems approach (Bronfenbrenner, 1977) allows researchers to account for the varied contextual characteristics

that could assert an influence upon intergroup contact within the school setting (Chavous, 2005; McKown, 2005). Work in community psychology using this systems approach provides a conceptual framework for understanding and ultimately harnessing the structural aspects present within social settings (Maton, 2008; Tseng & Seidman, 2007). Specifically, Tseng and Siedman's framework operationalizes and disentangles the complex role of both institutional features (i.e., diversity, size, public/private status, building condition, etc.) and social processes (i.e., cross-race friendships, negative racial atmosphere, etc.) vital to establishing positive intergroup relational outcomes (2007). The current study employs this framework to predict school-level intergroup relational outcomes across schools while accounting for the geographic (e.g., South, West) and locational (urban, rural, etc.) characteristics that could have socio-historical and demographic influences on intergroup experiences (Hallinan, 1996; Khmelkov & Hallinan, 1999; Schofield, 1991).

In addition to the structural features, interpersonal and regulatory norms implicitly and explicitly influence intergroup relations (Benner & Graham, 2012; Green, Adams, & Turner, 1988; Trickett & Moos, 1974). A student's experience of their school's interracial and intercultural climate forms their sensitivity towards discrimination and prejudice that can have an impact on intergroup attitudes and behaviors shaping the success of intergroup contact (Bellmore et al., 2012; Benner & Graham, 2012; Pettigrew & Tropp, 2011). Schools that promote climates of fairness, support, and institutional flexibility have been associated with increased school engagement and pro-social motivation, requisites of positive intergroup relations (Bellmore et al., 2012; Mattison & Aber, 2007). Even non-racial domains of climate, such as personal vulnerability and school safety, help determine the extent to which students will feel comfortable enough to engage in intergroup experiences, stressing the existence and importance of a broad

view of school climate (Juvonen et al., 2006). In the study described here, climate perceptions

are assessed at student-level; however, since schools are the unit of analysis, aggregated student

responses are used to represent the shared view of the school environment (Dessel, 2010).

Measuring School Intergroup Outcomes

Examining the contribution of the ecological context provides valuable information about

intergroup relational development only when the measured outcomes relate to the possible cross-

group interactions within the setting. Traditionally, many intergroup studies and interventions

have aimed at reducing prejudice (Al Ramiah & Hewstone, 2013) and have measured cross-

group friendships and attitudes as their outcomes of interest (Pettigrew & Tropp, 2011), but these

constructs are not proven to predict positive intergroup relations within a specific setting (Thijs

& Verkuyten, 2013; Tropp & Prenevost, 2008). Current paradigms within the literature use

cross-group relationships as the outcome of interest, implicitly advancing intergroup friendships

as the goal of contact. Schools and other social settings cannot guarantee that all their students

will become close friends, and examining cross-group friendships as the sole outcome might be

considered an unrealistic standard that has little utility in furthering our understanding of how to

create and promote positive intergroup relations (Thijs & Verkuyten, 2013). Students might be

asked to work with out-group members on short-term bases that could be reaped from a large

group of potential peers within the setting. Due to this reason, outcome variables should reflect

and lead to creating environments that promote and engender better interactions between

students such as perceptions of interracial climate.

Some current work in the field represents a growing movement from strict cross-group

attitude and prejudice outcomes and friendship choices to a more holistic capture of the students'

experienced interracial climate (Bellmore et al., 2012; Green et al., 1988). If a students'

environment accurately mirrors a culture that promotes and inculcates intergroup interaction and harmony, then children and adolescents can develop communication skills and cooperation tactics with students from diverse backgrounds (Aboud & Levy, 2000). Research should try to incorporate both negative and positive perceptions into their inferences about intergroup relations, as both have been found to uniquely contribute to intergroup attitudes (Stark et al, 2013; Thijs & Verkuyten, 2013). By looking at both negative and positive outcomes, we can come to better conclusions of how structural factors of the school are related to interracial relations without thinking that all interaction and outcomes are experienced as positive by all students (Dixon, Durrheim, & Tredoux, 2005; Goldsmith, 2004).

The Present Study

The current study builds upon past research in intergroup relations to understand how school structural and organizational factors are associated with students' interracial perceptions. This study differs from most research in the area as it simultaneously focuses on both positive and negative perceptions, rather than focusing on either valence specifically. In particular, we are interested in the racial/ethnic heterogeneity of the sample and other characteristics of the school and their relation to the collective level of perceived student interracial friendliness and conflict. The level of diversity in more intimate interracial contact settings (i.e., academic track and extracurricular ethnic heterogeneity) was examined, along with student demographic variables to further explain the relationships between environments that more closely mirror Allport's conditions for successful intergroup contact and interracial perceptions.

The current study is guided by three major research questions: 1) what are the relationships between school-based ecological factors (i.e., racial/ethnic diversity, structural features, climate perceptions, intergroup contact experiences and opportunities, and local

demographics) and perceived interracial friendliness and conflict in high school settings? 2)

What differences in the patterns of ecological predictors exist between positive (friendliness) and

negative (conflict) intergroup relational outcomes? The research questions in this study mostly

take an exploratory frame, but we hypothesize a positive association between ethnic

heterogeneity and the positive and negative outcomes. We expect this relationship due to

previous literature suggesting that as contact opportunity increases there will be more friendships

formed (Moody, 2001), but also peer victimization has been shown to increase as well (Juvonen

et al., 2006). This study answers recent calls for intergroup relations research to take on the

ecological realities of the environments in which contact occurs. Through the inclusion of

predictors that represent multiple levels of influence (e.g., cross-group friendships – direct

interpersonal measure, ethnic heterogeneity – contextual interpersonal measure, etc.; Christ &

Wagner, 2013), the current study places intergroup contact research in the "full and evolving

social context" (Pettigrew, 2008, p. 193).

Methods

Sample

The sample comes from the Educational Longitudinal Study of 2002 (ELS:2002), a

longitudinal study of 15, 362 10th-grade students in 752 schools. The current study used only the

721 schools that had students from at least two distinct racial/ethnic groups. Table 1 summarizes

school-level sample characteristics. Eighteen percent of schools were located in the Northeast,

25% in the Midwest, 37% in the South, and 20% in the West. Almost half of schools were

located in the suburbs (49%), a third (33%) were in urban areas, and the remaining 18% were

rural. The schools were slightly majority male (53%), English was the native language of most

students (85%) and 76% of the schools were public.

Procedure

The ELS:2002 was conducted by the United State Department of Education's National Center for Educational Statistics (NCES). This national study surveyed U.S. high school students during their sophomore year and at two-year intervals following the Base Year (BY) collection. A two-stage stratified sampling method was used to create the nationally representative sample of high schools for the ELS:2002. Public, Catholic, and other private schools were first selected proportional size probability constraints to match the target population sampling frame. Administrators were recruited from the sample and of the eligible schools, those that agreed to participate implemented the data collection on a number of school level variables. Next, to create a national sample of high school sophomores, NCES then randomly selected approximately twenty-six students from the 10th grade enrollment lists from each of the sampled schools, where students completed two academic assessments and a student questionnaire that included information on locating information, school experiences and activities, plans for the future, non-English language use, money and work, family, and beliefs and opinions about self. Parents and teachers of selected students also completed questionnaires that covered topics about the student, their school and neighborhood characteristics, and the student's environment, relational, aspirational beliefs.

Measures

Location characteristics. School *geographic region* was captured in series of dichotomous, dummy-coded variables (i.e., Midwest, South, and West), whose reference group were schools in the Northeast region of the United States. School *urbanicity*, or density of the area in which the school is located, was captured by urban and rural dummy-coded status variables, whose reference group were schools in suburban locales. For both geographic region

and urbanicity variables, "1" indicated that school did have the region and density designation, and "0" indicated that the school did not have that designation. Lastly, type of school was entered into the model via a dummy-coded variable, with "1" indicating a public school, and "0" indicating a private/parochial institution. All location characteristics were derived from a survey completed by principals and/or administrators. *Crime* was derived from a measure assessing the student's parent's/guardian's perception of the level of crime in the student's neighborhood. Respondents rated their neighborhood on a scale from 1 ("low level of crime") to 3 ("high level of crime").

School characteristics. *Female* and *native English-speaking* percentages were calculated for each school separately from the corresponding student demographic variables across the school. *Socioeconomic status* (SES) is a composite variable constructed by combining information from the parent questionnaire about a student's mother's education, father's education, family income, and/or an income proxy such as household items. Higher scores indicate a higher socioeconomic status. *Academic climate* is a scale of the based on the school administrator's perceptions of how academically-oriented attitudes within the school are. Higher values represent a more observable commitment to academics over other social issues. *Enrollment* is a measure of high school size for the 2001/2002 academic year. This ELS: 2002 variable originally coded as BYSCENP was developed from surveying principals and administrators. In order to smooth the patterning of school size, the categorical form of school size was recoded into quintiles derived from the range of data.

School climate. School climate variables were derived from student measures on the ELS: 2002 concerning their attitudes and beliefs about their own school's environment. Each series of items followed the same question stem: "Thinking about your school over the last year,

how much do you agree or disagree with the following statements?" Nine statements were used

for this study: *teachers* – "Students get along well with teachers;" *rules* – "Everyone know what

school rules are;" *fair* – "School rules are fair;" *same* – "Punishment the same no matter who you

are;" *enforce* – "School rules are strictly enforced;" *punishment* – "Students know punishment

for broken rules;" *safe* – "Does not feel safe at this school;" *spirit* – "There is real school spirit;"

violence – "Violence on school grounds is a problem." All climate variables are single item

measurements, and considering these measures can suffer from reduced reliability (Wanous &

Hudy, 2001) and our goal of modeling school-level factors, we viewed each student's response

as an indicator of school-wide perceptions and aggregated these scores by school for our score.

This approach allows inferences to be made at the school-level, while also accounting for the

lack of generalizability that usually accompanies single item measures.

Ethnic Heterogeneity. Diversity was calculated using a generalized variance

measurement approach that has been shown to result in an intuitive and simple interpretation that

has qualities that can imitate past findings that uses simple minority/majority percentages

(Budescu & Budescu, 2012; Juvonen et al., 2006; Moody, 2001). This study uses a formula

derived from Simpson's Diversity Index (Simpson, 1949) employed in the biological sciences to

measure biodiversity, and more recently used to measure diversity in applied psychology

research (Budescu & Budescu, 2012; Juvonen et al., 2006):

$$D_\mathrm{s} = 1 - \sum_{i=1}^{g} p_i^2$$

where D_s is the ethnic diversity of a school with p_i^2 representing the squared proportion of a

certain ethnic group. The each ethnic group that has representation in that setting each get their

own value and are summed across groups and subtracted from 1. This formula basically captures

the probability that two randomly selected students from the setting will be from different groups (Juvonen et al. 2006; Moody, 2001). Scores range from 0 – 1, with high reflecting a greater ethnic diversity reflected in that school's population. Our formula used six ethnic group categories in calculating our ethnic heterogeneity scores: American Indian, Asian, Black, Latino, multiracial, and White). Because we were concerned with the effect of diversity on our outcome measures, schools had a diversity score of 0 (all students in that school were of the same ethnic group) were not included in the study sample. This excluded 30 ethnically homogenous schools from our sample. This formula was employed for all the students within a school to populate the *school diversity* variable, students who were enrolled in primarily academic/college-prepatory courses for a*cademic track diversity*, students who were enrolled in primarily in vocational courses for *vocational track diversity,* and students who were participants in at least one extracurricular activity (e.g., sports, clubs, etc.) for *extracurricular diversity*.

      Cross-racial/ethnic Friendships. To measure direct intergroup contact between students from different ethnic/racial groups, students were asked to provide the race of up to three of their best friends at their school. This measure reflects the number of best friends who are of a different race than the respondent and could range from 0 – 3. Because we are interested in school-level predictors, we aggregated these scores by school for our variable. This variable now represents average cross-race friendships present throughout the school.

      Outcome measures.

      Student Interracial Perceptions. School interracial outcome variables were derived from student measures on the ELS: 2002 concerning their attitudes and beliefs about their own school's interracial environment. Each series of items followed the same question stem: "How much do you agree or disagree with each of the following statements about your current school

and teachers?" Two statements were used for this study: *friendly* – "Students friendly with other

racial groups;" *conflict* – "Fights often occur between different racial/ethnic groups." Again, due

to our interested in school-level predictors, we aggregated these scores by school for our

variable. This variable now represents average interracial perceptions for the entire school.

Analysis Plan

Analysis for the current study was conducted at the school level. Ten of the variables

used in the study were collected at the school level from school administrator surveys. The

remainder of the school-level variables were created from using student level data within each

school and either aggregating it to the school level through averaging the responses within each

school or through creating a school level variable through student level count data and

implementing an a priori algorithm to create a score.

Missing data was a relatively small percentage of the study variables (3.46%). About half

the schools (45.49%) had some amount of missingness in their data. The data were examined for

lack of normality, lack of linearity, and outliers through examination of basic statistics,

histograms, scatterplots, and bivariate correlations. These assumptions were found to be met and

analyses were conducted using Full Information Maximum Likelihood (FIML), which uses all

available data to estimate models (Little & Rubin, 1987). Final statistics used in the study were

estimated with FIML and are shown in Table 2.

Hierarchical linear regression was conducted for both outcome measures for the full

sample first. For each outcome, independent variables were entered in three blocks beginning

with location characteristics (gender, age, and program status) followed by school climate factors

(diversity disposition, ethnic identity, and race), and finally school structural features (intergroup

contact), and teacher training variables (multicultural course content, diversity courses) in their

own block. We chose hierarchical linear regression to assess the unique contribution of each

group of predictors, allowing for examination of variance explained by each block (i.e.,

intrapersonal, interpersonal, and teacher training factors).

Results

Descriptives

Demographic characteristics and outcome variables for the full analytic sample and for

schools by level of heterogeneity (low, medium, high) are shown in Table 1. The average school

ethnic heterogeneity was moderate ($M = 0.41$) and the average number of cross-race friendships

was less than 1 ($M = 0.78$), although it was higher in the schools with the highest levels of

heterogeneity. Perceptions of interracial friendliness on average were very positive ($M = 3.21$),

while interracial conflict scores were at the mid-point of the scale ($M = 1.97$) indicating neither

high nor low perceptions of racial group conflict across schools. Both conflict and friendliness

were highest among schools with the greatest level of diversity. T-tests revealed that friendliness

scores for the low and medium diversity schools were significantly different ($M_{low} = 3.89$; M_{med}

$= 4.06$; $t = -2.21$, $p = .027$),. T-tests for interracial conflict showed that differences between

schools with low and medium diversity ($M_{low} = 3.89$; $M_{med} = 4.06$; $t = -2.21$, $p = .027$), and

medium and high diversity ($M_{med} = 3.89$; $M_{high} = 4.06$; $t = -2.21$, $p = .027$) were both significant.

Interracial Friendliness

Southern location and rural locale were negatively related to friendliness, while urban

locale was positively related to the outcome. Average student perceptions of student/teacher

relationships and of equal punishment distribution were positively related to friendliness, but

beliefs about rule fairness were negatively related to interracial friendliness. Cross-race

friendships was the only structural variable that predicted friendliness along with a positive

association to the ethnic heterogeneity of extracurricular activities. The variables in the full

model explained 48% of the variance in interracial friendliness.

When schools were divided into low, medium, and high diversity, southern location

remained a significant predictor of interracial friendliness for schools with low and medium

levels of diversity (Table 2). Student perceptions of teacher-student relationships were positively

related to interracial friendliness for the low and high-diversity schools. Perceptions of rule

fairness were negatively related to friendliness the low and medium-diversity schools. Rule

enforcement predicted high levels of friendliness in low diversity schools, but low levels of

friendliness in the most diverse schools. In low-diversity schools, equitable punishment

positively predicted friendliness, but academic climate was negatively related to friendliness.

School spirit was positively related to friendliness in medium-diversity schools, while students

knowing the rules was had a positive association with friendliness in high-diversity schools.

There was a positive association between cross-race friendships and interracial friendliness only

in schools with high levels of diversity. Finally, the ethnic heterogeneity of extracurricular

activities was positively related to friendliness in medium and high diversity schools. Proportion

of variance in interracial friendliness that was explained rose to 53% for low diversity schools

and 69% for high diversity schools, while levels were close to the full sample percentage for

medium schools (44%).

Interracial Conflict

For the full sample of schools, interracial conflict was highest among schools in the West

and South compared to schools in the East, and lower in urban schools compared to suburban

schools (Table 3). Lower school socioeconomic status was associated with higher levels of

conflict. Believing the school rules are fair and perceiving violence on school grounds were both

positively related to interracial conflict. More positive student perceptions of student/teacher

relationships, feeling students know the school's rules, and feeling your school environment is

safe were negatively related to interracial conflict. Positive, significant associations with conflict

were found for enrollment size, racial tension, and grade-level diversity (before the addition of

intimate contact opportunities; $\beta = .438$, $p = .01$), while a negative relationship emerged for

public school status, classroom disorder, and cross-race friendships. The full model explained

74% of the variance in interracial conflict across schools.

After separating schools by level of diversity (Table 3), some locational and geographic

variables were significant for medium-diversity schools (urban schools had lower levels of

conflict) and high diversity schools (Midwestern, Southern, Western, and rurally-located schools

had higher levels of conflict, while urban school had less). Perceptions of school safety and

school violence (except for high diversity schools) were significant across all ethnic

heterogeneity levels, displaying a negative and a positive association with conflict, respectively.

In moderately diverse schools, perceptions of teacher-student relationships and student

knowledge of the rules predicted lower levels of conflict, while rule fairness and school spirit

predicted higher levels of conflict. There were higher levels of conflict reported in larger schools

and those with racial tension across all levels of diversity, and ethnic heterogeneity was only

positively related to conflict in the schools with the lowest levels of diversity. Proportion of

variance in interracial conflict that was explained was consistent across low and medium

diversity schools (74%), but rose slightly for high diversity schools (80%).

Discussion

Structural and demographic features of educational settings are an important part of

understanding how schools can engender positive intergroup relations in their increasingly

diverse student populations. The goal of the current study was to empirically test whether school

diversity, climate, and cross-racial friendships were related to student perceptions of interracial

relations. Ultimately our results indicate that these features seem to be more related to indicators

of interracial conflict, but not to perceptions of interracial friendliness. When examining schools

across levels of diversity, the data confirmed our initial hypotheses that both interracial

friendliness and conflict perceptions would increase as schools reflected more ethnic diversity.

Cross-race friendships also increased as school ethnic heterogeneity increased, also verifying

prior intergroup relational findings that cross-group friendships are more likely to occur when

more opportunity for those friendships is available (Davis et al., 2012; Pettigrew & Tropp, 2011).

Interracial Friendliness

School structural features, other than mean level of cross-race friendships, did not appear

to significantly predict interracial friendliness perceptions in the schools in our sample. This null

result can be explained by findings in the literature that report that ethnic composition and other

school features might play less of role in determining positive perceptions of group relations as

these might be based more on witnessing or engaging in actual contact experiences with racial

out-group members (Aboud et al., 2012; Hodson & Hewstone, 2013). The inclusion of

demographics and the ethnic diversity of institutional organizational features operationalized the

opportunity to have interracial contact in more intimate settings that have a better chance of

producing Allport (1954) and colleagues' optimal conditions for intergroup contact. Some

demographic characteristics produced positive main effects (i.e., percentage of non-native

English speakers present, socioeconomic status, and grade-level diversity), yet the presence of

extracurricular diversity predicting friendliness gives credence to our conclusion that while

larger structural features do not play a role in shaping positive intergroup perceptions, creating

smaller opportunities is a worthwhile avenue to engendering healthier attitudes. This thinking is not novel, as researchers have posited that more than surface level opportunity for contact is needed to change perceptions; instead deep relationships, usually in the form of cross-racial friendships, emerge over an extended period of time which can happen in groups outside of the classroom (Davies, Tropp, Aron, Pettigrew, & Wright, 2011).

Building on these findings, study results suggest that larger structural features give way to other more affective characteristics of the environment such as student attitudes or school climate features, however this picture is complicated and far from clear. Better perceived equity of punishment within the school, less focus on academics, and perceiving rules as less fair were also related to interracial friendliness in our sample of schools. The relationship between these climate measures and positive perceptions of intergroup relations is not well understood in the literature, especially when students come together and group dynamics start to influence individual behaviors and attitudes (Thijs & Verkuyten, 2013). The most intriguing of these significant climate associations with the friendliness outcome was the positive relationship that emerged with perceptions of student-teacher relationships. A possible explanation could be that ethnic minority students are more likely to have ethnic majority teachers in schools that have some level of ethnic diversity. Therefore, forming a positive outlook of relationships between teachers and students of different races can broaden a student's positive outlook to include all interracial relations in that setting (Thijs & Verkuyten, 2012). This point is furthered evinced by the finding that both low and high diverse schools show the same results of teacher-student relations predicting interracial friendliness. Ethnic majority members might also, through extended intergroup contact pathways, improve their interracial perceptions through the knowledge of close cross-racial relationships (Feddes, Noack, & Rutland, 2009). Medium-levels

of ethnic diversity might not demonstrate this finding as this middle score of ethnic heterogeneity is correlated to a more equal distribution of fewer racial groups in the setting, which could result in students witnessing a shortage of cross-racial student-teacher interactions.

Interracial Conflict

Analyses focusing on student perceptions of interracial conflict reflected a stronger relationship with school structural features. Ethnic heterogeneity, enrollment size, administrator reported racial tension, and classroom disorder were all significant predictors of negative interracial perceptions. Consistent with the hypotheses of the study, these structural predictors represent school characteristics that shape the opportunity for students to engage in intergroup contact within the setting. Prior research has shown that increased ethnic heterogeneity can result in students having more of an opportunity to engage with out-group members, and depending on the conditions within that setting, can result in more positive or negative relations (Blau, 1977; Pettigrew & Tropp, 2011). Our finding that enrollment size is related to more negative interracial perceptions has also been supported in the existing literature. For instance, McPherson & Smith-Lovin's (1987) observational and survey findings show that very large groups tend to force students to create smaller, more manageable circles based on comfort and affinity, limiting the potential for cross-racial encounters and relationships. Enrollment size was robust towards level of ethnic heterogeneity within the school, as this finding was consistent over all ethnic heterogeneity tercile samples.

Climate variables also shed light on how school perceptions can contribute to negative interracial relations. Schools in which students agreed that the environment was safe and perceived less violence had less interracial conflict. This intuitive finding highlights ideal intergroup contact conditions where students do not have to worry about the negative

consequences for engaging with other group members. Settings where students feel safe to

engage, cooperate, and even disagree with each other and do not feel threatened may have a

higher probability of dealing with conflict in a healthy, more positive manner (Mehta, Cornell,

Fan, & Gregory, 2013). Teacher-student relationships and perceiving the rules are the same

seems to be related to fewer perceptions of conflict between racial groups. Schools interested in

lessening the perceptions that are tied to racial tension and negative attitudes should attend to

these and other climate characteristics; likewise additional research is needed to determine the

specific mechanisms underlying these associations (Thijs & Verkuyten, 2013).

Ethnic Heterogeneity

School features that are widely seen as integral to the social, physical, and educational

well-being of students (i.e., safety, reduced violence, and smaller enrollment) were all significant

predictors of less perceived conflict. Notably, these findings were also consistent across all

schools regardless of their ethnic diversity, indicating that targeting these traits can result in

positive effects no matter the level of diversity. Institutional change requires political capital and

requires the action of national, wide-ranging coalitions (Maton, 2008; McKown, 2005); our

study suggests that bringing varied stakeholders together might be helped by focusing on these

features that most people can innately see being positive for all students. Our findings also point

to more structural and climate variables that were related to positive intergroup perceptions, yet

these varied across the different levels of school diversity in both intuitive and counter-intuitive

ways. Because both positive and negative perceptions are ideal for engendering positive

outcomes, educational leadership should also be empowered to take more nuanced and

idiosyncratic actions regarding their own institutional characteristics when creating more positive

intergroup environments. More research is needed to understand what contextual features of

settings contribute to positive intergroup perceptions in order to fully transform educational environments into incubators of positive intergroup habits and skills. The literature has pointed to other contextual factors such as peer norms and preferences (Thijs, Verkuyten, & Grundel, 2014), social networks (Quillian & Campbell, 2003), social identity complexity promotion (Knifsend & Juvonen, 2013) and others as possible features of the school environment that could bolster the explanatory power of future intergroup relational research designs.

Limitations

While we have highlighted major themes, the complexity of our findings cannot be understated. Student perceptions of rules being fair presented a counter-intuitive result that highlights a possible limitation in focusing on school-level variables and outcomes rather than student level indicators. As students felt rules were less fair they perceived racial groups as becoming friendlier towards each other. Even though using average composites of randomly sampled students' responses at each school was ideal to accurately power and interpret the one-item outcomes measures provided in the ELS:2002, this approach did not allow our models to take into account the individual sociocultural background that could influence the intergroup perceptions of each student (Chavous et al, 2002). Neighborhood variables and experiences outside the classroom may also have a large effect on intergroup perceptions within the school. Studies that have looked at school and neighborhood contact effects have found they both contribute to generalized intergroup perceptions, so future study designs should consider assessing each context (Binder et al., 2009). Lastly, causal and directional claims cannot be drawn from this study's findings. The data used in this study was taken at one time and reflects a cross-sectional, not longitudinal structure.

Conclusions

The current study presents a strong beginning template for education stakeholders to influence intergroup relations at the school level. Focusing on school-level characteristics and controlling for location and geographic variables in a nationally representative sample of schools allows the results in this study to be more generalizable across the United States. Taking this evidence, schools should be structured in a way that minimizes violence and safety concerns and ultimately provide student populations opportunities to engage in smaller, more intimate interaction experiences to reduce possible negative interracial perceptions. As previously discussed, reducing negative outcomes is only part of the remedy; our findings suggest that developing positive perceptions between racial groups is dependent on more varied school climate features. To truly effect change that results in positive intergroup environments, local administrators need to be empowered with the tools to nimbly address idiosyncratic properties of their school.

The findings and recommendations from this study echo recent calls from developmental and intergroup relational research that contextual features of settings (Christ & Wagner, 2013), in this case schools, should be studied more purposefully to understand and develop interventional strategies that can actually influence intergroup outcomes. Currently applied work and programmatic evaluations have reported mixed results when trying to change intergroup attitudes and behaviors of children (Aboud & Levy, 2000; Tropp & Prenevost, 2008), this is not the result of a lack of theoretical foundation or understanding. Rather, more research is needed to understand how these contextual factors of settings influence intergroup contact change pathways. With growth in this field, school stakeholders can feel more confident when implementing an intervention or program designed to improve intergroup relations and ultimately prepare our children to become 21st century global citizens.

References

Aboud, F. E. & Levy, S. R. (2000). Interventions to reduce prejudice and discrimination in

children and adolescents. In S. Oskamp (Ed.), Reducing prejudice and discrimination (pp.

269-293). Mahwah, NJ: Erlbaum.

Aboud, F. E., Tredoux, C., Tropp, L. R., Brown, C. S., Niens, U., & Noor, N. M. (2012).

Interventions to reduce prejudice and enhance inclusion and respect for ethnic differences

in early childhood: A systematic review. *Developmental Review*. 32(4), 307-336.

Al Ramiah, A., & Hewstone, M. (2013). Intergroup contact as a tool for reducing, resolving, and

preventing intergroup conflict: Evidence, limitations, and potential. American

Psychologist, 68(7), 527.

Allport, G. W. (1954). *The nature of prejudice*. Basic books.

Aud, S., Wilkinson-Flicker, S., Kristapovich, P., Rathbun, A., Wang, X., & Zhang, J. (2013).

The Condition of Education 2013. NCES 2013-037. *National Center for Education

Statistics*.

Banks, J. A. (2006). *Race, culture, and education: The selected works of James A. Banks*. Taylor

& Francis.

Benner, A. D., & Graham, S. (2012). The Antecedents and Consequences of Racial/Ethnic

Discrimination During Adolescence: Does the Source of Discrimination Matter?

Bigler, R. S., & Liben, L. S. (2006). A developmental intergroup theory of social stereotypes and

prejudice. *Advances in child development and behavior*, *34*, 39-89.

Bronfenbrenner, U. (1977). Toward an experimental ecology of human development. *American

Psychologist*, *32*(7), 513.

Chavous, T. M. (2005). An intergroup contact-theory framework for evaluating racial climate on

predominantly White college campuses. American Journal of Community Psychology, 36(3-4), 239-257.

Chavous, T., Rivas, D., Green, L., & Helaire, L. (2002). Role of Student Background, Perceptions of Ethnic Fit, and Racial Identification in the Academic Adjustment of African American Students at a Predominantly White University. *Journal of Black Psychology*, *28*(3), 234–260.

Christ, O. & Wagner, U. (2013).Methodological Issues in the Study of Intergroup Contact: Towards a New Wave of Research. In G. Hodson & M Hewstone (eds.), *Advances in Intergroup Contact* (pp. 233-261). Psychology Press.

Davies, K., Tropp, L. R., Aron, A., Pettigrew, T. F., & Wright, S. C. (2011). Cross-Group Friendships and Intergroup Attitudes A Meta-Analytic Review. *Personality and Social Psychology Review*, *15*(4), 332-351.

Dessel, A. (2010). Prejudice in schools: Promotion of an inclusive culture and climate. Education and Urban Society, 42(4), 407-429.

Echenique, F., & Fryer, R. (2007). A measure of segregation based on social interactions. The Quarterly Journal of Economics, 122(2), 441-485.

Goldsmith, P. A. (2004). Schools' role in shaping race relations: Evidence on friendliness and conflict. Social Problems, 51(4), 587-612.

Green, C. W., Adams, A. M., & Turner, C. W. (1988). Development and validation of the school interracial climate scale. *American Journal of Community Psychology*, *16*(2), 241-259.

Gurin, P., Dey, E. L., Hurtado, S., & Gurin, G. (2002). Diversity and higher education: Theory and impact on educational outcomes. Harvard Educational Review, 72(3), 330-367.

Hodson, G., Hewstone, M. & Swart, H. (2013). Advances in intergroup contact: Epilogue and

future directions. In G. Hodson & M Hewstone (eds.), *Advances in Intergroup Contact* (pp. 233-261). Psychology Press.

Hurtado, S. (2005). The next generation of diversity and intergroup relations research. Journal of Social Issues, 61(3), 595-610.

Juvonen, J., Nishina, A., & Graham, S. (2006). Ethnic diversity and perceptions of safety in urban middle schools. Psychological Science, 17(5), 393-400.

Killen, M., Rutland, A., Abrams, D., Mulvey, K. L., & Hitti, A. (2013). Development of Intra- and Intergroup Judgments in the Context of Moral and Social-Conventional Norms. *Child Development*.

Knifsend, C. A. and Juvonen, J. (2013), Social Identity Complexity, Cross-Ethnic Friendships, and Intergroup Attitudes in Urban Middle Schools. *Child Development*.

Little, R. J. A., & Rubin, D. A. (1987). *Statistical analysis with missing data*. New York: John Wiley & Sons.

McKown, C. (2005). Applying ecological theory to advance the science and practice of school-based prejudice reduction interventions. Educational Psychologist, 40(3), 177-189.

Moody, J. (2001). Race, School Integration, and Friendship Segregation in America1. *American Journal of Sociology*, *107*(3), 679-716.

Pettigrew, T. F. (2008). Future directions for intergroup contact theory and research. International Journal of Intercultural Relations, 32(3), 187-199.

Pettigrew, T. F., & Tropp, L. R. (2011). *When groups meet: The dynamics of intergroup contact*. Psychology Press.

Quillian, L., & Campbell, M. E. (2003). Beyond black and white: The present and future of multiracial friendship segregation. *American Sociological Review*, 540-566.

Schofield, J. W. (2004). Fostering positive intergroup relations in schools. In J. A. Banks & C.

A. M. Banks (Eds.), *Handbook of research on multicultural education* (2nd ed., pp. 799–

812). San Francisco: Jossey-Bass.

Stark T. H., Stark A., Veenstra R. (2013). Generalization of positive and negative attitudes

towards individuals to out-group attitudes. *Personality and Social Psychology Bulletin*,

39, 608–622.

Terenzini, P. T., Cabrera, A. F., Colbeck, C. L., Bjorklund, S. A., & Parente, J. M. (2001). Racial

and ethnic diversity in the classroom: Does it promote student learning? *Journal of

Higher Education*, 5, 509-531.

Thijs, J., & Verkuyten, M. (2013). School ethnic diversity and students' interethnic relations.

British Journal of Educational Psychology.

Thijs, J., & Verkuyten, M. (2012). Ethnic attitudes of minority students and their contact with

majority group members. *Journal of Applied Developmental Psychology*, 33, 260–268.

Trickett, E. J., & Moos, R. H. (1974). Personal correlates of contrasting environments: Student

satisfaction in high school classrooms. *American Journal of Community Psychology, 2,* 1-

12.

Tropp, L. R., & Prenevost, M. A. (2008). The role of intergroup contact in predicting children's

interethnic attitudes: Evidence from meta-analytic and field studies. In S. R. Levy & M.

Killen (Eds.), Intergroup attitudes and relations in childhood through adulthood (pp. 236–

248). New York, NY: Oxford University Press.

Tseng, V., & Seidman, E. (2007). A systems framework for understanding social settings.

American journal of community psychology, 39(3-4), 217-228.

Vermeij, L., van Duijn, M. A. J., & Baerveldt, C. (2009). Ethnic segregation in context: Social

discrimination among native Dutch pupils and their ethnic minority classmates. *Social Networks*, 31, 230–239.

Wanous, J. P., & Hudy, M. J. (2001). Single-item reliability: A replication and extension. *Organizational Research Methods*, *4*(4), 361-375.

Tables & Figures

Table 1

Location, Demographic, and Outcome Percentages by Schools' Ethnic Heterogeneity

Variable	Full Sample (*N* = 721)	Low Heterogeneity (*n* = 240)	Medium Heterogeneity (*n* = 241)	High Heterogeneity (*n* = 240)
Location				
Northeast	0.18	0.22	0.11	0.20
Midwest	0.25	0.35	0.25	0.14
South	0.37	0.32	0.43	0.36
West	0.20	0.11	0.21	0.30
Urban	0.33	0.24	0.33	0.43
Suburban	0.49	0.49	0.50	0.47
Rural	0.18	0.27	0.17	0.10

Demographic

Female	0.47	0.50	0.47	0.45
Non-Native English Speakers	0.15	0.07	0.14	0.24
Diversity	0.41 (0.20)	0.24 (0.08)	0.49 (0.07)	0.70 (0.07)
Cross-Race Friendships	0.78 (0.43)	0.46 (0.22)	0.78 (0.33)	1.12 (0.42)
Public	0.76	0.70	0.79	0.86
Outcome				
Interracial Friendliness	3.21 (0.24)	3.14 (0.25)	3.23 (0.22)	3.26 (0.23)
Interracial Conflict	1.97 (0.48)	1.72 (0.40)	2.00 (0.43)	2.19 (0.48)

Table 2

Summary of Hierarchical Regression Analysis for Variables Predicting <u>Interracial Friendliness</u> (Full & Ethnic Heterogeneity Tercile Samples)

Variable	Full Sample (n = 721)	Low (n = 240)	Mid (n = 241)	High (n = 240)
	B	*B*	*B*	*B*
Midwest	-0.053 (0.034)	-0.04 (0.05)	-0.06 (0.08)	-0.03 (0.05)
South	**-0.156 (0.039)***	**-0.15** (0.06)**	**-0.20** (0.07)**	0.03 (0.04)
West	-0.028 (0.043)	0.09 (0.06)	-0.09 (0.09)	0.02 (0.04)
Urban	0.039 (0.031)	0.03 (0.06)	0.06 (0.05)	**0.08** (0.03)**
Rural	-0.084 (0.050)#	-0.09# (0.06)	-0.04 (0.07)	-0.07 (0.08)
Crime	-0.020 (0.091)	-0.15 (0.16)	0.05 (0.16)	0.12 (0.09)
SES	-0.025 (0.051)	0.04 (0.09)	0.05 (0.16)	**-0.19** (0.06)**
Female	0.075 (0.137)	0.09 (0.16)	**0.05* (0.16)**	0.01 (0.09)
Non-native Eng.	-0.088 (0.089)	-0.05 (0.17)	0.05# (0.16)	**-0.37** (0.12)**
Teach	**0.311 (0.074)***	**0.29* (0.14)**	0.18 (0.15)	**0.37*** (0.08)**
Rules	0.074 (0.081)	-0.02 (0.13)	-0.23 (0.14)	**0.34* (0.09)**

Fair	-0.135 (0.048)**	-0.21** (0.07)	-0.19* (0.07)	0.06 (0.07)
Same	0.211 (0.065)**	0.26** (0.09)	0.21 (0.12)	-0.04 (0.09)
Enforce	0.058 (0.074)	0.19* (0.09)	0.1 (0.10)	-0.15* (0.08)
Punish	-0.056 (0.073)	-0.06 (0.10)	0.00 (0.12)	-0.04 (0.07)
Safe	0.104 (0.082)	0.12 (0.10)	0.03 (0.16)	0.13 (0.08)
Spirit	0.045 (0.050)	-0.08 (0.06)	0.18** (0.07)	0.00 (0.05)
Violence	-0.124 (0.077)	-0.15# (0.08)	-0.08 (0.09)	'0.08 (0.07)
Acclim	-0.317 (0.113)**	-0.32* (0.13)	-0.07 (0.12)	-0.05 (0.20)
Public	-0.008 (0.090)	0.03 (0.09)	-0.04 (0.10)	-0.02 (0.05)
Enroll	0.004 (0.008)	0.01 (0.01)	-0.01 (0.01)	0.00 (0.01)
Tension	0.027 (0.024)	0.05 (0.04)	0.00 (0.04)	0.06 (0.04)
Disorder	-0.067 (0.032)*	-0.07# (0.04)	0.03 (0.04)	-0.01 (0.03)
EH_sch	-0.137 (0.149)	0.16 (0.25)	0.1 (0.32)	-0.13 (0.21)
ORF	0.007 (0.046)	0.02 (0.10)	0.04 (0.05)	0.14** (0.05)
EH_act	0.473 (0.154)**	0.15 (0.30)	0.50** (0.19)	0.59** (0.20)
EH_voc	0.028 (0.081)	0.19 (0.16)	-0.02 (0.11)	-0.08 (0.07)

EH_aca	0.077 (0.122)	0.12 (0.22)	-0.01 (0.16)	-0.11 (0.10)
R2	0.48	0.53	0.44	0.69

Note. #*p* < *.10.* **p < .05. **p < .01. ***p < .001.* Standard deviations appear in parentheses below means. Abbreviations (Acclim: *academic climate*. EH_sch: *school diversity*. ORF: *cross-racial/ethnic friendships*. EH_act: *extracurricular diversity*. EH_voc: *vocational track diversity*. EH_aca: *academic track diversity*).

Table 3

Summary of Hierarchical Regression Analysis for Variables Predicting <u>Interracial Conflict</u> (Full & Ethnic Heterogeneity Tercile Samples)

Variable	Full Sample (n = 721)	Low (n = 240)	Mid (n = 241)	High (n = 240)
	B	*B*	*B*	*B*
Midwest	0.022 (0.034)	-0.02 (0.05)	0.04 (0.07)	**0.15 (0.08)***
South	**0.072 (0.036)***	0.07 (0.05)	0.04 (0.07)	**0.16 (0.07)***
West	**0.119 (0.049)***	0.04 (0.06)	0.07 (0.09)	**0.16 (0.06)****
Urban	**-0.104 (0.036)****	-0.01 (0.05)	**-0.14 (0.06)***	**-0.09 (0.05)***
Rural	0.024 (0.034)	-0.03 (0.04)	0.07 (0.07)	**0.22* (0.08)****
Crime	**-0.215 (0.100)***	-0.10 (0.10)	-0.12 (0.20)	-0.14 (0.12)
SES	**-0.138 (0.042)****	-0.07 (0.05)	**-0.29 (0.09)****	**-0.23 (0.08)****
Female	-0.098 (0.084)	**-0.21 (0.10)***	0.13 (0.15)	-0.13 (0.12)
Non-native Eng.	0.189 (0.104)	-0.28 (0.15)#	0.06 (0.16)	**-0.44 (0.17)***
Teach	**-0.231 (0.098)****	0.01 (0.11)	**-0.38 (0.14)***	**-0.26 (0.12)***
Rules	**-0.237 (0.079)****	-0.21# (0.12)	**-0.55 (0.15)****	-0.05 (0.11)

Fair	**0.140 (0.067)***	0.04 (0.08)	**0.21 (0.10)***	**0.19 (0.09)***
Same	-0.069 (0.048)	-0.03 (0.06)	-0.01 (0.09)	-0.13 (0.11)
Enforce	0.022 (0.060)	0.06 (0.07)	0.05 (0.10)	0.04 (0.11)
Punish	0.132 (0.092)	0.09 (0.11)	0.14 (0.17)	0.17 (0.13)
Safe	**-0.446 (0.072)***	**-0.47 (0.10)***	**-0.49 (0.13)***	**-0.41 (0.10)***
Spirit	0.055 (0.046)	0.02 (0.05)	**0.23 (0.08)**	**-0.14 (0.07)***
Violence	**0.277 (0.061)***	**0.34 (0.09)**	**0.22 (0.10)***	0.16 (0.09)
Acclim	0.084 (0.098)	0.06 (0.13)	0.03 (0.17)	0.08 (0.33)
Public	**-0.128 (0.058)**	0.04 (0.06)	**-0.23 (0.08)**	**-0.14 (0.07)***
Enroll	**0.065 (0.008)***	**0.05 (0.01)***	**0.06 (0.01)***	**0.08 (0.01)***
Tension	**0.128 (0.026)***	**0.12 (0.04)***	**0.19 (0.05)***	**0.10 (0.06)***
Disorder	**-0.067 (0.023)**	0.00 (0.04)	-0.08 (0.05)	-0.04 (0.03)
EH_sch	0.215 (0.184)	**-0.66 (0.26)**	-0.10 (0.37)	0.33 (0.36)
ORF	**-0.141 (0.060)***	-0.04 (0.08)	-0.18 (0.09)#	-0.06 (0.05)
EH_act	**0.225 (0.147)***	**0.59 (0.19)**	-0.30 (0.23)	0.29 (0.26)
EH_voc	0.125 (0.079)	0.17 (0.13)	0.18 (0.14)	0.01 (0.05)

EH_aca	0.101 (0.094)	-0.06 (0.13)	**0.40 (0.14)****	-0.02 (0.17)
R2	0.74	0.74	0.74	0.80

Note. #$p < .10$. *$p < .05$. **$p < .01$. ***$p < .001$. Standard deviations appear in parentheses below means. Abbreviations (Acclim: *academic climate*. EH_sch: *school diversity*. ORF: *cross-racial/ethnic friendships*. EH_act: *extracurricular diversity*. EH_voc: *vocational track diversity*. EH_aca: *academic track diversity*).

Study 2

Pre-service Teachers' Multicultural Attitudes and Efficacy: The Differential Role of Individual, Interpersonal, and Training Experiences

Amir François & Joanna Lee Williams

Curry School of Education

University of Virginia

Author Note

Amir François & Joanna Lee Williams, Department of Educational Leadership, Foundations, and Policy, Curry School of Education, University of Virginia.

Amir François is now at Department of Mental Health, Bloomberg School of Public Health, Johns Hopkins University.

Correspondence concerning this article should be addressed to Amir François, Bloomberg School of Public Health, Johns Hopkins University, 615 N. Washington St., Baltimore, MD 21205. Contact: amir.francois@virginia.edu

Abstract

Current demographic trends call for teacher educators and programs to prepare future practitioners to confidently teach students from diverse backgrounds and create classroom environments that provide multicultural skill development and promote positive intergroup relations. The current study uses hierarchical multiple regression techniques to investigate pre-service teachers' individual, interpersonal, and teacher training factors and their associations with components of multicultural competence, namely multicultural attitudes and efficacy. Result confirmed hypotheses that 1) a difference in patterns of significance emerged between attitudes and efficacy and 2) ethnic identity and racial membership operated as moderators of factors for one of the outcomes of interest, multicultural efficacy. These findings suggest that teacher educators should view race and ethnic identity as important dimensions through which pre-service teachers view and interact with the world, their training, and ultimately, their future students. Implications for teacher preparation programs are discussed and recommendations for future training directions are provided.

Keywords: multicultural competence, attitudes, multicultural efficacy, race, ethnic identity, diversity

Study 2: Pre-service Teachers' Multicultural Attitudes and Efficacy: The Differential Role of

Individual, Interpersonal, and Training Experiences

As the demographics of the country become increasingly more racially, ethnically, and

culturally diverse (Aud et al., 2013; U.S. Census Bureau, 2011), the next generation of students

must be prepared to understand, interact, and cooperate with others from different backgrounds

and cultures (Banks, 2004; Cruz & Patterson, 2005; Keengwe, 2010). Schools and other

educational settings can provide opportunities for students to interact with members from

different sociocultural backgrounds, and if the climate is positive, students can develop healthy

cross-group relationships and attitudes (Dessel, 2010). Teachers are integral in establishing safe

and accepting environments in their classrooms through the modeling of norms and the

enforcement of positive intergroup habits and socials rules (Keengwe, 2010). The burden of

preparing the education workforce for these multicultural realities lies with teacher educators and

programs who are responsible for their training (Aud et al., 2013; Ball & Tyson, 2011; Banks,

2004). Even though research has persuasively made the case that multicultural competence in

school settings should constitute a major focus of teacher training programs (Gay & Howard,

2000; Ladson-Billings, 1994; Sleeter, 2008) we know little about the programmatic factors that

may increase a pre-service teacher's sense of competence in creating classroom settings that

foster appreciation of ethnic diversity and engender intergroup harmony. Moreover, teachers'

attitudes towards and comfort with diversity are likely influenced by their own personal

experiences with intergroup contact as well as the salience of their ethnicity; however neither

factor has received much attention in research on pre-service teachers (Hollins & Guzman, 2005;

Siwatu, Polydore, & Starker, 2009; Zeichner, 2011). Thus, the current study aims to understand

how pre-service teachers' (PSTs) personal experiences, attitudes, and ethnic identity along with

their exposure to multicultural training opportunities relate to their multicultural attitudes towards and perceived competence with diverse students.

Literature Review

Students, Teachers, and the Power of Classrooms

A student's experience of their school and classroom interracial/intercultural climate can have lasting effects on the development of cross-group attitudes, intergroup interactions, and overall multicultural fluency (Dessel, 2010; Keengwe, 2010). Teachers and administrators are integral in creating opportunities for diverse student populations to interact and assuring the climate exists for social learning to occur (Dessel, 2010; Pettigrew & Tropp, 2011). Educational settings that promote climates of racial fairness, endorse explicit anti-discrimination messages, and instill institutional flexibility and responsiveness have been associated with increased school engagement and pro-social motivation, requisites of positive intergroup relations (Bellmore et al., 2012; Mattison & Aber, 2007). Inculcating students with the skills and dispositions to confidently navigate and energetically participate in our increasingly diverse society can facilitate social-cognitive change and positive intergroup and democratic behavior (Dessel, 2010; Keengwe, 2010); moreover, altering the learning environment can also improve educational outcomes in all students, especially those from historically marginalized groups (Gurin, Dey, Hurtado, & Gurin, 2002; Hurtado, 2005).

Creating classroom environments that promote pluralistic values and instill empathetic and cross-cultural proficiencies in children regardless of background requires adults within the school setting, specifically classroom teachers, to exhibit a set of qualities encapsulated in the education literature as multicultural competence. With historical origins in desegregation research and conceptual roots in multicultural education theory (Banks, 2004), multicultural

competence is defined as the knowledge, attitudes, skills, and behaviors that result in effective

outcomes with others from different backgrounds (Bennett, 1990; McGeehan, 1982).

Multiculturally-competent teachers base their actions in awareness of and sensitivity towards

their students' cultural, racial, and ethnic backgrounds (Gay, 2002; Villegas & Lucas, 2004).

This sensitivity allows teachers to make stronger interpersonal connections with all students

irrespective of discordance between the student's and teacher's background (Banks, 2004; Gay,

2002).

Preparing Teachers for Difference

Although a number of studies within the last three decades have investigated whether

teachers are prepared for diverse student populations (e.g., Cruz & Patterson, 2005; Hollins &

Guzman, 2005; Sleeter, 2008), research reviews have identified inconsistent and inconclusive

findings (Cochran-Smith, Davis, & Fries, 2003; Hollins & Guzman, 2005; Sleeter, 2001).

Additionally, much of this research has focused on teachers' attitudes about diversity, and

although teacher multicultural attitudes have been tied to positive outcomes, attitudes and

behaviors can vary drastically within the same teacher (Mahon, 2006). Manifestation of attitude-

behavior congruence and determination of multicultural competence proficiency are shaped and

regulated by many factors including but not limited to personal characteristics, interpersonal

encounters, and formal training. The latter has received the most attention from teacher

preparation researchers (Grant & Gibson, 2011; Milner 2006); the current study builds upon that

literature base by testing a quantitative model that integrates personal, interpersonal, and teacher

training factors into an overall framework of variance contribution to components of

multicultural competence.

Teacher preparation programs are integral in the development of multicultural competence, but assuring the benefits of such training are actualized in schools and classrooms after graduates are credentialed is not guaranteed (Ball & Tyson, 2011). The ability to effectively execute these multicultural practices within a classroom could rely more upon a teacher's sense of efficacy in this domain than on general attitudes about educational diversity (Siwatu et al., 2009). Efficacy beliefs, specifically teacher self-efficacy beliefs, can be defined as "a teacher's belief in her or his ability to organize and execute the courses of action required to successfully accomplish a specific teaching task in a particular context" (Tschannen-Moran, Woolfolk Hoy, and Hoy, 1998, p. 117). Siwatu (2007) used this conceptualization along with foundational work on self-efficacy by Bandura (1997) to develop a framework regarding teachers' beliefs about their own abilities to be successful in a culturally diverse classroom. These culturally responsive teaching self-efficacy beliefs (i.e., "multicultural efficacy") have been argued to be more predictive of actual classroom behavior than multicultural attitudes (Siwatu, 2011; Siwatu et al., 2009; Sleeter & Owuor, 2012); thus, in the present study we examine both teacher multicultural *attitudes* and multicultural *efficacy* as separate dimensions of multicultural competence to assess how each one is related to individual, interpersonal, and training experiences of PSTs.

Personal and Interpersonal Influences of Multicultural Competence

While past and current research has established the theoretical importance of teacher education in creating multicultural competence, very little quantitative research has looked at the intersection between teacher education programs and the backgrounds and experiences PSTs bring to their training (Hollins & Guzman, 2005; Sleeter, 2008; Zeichner, 2011). Historically, teacher education students have been viewed as empty vessels waiting to be filled with lessons and skills that education schools and teacher preparation programs feel they should know, when

in actuality they are more accurately described as active participants in their learning

environment who bring unique ideas, attitudes, dispositions, and experiences (Milner, 2006;

Zeichner, 2011). Quantitative studies in training teachers for diverse populations and settings

have not often attended to the personal characteristics of the PST in predicting multicultural

competence outcomes. A recent study by Nadelson and colleagues investigated the associations

between multicultural competence (i.e., attitudes and efficacy) and PSTs' personal characteristics

and attitudes (i.e., ethnicity, gender, age, political disposition, etc.) along with amount of general

and diversity-specific courses taken (2012). The authors found no relationship between teachers'

multicultural attitudes and efficacy and their personal characteristics and college coursework,

except for their political worldviews (Nadelson et al, 2012). These finding are inconsistent with

other research showing that personal characteristics of PSTs are related to positive multicultural

perspectives (Aragon, Culpepper, McKee, & Perkins, 2013; Dee & Henkin, 2002; Kyles &

Olafson, 2008) and suggests that certain dispositions towards diverse settings and populations

and course histories are related to more progressive attitudes concerning diversity (Aragon et al.,

2013 Hollins & Guzman, 2005; Milner, 2006). Our study provides another opportunity to

investigate this topic given that the findings to date appear to be mixed.

Pre-service teachers, like their future students, view and experience the world through a

sociocultural filter created by many personal factors formed throughout their lifetime (Helms,

1990; Milner, 2006). One foundational aspect of a future teacher's sociocultural lens is their

disposition regarding ideas concerning diversity, openness to diverse perspectives, and

willingness to challenge one's own beliefs (Engberg, Meader, & Hurtado, 2003). Diversity

disposition, while similar to a teacher's multicultural attitudes, encompasses a broader notion of

inclusion beyond educational settings and stresses the importance of having a variety of voices

and ideas contributing to society. Racial group membership also determines the sociocultural

lens through which a PST views and interacts with the larger society. For instance, Hollins and

Guzman's extensive meta-analysis on teacher preparation for diverse populations concluded that

non-White PSTs are more concerned with social justice advocacy and meeting the needs of

ethnoculturally diverse populations compared to their White peers (2005). Ethnic minority PST's

participation in teacher education courses is also accompanied by the feeling that their

perspectives and experiences are not incorporated into the existing curriculum and culture of the

training institution and their cultural knowledge is not as valued as much as the White majority's

viewpoints (Hollins & Guzman, 2005).

PST's racial or ethnic group membership informs their ethnic identity, a dimension of

social identity that is determined by one's ethnic group membership and incorporates

associations between norms, behaviors, and values of that specific group (Phinney, 1992).

Importantly, ethnic identity helps to create a foundation for PSTs that dictates how they view

cultural difference and ultimately respond to these distinctions in the classroom (Helms, 1990;

Sleeter, 2008; Sleeter & Owuor, 2012). If PSTs can realize that their own culture (including the

current mainstream culture of "Whiteness") plays a role in their knowledge-construction, they

may be more prepared to consider the complex role of race and culture in their students' learning

and development, and adjust their pedagogy and practice accordingly (Fitchett, Starker, &

Salyers, 2012).

In addition to ethnic identity, contact between young adults and persons from dissimilar

racial/ethnic groups has also been shown to influence dimensions of multicultural competence

(Gurin et al., 2002; Pettigrew & Tropp, 2011). Research using the contact hypothesis (Allport,

1954) has found that settings that provide optimal conditions for intergroup interaction (i.e.,

interdependence and cooperation between groups, institutional support, and common goals across groups) will result in reduced prejudice, more positive attitudes, and increased confidence and comfort to have interactions with others from different groups (Hurtado, 2005; Sorensen, Nagda, Gurin, & Maxwell, 2009). Having actual history and familiarity with cross-racial/ethnic interaction can allow PSTs to structure their diverse classrooms and prepare their students for intergroup contact, rather than relying on lay theory and curricular platitudes (Fitchett et al., 2012; Keengwe, 2010). Researchers and theorists have urged the inclusion of critical reflective practices, identity exploration, and intergroup contact experiences within teacher education programs to ensure that PSTs see racial, ethnic, and cultural elements as integral to the academic and social development for all students (Fitchett et al., 2012; Hollins, 2011). The current study examines the role of these socially-constructed personal and interpersonal factors as they relate to multicultural attitudes and efficacy in a sample of future educators.

The Present Study

The current study explores how intrapersonal factors (e.g., ethnic minority status, ethnic identity, diversity disposition), interpersonal experiences (e.g., intergroup contact), and teacher training (e.g., multicultural curriculum and coursework) relate to two dimensions of multicultural competence: attitudes and self-efficacy. In particular this paper attempts to answer three research questions: 1) which factors predict teacher multicultural attitudes and multicultural self-efficacy beliefs; 2) is there a difference in the pattern of predictors between attitudes and efficacy; 3) do race and ethnic identity moderate the relation between interpersonal/training experiences and multicultural attitudes or efficacy? We hypothesize that intrapersonal factors will be positively related to multicultural attitudes and efficacy, based on prior research that has shown positive relationship with minority status and cultural competence outcomes (Grant & Gibson, 2011;

Hollins & Guzman, 2005). Based on meta-analytic findings we also hypothesize more intergroup contact will be positively related to both indicators of multicultural competence (Pettigrew & Tropp, 2011). Formal teacher training focused on diversity has also been shown to be positively correlated with multicultural competence components (Fitchett et al., 2012; Hollins & Guzman, 2005), and the authors expect this relation to emerge in our findings. The second and third research questions of the paper take an exploratory approach. If similar patterns emerge across multicultural competence components, than it can be inferred that education schools can continue implementing the teacher preparation approaches that have been historically targeted at attitudinal change in order to affect efficacy beliefs. However, if a difference in contributing factors materializes, this would signal that efforts to increase multicultural efficacy among PSTs would need to be developed. Lastly, the inclusion of one's ethnic minority status and ethnic identity account for the sociocultural lens through which PSTs view the world and make meaning of experiences with others from dissimilar backgrounds (Hollins, 2011). Exploring how these factors may moderate the associations between training and multicultural competence outcomes can inform teacher educators' curricular development and result in the tailoring of programmatic practices to specific populations of PSTs.

Methods

This study uses data from a larger, ongoing data collection effort made by a school of education to conduct prospective studies of the teacher education program and its participants. The present study draws from the program entry and exit surveys as well as an additional survey designed to assess PSTs' attitudes and beliefs about diversity. The survey was made available online during the 2010-2011 academic year, and all students in the five-year combined Bachelor

of Arts/Master of Teaching (BA/MT) and two-year post-graduate Master of Teaching (PGMT)

programs were eligible to participate.

Participants

Participants were 241 PSTs at a state university in the South Atlantic region of the United

States. The sample spanned in age from twenty years and younger to thirty years and older with

most participants in the 21 – 23 year age range. A majority (80.2%) were enrolled in the BA/MT,

with the remaining enrolled in the PGMT program. The sample was predominantly female

(83.7%), upper-middle/upper class (79.2%, using mother's education as a proxy), and

predominantly White (82.2%), which is representative of students enrolled in the masters

programs nationwide (Aud et al., 2013). Non-white students included individuals who reported

Asian (7.5%), Black/African-American (5.8%), Hispanic (1.2%), and American Indian/Pacific

Islander (0.8%) backgrounds.

<div align="center">

Measures

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Independent variables.

Covariates. We included several demographic measures to control for differences within

our sample that might influence the associations between of variables of interests and the

outcome measures in our models.

Gender. Gender status was determined in the current study by self-report. The item was

dummy-coded with "0" indicating "female" and "1" indicating "male". There was no option for

transgendered participants in this iteration of the survey.

Age. Age status was determined in the current study by self-report. The choices were

ordinal rather than continuous with participants asked to select between five age ranges (e.g., "20

or under," "24-26," "30 or over"). The item was then dummy-coded with "0" indicating "23 or

younger" and "1" indicating "24 or over".

Program status. This was also assessed during the general demographic survey with a

one-item measure, which was then dummy-coded. If the participant chose BA/MT they were

given a "0," PGMT students were assigned a "1".

Intrapersonal factors.

Diversity disposition. We used the pluralistic orientation (PO; Engberg, 2007) measure to

assess disposition towards diversity and openness to diverse ideas and perspectives. This is a

five-item index of students' perceived strengths related to pluralistic attitudes and behaviors.

Respondents rated themselves on a scale from 1 ("a major weakness") to 5 ("a major strength")

based on their self-perceived abilities to "see the world from someone else's perspective", "work

cooperatively with diverse groups of people", and three other dimensions. This measure was

developed from a national survey of college students and has adequate reliability with a

Cronbach's alpha of 0.73 (Engberg, 2007). This scale was intended to capture the skills, values,

and abilities of individuals to engage and participate in cooperative environments with diverse

individuals (Engberg, 2007). As stated earlier, this construct represents a broader

conceptualization of diversity viewpoints than education-specific multicultural attitudes, which

were assessed with a scale described below.

Ethnic identity. We used Phinney's Revised Multigroup Ethnic Identity Measure (MEIM-

R; Phinney & Ong, 2007) to measure ethnic identity in the current study. The MEIM-R is a

revised version of the original Multigroup Ethnic Identity Measure (MEIM; Phinney, 1992). It

consists of six items designed to assess an individual's level of ethnic group exploration (e.g., "I

have often talked to other people in order to learn more about my ethnic group), and level of

commitment, or sense of belonging, to their ethnic group (e.g., "I feel a strong attachment

towards my own ethnic group). Items are rated on a four-point scale from "strongly disagree" to

"strongly agree", with higher scores indicating a higher level of ethnic group identification.

Based on research with diverse college- and high school-age samples, the scale has demonstrated

good reliability, with a Cronbach's alpha of .81 for all six items (Phinney & Ong, 2007). The

mean of all items was used in the present study as an indicator of overall ethnic identity.

Racial group membership. Racial group membership status was determined in the current

study using self-report measures by the individual participant. Participants chose one out of

seven options (i.e., "American Indian/Alaska Native," "Asian," "Hispanic," "Black/African

American," "Caucasian/White," "Native Hawaiian or Other Pacific Islander," or "Other"). If this

data was missing from the general survey, we used the MEIM-R open-ended item asking the

participant to list their ethnic group(s) and subsequently assigned that participant to one of the

larger groups accordingly. If participants listed more than one group that did not correspond to

the same racial group (e.g., Irish American and African American, versus Irish American and

Italian American), they were placed under "Other." Due to the majority of our sample selecting

"White" as their racial/ethnic group (80.5%), we collapsed this measure into a dummy-coded

variable called Non-White, with "1" indicating ethnic minority status, and "0" indicating White.

Interpersonal experiences.

Intergroup Contact. We measured PSTs' contact experiences with racial out-group

members using a self-reported measure consisting of eight items adapted from the *Preparing*

Students for a Diverse Democracy survey (Hurtado, 2003). Participants were asked to report the

amount of interaction they had with people from different groups (e.g., "Asian

Americans/Pacific Islanders", "African Americans", "Multi-racial" etc.). Participants rated their

experiences on a scale from 1 ("no interaction") to 4 ("substantial interaction"), and assessed

their experiences in the teacher education program as well as in their undergraduate training in

general. The mean of all items corresponding to racial groups the participant was not a member

were used in the present study as a measure of intergroup contact.

Teacher training.

Multicultural course content. Participants indicated how many teacher education courses

they took that included content in one of six areas related to diversity (e.g., "materials/readings

on race and ethnicity issues", "opportunities for intensive dialogues between students with

different backgrounds and beliefs"). Responses range from "none" to "three or more".

Diversity-related courses. We also asked students whether or not they had taken two specific

courses offered through the school of education designed to promote intergroup contact and

multicultural awareness. Responses ranged for this item ranged from zero (i.e., student took

neither course) to two (i.e., student took both courses). The item was then dummy-coded with

"0" indicating no courses were taken and "1" indicating some diversity-related coursework.

Dependent variables.

Multicultural competence.

Multicultural efficacy. Participants completed 20 items from the efficacy subscale of the

Multicultural Efficacy Scale (MES; Guyton & Wesche, 2005), which taps into self-beliefs about

ones' abilities to teach diverse students. In response to each action item (e.g., "I can develop

instructional methods that dispel myths about diverse groups", "I can help students view history

and current events from a diverse perspective"), respondents rated their ability on a four-point

scale from 1 ("I do not believe I could do this very well") to 4 ("I am quite confident that this

would be easy for me"). The mean of all 20 items was used in the present study as an indicator of

multicultural teaching self-efficacy. The scale has demonstrated good reliability, with a Cronbach's alpha of 0.93.

Multicultural attitudes. PSTs' multicultural attitudes were assessed using the Teacher Multicultural Attitude Survey (TMAS; Ponterotto, Baluch, Greig, & Rivera, 1998), a self-report inventory of teachers' multicultural awareness and sensitivity. In response to each item (e.g., "Teaching methods need to be adapted to meet the needs of a culturally diverse student group", "As classrooms become more culturally diverse, the teacher's job becomes increasingly rewarding", "Being multiculturally aware is not relevant for the subject I teach"), participants rate their agreement to each prompt on a five-point scale from 1 ("strongly disagree") to 5 ("strongly agree"). The mean of all 20 items was used in the present study as an indicator of teacher multicultural attitudes. The scale has demonstrated adequate reliability, with a Cronbach's alpha of 0.71.

Analysis Plan

The missing data was a relatively small percentage of the variables (1.70%). The data were examined for lack of normality, lack of linearity, and outliers through examination of basic statistics, histograms, scatterplots, and bivariate correlations. These assumptions were found to be met and multiple imputations for missing data was performed (Allison, 2002). Recent work has shown that the number of imputations done will affect results (Bodner, 2008), so 100 imputations were performed. All imputations converged and were pooled for the final statistics shown in Table 1. All independent variables were assessed for multicollinearity; acceptable criteria included a variance inflation factor (VIF) of less than 2.0 and a collinearity tolerance of greater than .76 (Aguinis, 2004). Given our focus on racial/ethnic diversity, we also conducted t-

tests to determine if there were differences on the key variables between White and non-White participants.

Following an examination of the data, we conducted hierarchical linear regression analyses using multicultural efficacy and multicultural attitudes as the dependent variables. For each outcome, independent variables were entered in three blocks beginning with covariates (gender, age, and program status) followed by intrapersonal factors (diversity disposition, ethnic identity, and race), interpersonal experiences (intergroup contact), and teacher training variables (multicultural course content, diversity courses) in their own block. We chose hierarchical linear regression to assess the unique contribution of each group of predictors, allowing for examination of variance explained by each block (i.e., intrapersonal, interpersonal, and teacher training factors). Finally, a set of interaction terms were entered in the last block. Specifically, we were interested in whether or not race and ethnic identity moderated the associations between other independent variables (diversity disposition, intergroup contact, multicultural course content, and diversity courses) and the outcome variables. Significant interaction terms were probed further by examining scores of participants who were one standard deviation (*SD*) above and below the mean (Aiken & West, 1981), and simple slope analyses were conducted to determine which subgroup effects were driving the interaction. All analyses were conducted using SPSS version 21.

Results

Preliminary Analyses

As shown in Table 1, there were small-to-moderate, positive correlations between several variables. Moderate correlations did not exceed $r = 0.47$, which minimizes the likelihood of multicollinearity within our sample variables (Aguinis, 2004); additionally, all variables were in

the acceptable range for VIF and collinearity tolerance scores. Concerning group tends, racial

group membership was correlated with ethnic identity and multicultural attitudes but not with

multicultural efficacy. T-tests did reveal a statistically significant difference between White and

non-White students on multicultural attitudes (White: M = 3.89; Non-White: M = 4.06; t = -2.21,

p = .027) and ethnic identity (White: M = 3.13; Non-White: M = 3.92; t = -6.39, p < .001).

Multicultural Efficacy

Table 2 reports the unstandardized and standardized coefficients for multicultural

efficacy. There were no main effects of gender, age, or program status. Ethnic identity, diversity

disposition, intergroup contact and multicultural course content were all significant predictors of

multicultural efficacy, with higher scores on each independent variable predicting higher self-

reported efficacy. The addition of variables in the next step increased the predictive ability of

our model above and beyond the covariates entered in the first step (ΔR^2: $F_{(6, 231)}$ =13.27, p<.001)

and accounted for 27.4% of the variation in the sample. The last step of the model shown that

the addition of interaction terms accounted for an additional 7.6% of the variance in multicultural

efficacy (ΔR^2: $F_{(8, 223)}$ =2.97, p=.004). Ethnic identity significantly moderated the association

between two variables (intergroup contact and diversity courses) and the outcome, and there was

a significant interaction between race and diversity disposition.

To break down the interaction terms, the association between intergroup contact and

diversity courses taken and multicultural efficacy was examined when PSTs' level of ethnic

identity was at the mean (i.e., = 0 on the measure of ethnic identity), 1 SD above the mean and 1

SD below the mean. Examination of the simple slopes revealed a significant, positive association

between intergroup contact and efficacy among PSTs with low ethnic identity (b = .219, SE_b =

.076, t = 2.90, p = .004); the intergroup contact-efficacy slope was not significant for PSTs with

high ethnic identity (Figure 1, Appendix C). Ethnic identity was also a significant moderator of the relationship between diversity courses taken and multicultural efficacy. Among PSTs with high ethnic identity, diversity coursework was not related to multicultural efficacy; however, among PST's with low ethnic identity, there was a trend toward significance indicating that those who had taken some diversity courses had lower efficacy than those who had taken no diversity courses (t [239] = 1.671, p = 0.09). Racial group status moderated the association between diversity disposition and multicultural efficacy. The simple slope test for White PSTs showed a significant, positive association between diversity disposition and efficacy (b = .378, SE_b = .055, t = 6.90, p < .001), while the slope for the non-White sample was non-significant (Figure 2, Appendix C).

Multicultural Attitudes

Table 3 reports the findings for multicultural attitudes. Neither gender, age, nor program status were significant predictors of the dependent variable. In the second step, diversity disposition, multicultural course content, and number of diversity courses taken were all positive, significant predictors of PSTs' multicultural attitudes, and the addition of these variables accounted for 28.9% of the variance in the outcome (ΔR^2: $F_{(6, 205)}$=14.18, p<.001). The addition of the interaction terms in step three did not improve the predictive power of the model; all interactions were non-significant.

<center>**Discussion**</center>

In contemporary educational settings, ethnic diversity has become the norm rather than the exception, and it is increasingly important to identify those factors that promote a teacher's sense of agency in effectively navigating multicultural classrooms. Moreover, researchers must consider a range of factors extending from ethnic group membership and a sense of connection

to one's group, to exposure promoted by structural diversity (i.e., ethnic diversity in a cohort of

PSTs), to content included in coursework, as each factor may differentially relate to multicultural

competence. Consistent with our hypotheses, we found that self-reported multicultural efficacy

scores and teacher multicultural attitudes were related in different ways to intrapersonal,

interpersonal, and training experiences in our PST sample. Specifically, we found that higher

levels of ethnic identity and intergroup contact were associated with higher levels of

multicultural efficacy, while the number of courses related to diversity topics was positively

predictive of multicultural attitude scores. Two factors that were related similarly to both

outcome variables were general attitudes about diversity (i.e., diversity disposition) and

multicultural content in educational courses, which each had a positive association with

multicultural attitudes and efficacy. Lastly, divergent patterns emerged in the moderation

analyses. We found no moderation effects of ethnic identity nor racial group membership for

teacher multicultural attitudes, however for multicultural efficacy there were three significant

interactions.

The findings from our study confirm the literature's theoretical assumptions that PSTs

have background experiences and beliefs about culture and diversity that not only have a role in

shaping attitudes towards students from out-groups, but also their beliefs concerning their future

interactions with these students (Milner, 2006; Zeichner, 2011). Diversity disposition, or global

beliefs about a diverse society, was a significant predictor of both teacher multicultural attitudes

and multicultural efficacy. This finding is consistent with the current literature as the individual

components that comprise the diversity disposition construct (e.g., openness to diversity, etc.)

have been linked to increased interaction and comfort with cross-race peers and group members

(Hurtado, 2005). Possessing attitudes that view diversity and difference as integral to social and

academic learning is foundational to forming the confidence and motivation to become multiculturally competent. PSTs that evince higher levels of diversity disposition may be better able to confront and manage multicultural issues that might arise in their future classrooms due to their drive to understand and include all voices and experiences (Gay, 2002; Gay & Howard, 2000).

Sociocultural factors included in our study were found to be significant predictors of the dependent variables, but they operated differently. First, ethnic identity was a significant predictor of efficacy but not attitudes. One possible explanation for this difference is informed by the finding that college students with a more "achieved" ethnic identity, represented by high levels of exploration and commitment, have more positive and open attitudes towards diversity and intergroup contact compared to peers with lower levels of ethnic identity (Phinney, Jacoby, & Silva, 2007). Thus, PSTs who have spent time exploring their own ethnic group membership might have more experience with diverse persons and dealing with issues, conflicts, and topics around difference, especially racial, ethnic, and cultural differences, which may in turn increase their sense of efficacy with respect to creating a multicultural classroom environment. In contrast, any PST may be likely to endorse a general belief that classrooms and curricular content should reflect diversity (i.e., multicultural attitudes) regardless of the depth of their own identity exploration. Importantly, although teacher education programs cannot change a student's racial group membership, they can potentially create experiences that facilitate more in-depth ethnic identity exploration, which in turn might facilitate a higher sense of multicultural self-efficacy among PSTs (Ball & Tyson, 2011; Gay, 2002).

Interactions with racial out-group members should also be considered as a leverage point for facilitating multicultural competence among PSTs. In our study, intergroup contact was

found to be a significant predictor of multicultural efficacy, but not attitudes. Finding that

multicultural efficacy is related to actual interactions with out-group members, yet attitudes are

invariant over the amount of intergroup contact, implicates the experiential component of the

contact experience in facilitating efficacy. Intergroup contact theory posits that increased

interaction with out-group members in the presence of Allport's (1954) optimal conditions (i.e.,

institutional support, equal status between groups, common goals, and intergroup cooperation)

can lead to more positive cross-group attitudes and increased intergroup comfort through

reduction of social-cognitive barriers and increased multicultural awareness (Pettigrew & Tropp,

2011). Multicultural efficacy, as the more practical dimension of multicultural competence,

requires accurately gauging one's supposed ability to teach and interact with diverse populations.

To appraise one's own comfort with these populations, PSTs might rely on past or current

intergroup contact experiences. Consistent with the theory, more chances to engage with out-

group members may increase a PST's confidence in handling multicultural issues in classroom

given their larger real-life knowledge base developed through intergroup interaction. In other

words, future teachers who have already dealt with intergroup anxiety, developed cross-group

empathy, and grown their general multicultural knowledge may feel more efficacious in

leveraging the diversity that exists within their classroom for a positive intergroup learning

environment.

  A major focus of this paper was to quantitatively explore the role of diversity and

multicultural coursework in preparing multicultural competent teachers. Our results affirm the

conclusions from other studies examining the connection between coursework and multicultural

competence components (Dee & Henkin, 2002; Fitchett et al., 2012; Hollins & Guzman, 2005).

We found that the amount of self-reported multicultural course content integrated into a PST's

program of study was positively related to both multicultural efficacy and attitudes; however, courses that were explicitly focused on diversity only predicted more positive multicultural attitudes. While these findings validate conclusions from existing studies, more targeted research is needed to determine the directionality of these relationships and disentangle selection verses socialization processes. On the one hand, it is possible that the course content related to diversity leads to growth in students' multicultural competence; on the other hand, it may be that students who already have high levels of multicultural competence actively seek out courses in which multicultural content is included. It is also possible that the association is bidirectional. In any case, future researchers should consider methodological approaches that would allow for further unpacking of these processes, such as experimental designs in which exposure to multicultural content is randomly assigned, longitudinal studies that provide opportunities for cross-lagged analyses, or qualitative studies in which students attitudes and experiences can be examined in greater depth.

The moderation analyses included in our study added nuance to the field's intuition about the role of sociocultural forces in shaping PSTs' multicultural outcomes (Hollins, 2011). When probing significant interaction terms in our models, we found consistent trends. Specifically, interpersonal and training factors (i.e., intergroup contact and number of diversity courses taken) played a much greater role in determining levels of multicultural efficacy among participants with low ethnic identity compared to their peers with high ethnic identity, whose levels of efficacy were relatively invariant regardless of other factors. These results underscore the importance of teacher educators taking the time to understand how the heterogeneity of the PSTs' backgrounds can complicate the training practices in the classroom. Depending on their level of ethnic identity, a PST might be more or less responsive to certain approaches. Race also

emerged as a factor related to multicultural competence. For White PSTs, there was a stronger association between diversity disposition and multicultural efficacy compared to non-White PSTs. Consistent with our main effects, moderation analyses support the case that ethnic identity and race seem to matter for multicultural efficacy development and may represent leverage points in the PST population. However, we must note that our sample included mostly White, female PSTs. Studies of White racial identity are limited, and questions remain about what higher ethnic identity scores mean to this population (Helms, 1990; Perry, 2001). Thus, while ethnic identity, both on its own and in conjunction with other interpersonal and training factors, appears to make a difference with respect to multicultural competence, a great deal more work is needed to better understand how to benefit from this finding in teacher training programs.

While the takeaways of this study are many, future work must improve upon the methodologies and measurement approaches currently employed in the field, including this study, to truly and objectively make the case for how to improve multicultural competence development in PSTs. In the present study, data were collected at only one time throughout the year across all participants, making the conclusions we can draw from the data correlational and static at best. Experimental and longitudinal designs would allow causal and developmental conclusions, respectively, to be gleaned from studies with PSTs, truly arming teacher educators with evidence-based recommendations for future program design. In addition to design, scale development, construct precision, and measurement triangulation is required to more accurately target theories and concepts of interests to teacher education programs. In designing the current study we struggled with finding valid and reliable scales to measure multicultural competence and were unable to use multiple measures to create latent constructs that completely reflected our

theoretical interests. Observational measures could also add rich objective, confirmatory

information to the self-reported scales used in the study to boost internal validity concerns.

While our sample demographics closely matched national teacher education enrollment trends

(Aud et al., 2013), our sample did not account for the heterogeneity present within the non-White

PST population. An African-American PST might differ drastically from an Asian-American

PST on a surfeit of dimensions. Due to our lack of representation of ethnocultural groups, we

were forced to group all non-White PSTs together thus losing valuable information of

differences between racial and ethnic minority PSTs. This numerical discrepancy between the

White and non-White PSTs could also have affected our significant interpersonal finding as there

is a greater possibility non-White PSTs would engage in intergroup contact experiences. We

believe that this was not the case in our sample, however, due to the racial membership not

emerging as a significant moderator of the association between intergroup contact and

multicultural competence. Lastly, our analytic approach allowed us to see if teacher training

contributions were being made after accounting for the individual characteristics and

interpersonal encounters PSTs brought to their training experience, but did not account for

setting context in which the training occurred. Incorporating environmental and structural

context variables into the analyses through multivariate and multi-level approaches can inform

the "how" and "when" issues of developing multicultural competence – questions that are of

utmost importance to teacher educators concerned with creating classrooms and schools that

handle diversity and difference well (Matsko & Hammerness, 2014; Perry, 2001).

Conclusions

Teacher training programs can capitalize on the information provided by this study and

similar scholarship to insure that future teachers are prepared to create inclusive and

multiculturally harmonious environments in schools. First, schools of education need to understand and deliberately conduct themselves in accordance to their goal of attitude and/or efficacy development. While inextricably related, these two constructs of multicultural competence are separate, distinct, and require nuanced approaches. More attention should be given to the goals of teacher education courses and experiences, namely which multicultural competence dimension is targeted for change and development. Depending on the focus of the training, certain intrapersonal, interpersonal, and teacher training factors should be employed and leveraged for specific behavioral or dispositional objectives. It may be that individual and interpersonal factors, like ethnic identity and intergroup contact with other racial groups, might be more influential in furthering the more concrete and applied efficacy beliefs that correspond to how one would actually perform in a real-world classroom setting (Siwatu, 2011; Siwatu et al, 2009). The findings may also indicate the importance of offering and even requiring students to internally reflect on their own cultural identities and engage with diversity-related issues and other cultures during their teaching program (Sleeter, 2008).

Teacher education programs committed to training multiculturally competent teachers and equipping the workforce with skills to create safe and inclusive school environments can take away a great deal from this paper's findings. The general finding that intrapersonal, interpersonal, and teacher training factors are strongly related to multicultural competence confirm the larger assumptions and conclusions of the literature as a whole (Aragon, et al., 2013; Ball & Tyson, 2011; Kyles & Olafson, 2008) and entreat the awareness and more importantly, the integration, of these factors into the design of teacher training programs. More than just incorporating content and number of courses related to diversity and multicultural education, teacher educators must become sensitive to individual PSTs as co-participants with agency, who

bring their past experiences and personal beliefs with them into the training process. One way to leverage the power of interpersonal interaction to help develop multicultural competence would be to better recruit PSTs with more diverse experiences and viewpoints (Sleeter, 2001; Villegas & Lucas, 2004). While impossible to ensure, creating a more racially, ethnically, culturally, gender, and regionally diverse student body and crafting opportunities for true interpersonal interaction and cooperation can give education schools a better probability of having students develop first-hand the skills and dispositions to embrace diversity and understand and value inclusive environments (Sorensen et al., 2009). Lastly, providing varied, diverse, and immersive teacher field experiences may lead to better multicultural outcomes building upon principles mentioned earlier (Pohan, Ward, Kouzekanani, & Boatright, 2009; Sleeter, 2008). Having PSTs learn first-hand what their future classroom may look like, interacting with students from diverse backgrounds, and learning strategies and skills from a veteran teacher in the trenches might have the largest influence on their future practice (Sleeter, 2008). We hope the teacher education field views this paper as a clarion call to not only become more deliberate to the goals of diversity and multicultural coursework in their programs, but to also prepare for and leverage the backgrounds of their PST populations to ensure the future schools and classrooms of America are places of multicultural learning, understanding, and inclusion.

References

Aguinis, H. (2004). *Regression analysis for categorical moderators*. Guilford Press.

Allison, P. D. (2002). Missing data (Sage University Paper Series on Quantitative Applications

in the Social Sciences). Thousand Oaks, CA: Sage.

Allport, G. W. (1954). *The nature of prejudice*. Basic books.

Aud, S., Wilkinson-Flicker, S., Kristapovich, P., Rathbun, A., Wang, X., & Zhang, J. (2013).

The Condition of Education 2013. NCES 2013-037. *National Center for Education

Statistics*.

Ball, A., & Tyson, C. A. (Eds.). (2011). *Studying diversity in teacher education*. Lanham, MD:

Rowman & Littlefield.

Banks, JA (2004). Multicultural education: Historical development, dimensions, and practice.

In J.A. Banks & C.A.M. Banks (Eds.). *Handbook of research on multicultural education*.

Bodner, T. E. (2008). What improves with increased missing data imputations? Structural

Equation Modeling, 15(4), 651-675.

Cruz, B. C., & Patterson, J. (2005). Cross-cultural simulations in teacher education: Developing

empathy and understanding. *Multicultural Perspectives*, *7*(2), 40-47.

Dessel, A. (2010). Prejudice in schools: Promotion of an inclusive culture and climate.

Education and Urban Society, 42(4), 407-429.

Engberg, M. E. (2007). Educating the workforce for the 21st century: A cross-disciplinary

analysis of the impact of the undergraduate experience on students' development of a

pluralistic orientation. *Research in Higher Education*, *48*(3), 283-317.

Fitchett, P. G., Starker, T. V., & Salyers, B. (2012). Examining culturally responsive teaching

self-efficacy in a preserve social studies education course. *Urban Education*, *47*(3),

    585-611.

Gay, G. (2002). Preparing for culturally responsive teaching. *Journal of Teacher*

    Education, *53*(2), 106-116.

Gay, G., & Howard, T. C. (2000). Multicultural teacher education for the 21st Century. *Teacher*

    Educator, 36(1), 1–16.

Grant, C., & Gibson, M. (2011). Diversity and teacher education: A historical perspective on

    research and policy. In A. F. Ball & C. A. Tyson (Eds.), *Studying diversity in teacher*

    education. Lanham, MD: Rowman & Littlefield.

Gurin, P., Dey, E. L., Hurtado, S., & Gurin, G. (2002). Diversity and higher education: Theory

    and impact on educational outcomes. *Harvard Educational Review*, 72(3), 330-367.

Guyton, E. M., & Wesche, M. V. (2005). The multicultural efficacy scale: Development, item

    selection, and reliability. *Multicultural Perspectives*, *7*(4), 21-29.

Helms, J. E. (1990). *Black and white racial identity: Theory, research, and practice.* New York:

    Greenwood Press.

Hollins E. R. (2011). The meaning of culture in learning to teach: The power of socialization and

    identity formation. In A. F. Ball & C. A. Tyson (Eds.), *Studying diversity in teacher*

    education. Lanham, MD: Rowman & Littlefield.

Hollins, E., & Guzman, M. T. (2005). Research on preparing teachers for diverse populations. In

    M. Cochran-Smith & K. Zeichner (Eds.), *Studying teacher education* (pp. 477-548).

    Mahwah, NJ: Lawrence Erlbaum.

Hurtado, S. (2003). Preparing college students for a diverse democracy. Final report to the U.S.

Department of Education, Office of Educational Research and Improvement, Field

Initiated Studies Program.

Hurtado, S. (2005). The next generation of diversity and intergroup relations research. *Journal of Social Issues*, 61(3), 595-610.

Keengwe, J. (2010). Fostering cross cultural competence in preservice teachers through multicultural education experiences. *Early Childhood Education Journal*, *38*(3), 197-204.

Ladson-Billings, G. (1994). What we can learn from multicultural education research. *Educational Leadership*, 51(8), 22–26.

Matsko, K. K., & Hammerness, K. (2014). Unpacking the "urban" in urban teacher education: Making a case for context-specific preparation. *Journal of Teacher Education, 65(2),* 128-144.

Mahon, J. (2006). Under the invisibility cloak? Teacher understanding of cultural difference. *Intercultural education*, *17*(4), 391-405.

Milner, H. R. (2006). Preservice teachers' learning about cultural and racial diversity: Implications for urban education. *Urban Education*, *41*(4), 343-375.

Perry, P. (2001). White means never having to say you're ethnic: White youth and the construction of "cultureless" identities. Journal of Contemporary Ethnography, 30, 56–91.

Pettigrew, T. F., & Tropp, L. R. (2011). *When groups meet: The dynamics of intergroup contact*. Psychology Press.

Phinney, J. S. (1992). The multigroup ethnic identity measure a new scale for use with diverse groups. *Journal of adolescent research*, *7*(2), 156-176.

Phinney, J. S., Jacoby, B., & Silva, C. (2007). Positive intergroup attitudes: The role of ethnic

identity. *International Journal of Behavioral Development, 31(5),* 478-490.

Phinney, J. S., & Ong, A. D. (2007). Conceptualization and measurement of ethnic identity:

Current status and future directions. *Journal of Counseling Psychology*, *54*(3), 271.

Pohan, C. A., Ward, M., Kouzekanani, K., & Boatright, C. (2009). The Impact of Field

Placement Sites on Preservice Teachers' Beliefs about Teaching Diverse Students.

School-University Partnerships, 3(1), 43-53.

Ponterotto, J. G., Baluch, S., Greig, T., & Rivera, L. (1998). Development and initial score

validation of the teacher multicultural altitude survey. *Educational and psychological*

measurement, *58*(6), 1002-1016.

Siwatu, K. O. (2007). Preservice teachers' culturally responsive teaching self-efficacy and

outcome expectancy beliefs. *Teaching and Teacher Education*, *23*(7), 1086-1101.

Siwatu, K. O. (2011). Preservice teachers' sense of preparedness and self-efficacy to teach in

America's urban and suburban schools: Does context matter? *Teaching and Teacher*

Education, *27*(2), 357-365.

Siwatu, K. O., Polydore, C. L., & Starker, T. V. (2009). Prospective elementary school teachers'

culturally responsive teaching self-efficacy beliefs. *Multicultural Learning and Teaching*,

4(1), 1–15.

Sleeter, C. E. (2001). Preparing teachers for culturally diverse schools research and the

overwhelming presence of whiteness. *Journal of teacher education*, *52*(2), 94-106.

Sleeter, C. E. (2008). Preparing White teachers for diverse students. In M. Cochran-Smith, S.

Feiman-Nemser, & D. J. McIntyre (Eds.), *Handbook of research on teacher education:*

Enduring questions in changing contexts (3rd ed.). New York: Routledge.

Sleeter, C. E. & Owuor, J. (2012). Research on the impact of teacher preparation to teach diverse

students: The research we have and the research we need. *Action in Teacher Education*, 33:5-6, 524-536.

Sorensen, N., Nagda, B. R. A., Gurin, P., & Maxwell, K. E. (2009). Taking a "Hands On" Approach to Diversity in Higher Education: A Critical-Dialogic Model for Effective Intergroup Interaction. *Analyses of Social Issues and Public Policy*, *9*(1), 3-35.

U.S. Census Bureau. (2011). *Overview of race and Hispanic origin: 2010.* (OIG publication No. C2010BR-02). Washington, DC: Author. Retrieved from http://www.census.gov/prod/cen2010/briefs/c2010br-02.pdf

Villegas, A. M., & Lucas, T. (2004). Diversifying the teacher workforce: A retrospective and prospective analysis. In M. A. Smylie & D. Miretzky (Eds.), *Developing the teacher workforce*: Chicago, IL: University of Chicago Press.

Zeichner, K. (2011). Embracing complexity and community in research on multicultural teacher education. In A. F. Ball & C. A. Tyson (Eds.), *Studying diversity in teacher education*. Lanham, MD: Rowman & Littlefield.

Tables & Figures

Table 1

Bivariate Correlations and Means of Study Variables (N = 241)

Measure	1	2	3	4	5	6	7	8	9	10	11
1. Gender	-	0.07	0.21**	-0.11	0.06	-0.11*	0.08	0.01	0.08	0.04	-0.07
2. Age		-	0.57***	-0.08	-0.11*	-0.02	-0.01	0.07	0.03	-0.10	0.11*
3. Program Status			-	-0.06	-0.07	-0.05	-0.08	-0.02	0.05	-0.08	0.07
4. Ethnic Identity				-	0.39***	0.11*	0.13*	0.01	0.10	0.26***	0.17**
5. Race					-	0.01	0.05	0.08	0.01	0.08	0.15*
6. Intergroup Contact						-	0.23***	0.11*	0.21**	0.25***	0.14*
7. Diversity Disposition							-	0.14*	0.24***	0.47***	0.29***
8. Diversity Courses Taken								-	0.12*	0.01	0.31***
9. Multicultural Course Content									-	0.26***	0.37***
10. Multicultural Efficacy										-	0.38***

11. Teacher Multicultural

-

Attitudes

M (N = 241)	0.17	0.13	0.20	3.30	0.18	1.66	4.00	0.18	1.92	3.02	3.93
SD	0.38	0.34	0.40	0.87	0.38	0.47	0.58	0.38	0.64	0.43	0.43

Note: Gender (0 = female; 1 = male), Age (0 = 23 years old and younger; 1 = 24 years old and older), Program Status (0 = BA/MT; 1 = PGMT), Race (0 = White; 1 = Non-White), and Diversity Courses Taken (0 = no courses taken; 1 = one or more courses taken) were each dummy coded; numbers represent percentages of variable labeled "1". *p < .05. **p < .01. ***p < .001.

Table 2

Summary of Hierarchical Regression Analysis for Variables Predicting <u>Multicultural Efficacy</u> (N = 241)

Variable	Step 1		Step 2		Step 3	
	B	*SE*	*B*	*SE*	*B*	*SE*
Gender	0.06	0.08	0.02	0.07	0.02	0.07
Age	-0.09	0.10	-0.10	0.09	-0.11	0.09
Program Status	-0.05	0.09	0.00	0.08	0.03	0.08
Ethnic Identity (EI)			**0.08****	0.03	0.05	0.03
Race			-0.02	0.07	-0.07	0.07
Intergroup Contact (IC)			**0.11***	0.05	0.06	0.06
Diversity Disposition (DD)			**0.29*****	0.04	**0.38*****	0.05
Diversity Courses Taken (DC)			-0.07	0.06	-0.07	0.07
Multicultural Course Content (MCC)			**0.09***	0.04	0.06	0.04
EI × IC					**-0.19***	0.08
EI × DD					0.06	0.06
EI × DC					**0.18***	0.08

EI × MCC			-0.02	0.05
Race × IC			0.25	0.17
Race × DD			**-0.33****	0.13
Race × DC			0.16	0.17
Race × MCC			0.18	0.11
R^2	0.01	0.29	0.36	
F for change in R^2	0.91	**13.27*****	**2.97****	

Note: Gender, Age, Program Status, Race, DC, and Race X DC were entered into the model as nominal variables.
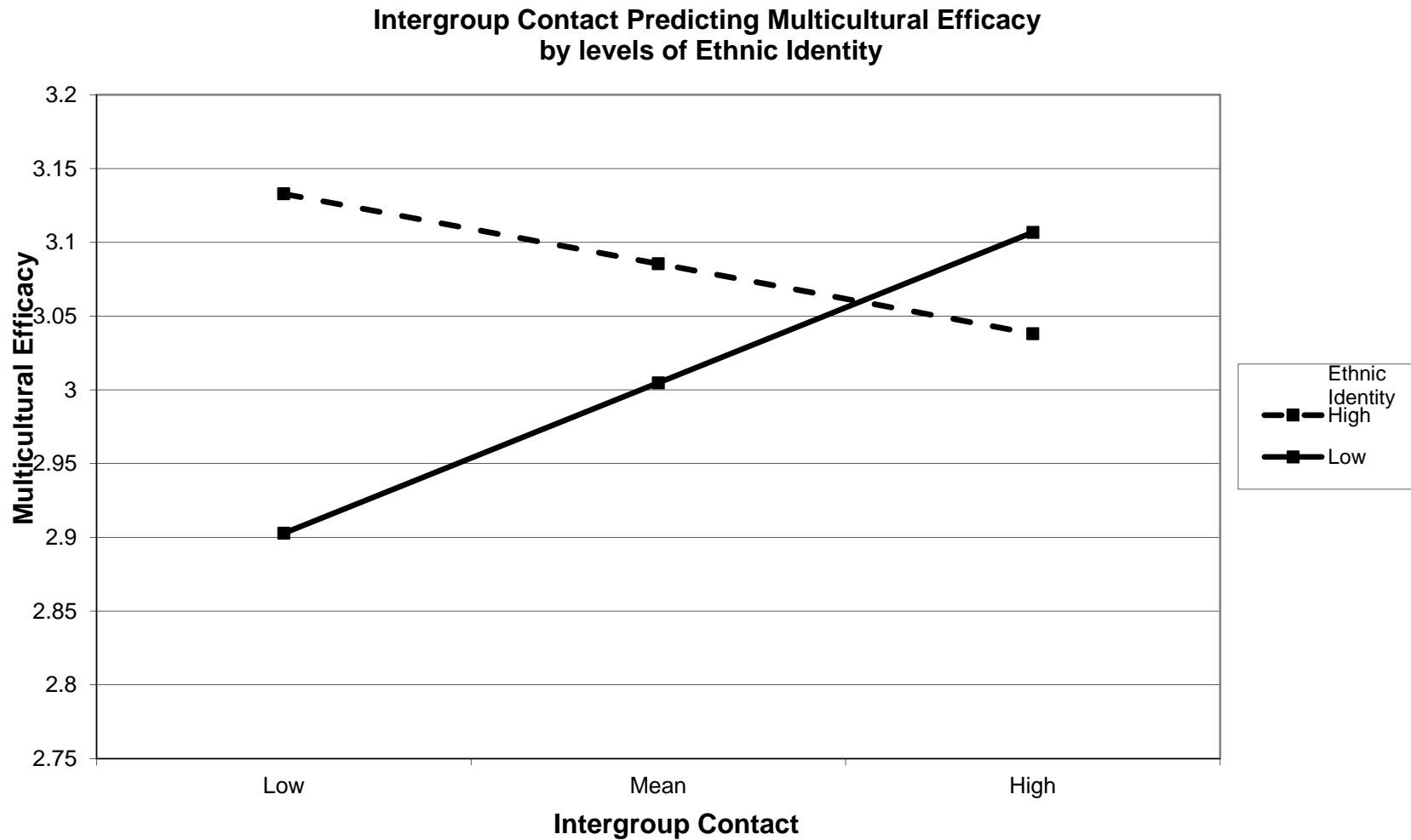
*$p < .05$. **$p < .01$. ***$p < .001$.

Table 3

Summary of Hierarchical Regression Analysis for Variables Predicting <u>Teacher Multicultural Attitudes</u> (N = 241)

Variable	Step 1		Step 2		Step 3	
	B	*SE*	*B*	*SE*	*B*	*SE*
Gender	-0.10	0.08	**-0.16***	0.07	**-0.18***	0.07
Age	0.13	0.10	0.10	0.09	0.09	0.09
Program Status	0.04	0.09	0.09	0.08	0.12	0.08
Ethnic Identity			0.04	0.03	0.03	0.03
Race			0.12	0.07	**0.16***	0.08
Intergroup Contact			-0.01	0.06	0.00	0.07
Diversity Disposition			**0.15****	0.05	**0.20*****	0.06
Diversity Courses Taken			**0.27*****	0.07	**0.32*****	0.08
MCC			**0.20*****	0.04	**0.15****	0.05
EI × IC					-0.14	0.08
EI × DD					0.00	0.06
EI × DC					0.09	0.09

EI × MCC			-0.03	0.06
Race × IC			-0.12	0.18
Race × DD			-0.13	0.13
Race × DC			-0.14	0.18
Race × MCC			0.20	0.12
R^2	0.02	0.32	0.36	
F for change in R^2	1.65	**14.40*****	1.73	

Note: Gender, Age, Program Status, Race, DC, and Race X DC were entered into the model as nominal variables.

*$p < .05$. **$p < .01$. ***$p < .001$.

**Intergroup Contact Predicting Multicultural Efficacy
by levels of Ethnic Identity**

Figure 1. Simple slopes of diversity courses taken predicting multicultural efficacy for 1 *SD* below the mean of ethnic identity and 1 *SD* above the

mean of ethnic identity.
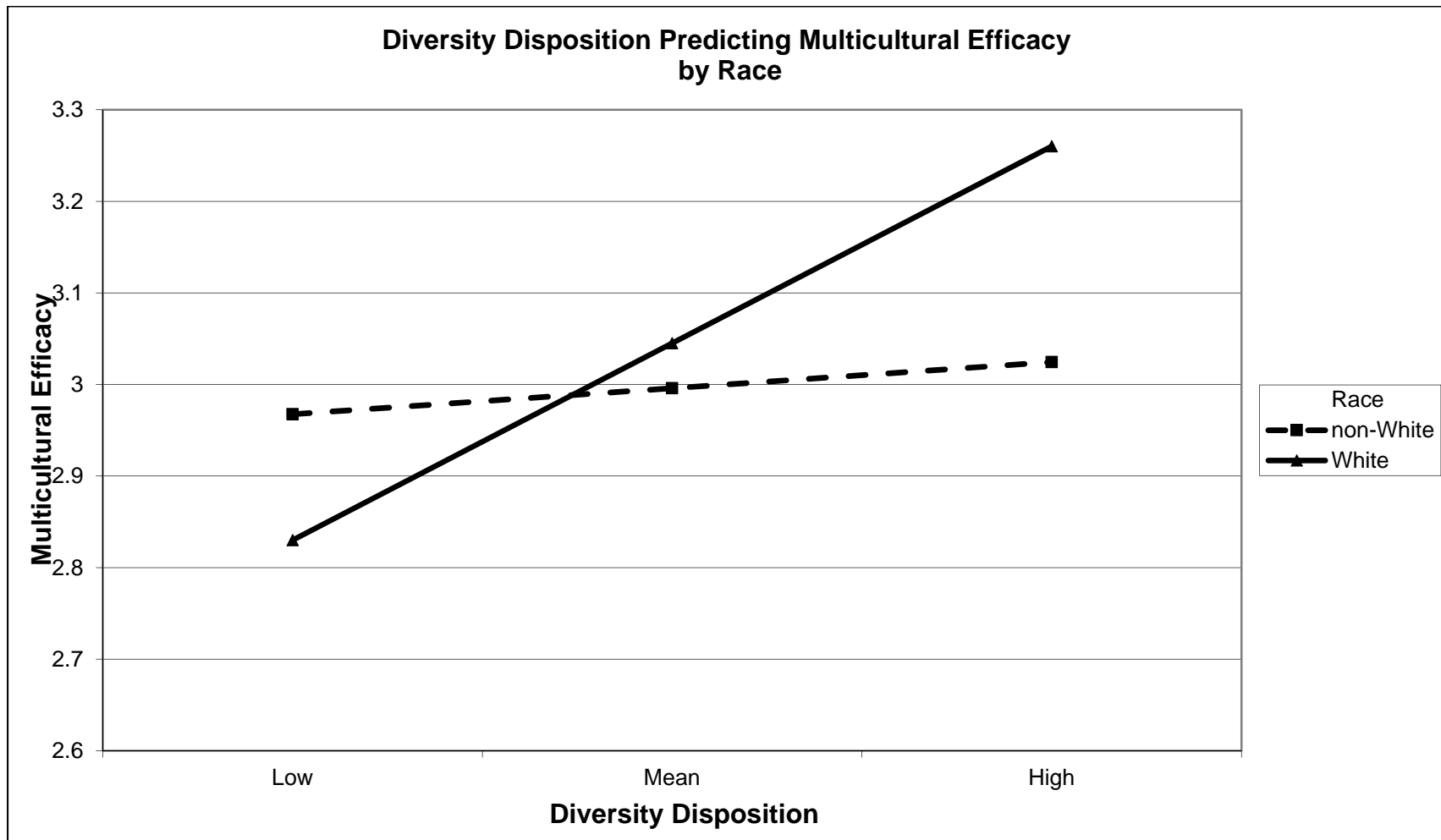
Figure 2. Simple slopes of diversity disposition predicting multicultural efficacy for White PSTs

Study 3

Intergroup Contact Effects on Pre-service Teachers: Ethnic Identity and Social Cognitive

Mediators of Multicultural Competence

Amir François & Joanna Lee Williams

Curry School of Education

University of Virginia

Author Note

Amir François & Joanna Lee Williams, Department of Educational Leadership, Foundations, and Policy, Curry School of Education, University of Virginia.

Amir François is now at Department of Mental Health, Bloomberg School of Public Health, Johns Hopkins University.

Correspondence concerning this article should be addressed to Amir François, Bloomberg School of Public Health, Johns Hopkins University, 615 N. Washington St., Baltimore, MD 21205. Contact: amir.francois@virginia.edu

Abstract

Research has shown that intergroup contact is a powerful tool in shaping cross-group attitudes, but the field has not explored whether this mechanism is applicable to determining educators' beliefs about their efficacy in multicultural classroom settings. The current study employs a measure variable path analysis to examine the relationships between pre-service teachers' experience of intergroup contact, levels of empathy and intergroup anxiety, and self-reported multicultural efficacy. Path analyses confirmed a direct association between intergroup contact and efficacy, and an indirect association mediated by empathy; however, anxiety was not significantly related to multicultural efficacy in the full model. In addition, associations between key constructs varied as a function of ethnic identity. Theoretical implications of the findings are discussed and recommendations for teacher educational programs are given.

Keywords: intergroup relations, intergroup contact, ethnic identity, diversity, empathy, intergroup anxiety, structural equation modeling

Study 3: Intergroup Contact Effects on Pre-service Teachers: Ethnic Identity and Social

Cognitive Mediators of Multicultural Competence

Ethnically, racially, and culturally mixed environments are no longer future societal

concerns, and individual success may be contingent upon one's ability to navigate diverse

settings. Educational contexts not only reflect these changing population characteristics, but also

provide an opportunity to prepare youth for a multicultural world (Banks, 2004). Adults within

the schools (e.g., teachers, administrators, etc.) play a major role in establishing safe and

accepting environments for students to understand, interact, and cooperate with peers from

diverse backgrounds (Dessel, 2010; Cruz & Patterson, 2005), so it is imperative that they have

experiences and training to prepare them for this role. Intergroup contact has been shown to be

powerful tool in explaining how experiences can shape the cross-group attitudes and behaviors

of individuals (Pettigrew & Tropp, 2011). A recent and exhaustive meta-analysis of intergroup

contact research has verified theoretical assertions that cross-group experiences can influence the

intrapersonal processes leading to more positive intergroup attitudes and inclusive behaviors

(Pettigrew & Tropp, 2006; 2011). More research is needed, however, in understanding how the

quality and quantity of intergroup interactions ultimately impact the development of

multicultural competence, or the knowledge, attitudes, skills, and behaviors that result in

effective outcomes with others from different backgrounds (Bennett, 1990; McGeehan, 1982).

Furthermore, given their potential impact on children's views about diversity, there is a critical

need to explore the role of intergroup contact among future educators.

The success of intergroup interactions not only depends upon the contact features, but

individual psychological characteristics also determine intergroup competence outcomes. The

literature has identified social-cognitive processes (i.e., lack of empathy and intergroup anxiety)

as barriers that need to be overcome for individuals to truly benefit from participation in optimal contact experiences (Pettigrew & Tropp, 2011; Voci & Hewstone, 2003; Stephan & Stephan, 1985). The sociocultural lens that is developed and maintained through group identity, practices, and experiences, can augment how pre-service teachers' view societal interactions and their future competence with diverse students (Helms, 1990; Hollins & Guzman, 2005; Sleeter, 2008). Depending on one's racial and ethnic group identification, group salience can vary across intergroup encounters, either highlighting cross-group differences or obscuring the significance of group identification (Page-Gould, Mendoza-Denton, & Tropp, 2008). Understanding the extent to which these social constructs and processes mediate the relationship between contact and competence can provide guidance in developing strategies to promote positive intergroup behaviors. The current study uses path analysis to examine the relationship between aspects of contact, social-cognitive mediators, and ethnic identity in a sample of pre-service teachers to better understand how intergroup contact influences future teacher multicultural competence.

Literature Review

Shaping Behaviors through Intergroup Experiences

The study of intergroup relations has long been concerned with the role that schools play in the promotion of positive cross-group behaviors (Tropp & Prenevost, 2008). Psychological researchers have sought to leverage the principles of intergroup contact theory to lessen prejudice, reduce conflicts, and improve intergroup relations (Pettigrew & Tropp, 2011). Allport's (1954) contact hypothesis has been the foundation of understanding intergroup interaction, and results from a recent meta-analysis that includes studies spanning the past 60 years have shown that contact typically reduces intergroup prejudice (Pettigrew & Tropp, 2006, 2011). Even with this overwhelming evidence concerning the impact of intergroup contact, few

studies have examined its role in influencing self-perceptions of multicultural competence (Schofield, 1995; *secondary-transfer effects*: Tausch et al., 2010), and have mostly focused on attitudinal outcomes to measure the effects of contact in improving intergroup relations (Hodson & Hewstone, 2013). Studying constructs that better correlate with actual intergroup behaviors, rather than just generalizing positive out-group attitudes (Tausch et al., 2010) may lead to more accurate identification of factors in educational settings that can be changed or modified to promote positive outcomes.

Teacher preparation programs are integral in the development of multicultural competence in future educators, but assuring the benefits of such training are actualized in schools and classrooms after graduates are credentialed is not guaranteed (Ball & Tyson, 2011). The ability to effectively execute appropriate multicultural practices within a classroom could rely more upon a teacher's sense of efficacy in such practices than on general attitudes about diverse groups (Siwatu et al., 2009). Teacher self-efficacy beliefs can reflect a teacher's belief in her or his ability to accomplish teaching-specific tasks in a classroom environment (Tschannen-Moran, Woolfolk Hoy, and Hoy, 1998). Siwatu (2007) used this concept in conjunction with Bandura's (1997) self-efficacy work to develop a framework regarding teachers' beliefs about their own abilities in culturally diverse settings. These culturally responsive teaching self-efficacy beliefs (i.e., "multicultural efficacy") have been argued to be more predictive of teachers' perceived facility with diverse students than intergroup attitudes (François & Williams, 2014; Siwatu et al., 2009; Sleeter & Owuor, 2012); thus, in the present study we examine the efficacy dimension of multicultural competence to assess how our predictors relate to future competence beliefs.

Conditions of Effective Contact

Quality & Quantity. Despite the resounding evidence that intergroup contact results in more positive intergroup attitudes, the literature reports mixed findings and to a larger degree small effect sizes (Pettigrew & Tropp, 2008, 2011). This variability may be attributed to the fact that all contact experiences do not share the same conditions and features. Starting with Allport, intergroup contact researchers have proposed and confirmed circumstances that boost the effectiveness under which successful contact occurs. Allport's four conditions: equal status, sharing common goals, intergroup cooperation, and institutional support (Allport, 1954), comprise what the literature views as high quality contact situations (Pettigrew & Tropp, 2011). Sustained and frequent instances of intergroup contact have also been shown to increase the effectiveness of intergroup contact experiences, as engaging in short, one-time experiences have little opportunity to challenge deeply held attitudes and offer up enough chances to disprove negative stereotypes (Brown, Maras, Masser, Vivian, & Hewstone, 2001). The literature has also that shown that quantity and quality of contact might not be independent actors, but rather influence each other's relationship with positive intergroup outcomes. Perceptions of high-quality contact are consistently related to more reported contact encounters, but not necessarily the reverse (Aberson & Hagg, 2007; Brown et al., 2001; Voci & Hewstone, 2003). Thus, the current study assesses both quantity and quality of contact, as well as the interaction between them.

Barriers to Intergroup Relations

Intergroup anxiety. Contact quality and quantity might determine when intergroup contact will result in positive intergroup outcomes, but this study is also concerned with *how* these features are related to future intergroup competence beliefs. Research has implicated affective processes (e.g., empathy) as more engaged than cognitive processes (e.g., out-group

knowledge) in contributing to positive intergroup outcomes (Pettigrew & Tropp, 2008). One such mediating route concerns the ways that people process social information about out-group members. Stephan and Stephan (1985) were among the first to draw attention to the role of threat in intergroup contact and the corresponding arousal of anxiety, or feelings of worry and doubt that the interaction will go poorly (Hewstone et al., 2002; Stephan & Stephan, 1985, 2000). These feelings usually arise when there has been little prior contact with the out-group and people are unsure of how to behave, increasing negative expectations of rejection or discrimination (Stephan & Stephan, 1985; Turner et al., 2007). It is thought to lead to contact avoidance and a narrowed focus of attention, which can lead to shallow, expectancy-confirming processing, resulting in an adherence to stereotypes when evaluating a member of the out-group (Turner et al., 2007). Research focused on this mechanism has demonstrated repeatedly that intergroup contact, and the dimensions that comprise successful interactions (i.e., quantity and quality), typically reduces intergroup threat and anxiety (Hewstone et al., 2002). With reduced feelings of anxiety, perceptions of out-group members can become more accurate, less polarized, and more favorable (Hewstone et al., 2002; Turner, Hewstone, & Voci, 2007).

Empathy. Empathy has also been implicated in mediating the pathway between intergroup contact and positive attitudes towards the out-group (Finlay & Stephan, 2000). Empathy, in the intergroup relations literature, has both a cognitive element that involves perspective-taking skills and mental awareness, and an affective aspect that involves forming an emotional connection to the well-being of out-group members (Finlay & Stephan, 2000). Although empathy is developed early in human beings, individuals do not direct empathy toward all people equally; instead, individuals often show more empathetical thoughts and feelings toward in-group than out-group members (Masten, Gillen-O'Neel, & Brown, 2010). Ignorance,

dislike, and prejudice towards other groups also complicates the distribution of empathy, as people make little or no attempt to understand others they are prejudiced toward (Pettigrew & Tropp, 2008). Yet, domain-general empathy has been tied to increased ethnic out-group liking and avenues involving this moderator should be considered when promoting positive intergroup relations (Nesdale, Griffiths et al., 2005). Intergroup contact, and especially close, cross-group friendship, may enable one to take the perspective of out-group members and empathize with their concerns (Masten et al., 2010; Pettigrew & Tropp, 2008; Stephan & Finlay, 1999). Empathy has been proposed to be a direct mediator of contact and intergroup attitudes (Batson et al., 1997; Pettigrew & Tropp, 2011) as well as a mediator of the connection between anxiety and attitudes (Aberson & Hagg, 2007). This study tests the former relationship as little research has looked at the relationship between empathy, contact, and intergroup behavioral outcomes like multicultural efficacy. Reformulations of Allport's model have argued that empathy and anxiety reduction are resultants of contact, but also that these constructs occur independently and simultaneously thus requiring separate explanatory pathways (Kenworthy et al., 2005).

Sociocultural Salience

Group distinctions can comprise more than just in-group bias, or the tendency to view your own membership group and members more favorably than out-group members (Hewstone, Rubin, & Willis, 2002). Other corollaries of belonging to certain groups also entail forming a social identity of what it means to belong to that group (Social Identity Theory; Tajfel & Turner, 1986). An individual's racial or ethnic group membership informs their ethnic identity, a dimension of social identity that is determined by one's ethnicity and incorporates associations between norms, behaviors, and values of that specific group (Phinney, 1992). Importantly, ethnic identity helps to create a foundation for individuals, in this case pre-service teachers, that

dictates how they view cultural difference and ultimately respond to these distinctions in the classroom (Helms, 1990; Sleeter, 2008; Sleeter & Owuor, 2012). Ethnic and racial identity can be very important to an individual, thus, stressing or deemphasizing these group identities, no matter how admirable the intentions, can have negative consequences and can undermine the effectiveness of intergroup contact (Kenworthy, Turner, Hewstone, & Voci, 2005). Research has shown that regard for how the out-group views your group can get in the way of actualizing positive intergroup outcomes that should be accounted for within the study of intergroup interaction (Hurd, Sellers, Cogburn, Butler-Barnes, & Zimmerman, 2013; Vorauer, 2013).

An enduring feature of intergroup contact studies is to measure intergroup contact experiences with a specific reference group primer (e.g., "how often do you interact with ethnic minorities," "how often do you have contact with African immigrants," etc.). The current study uses a relativistic approach to measuring intergroup contact experiences by not focusing on what ethnic group subset the participant is interacting with, but rather only that the interactions occur between members that they perceive as differing from their own ethnic and/or racial background. This relative intergroup contact measure enables a broad analysis of intergroup contact and tests more generalized results across ethnic groups. This approach also allows group-invariant inferences to be drawn from our sample (after accounting for the ethnic diversity represented within the sample). Measuring intergroup contact in this manner accounts for a major critique of the research literature, that majority group members enjoy most of the benefit from intergroup interactions, when all individuals in a setting need to gain the same cross-cultural skills, including ethnic minority members (Dixon, Durrheim, & Tredoux, 2005; Tropp & Pettigrew, 2005b; Vorauer, 2013).

Present Study

The current study proposes that the relationship between intergroup contact and its dimensions (i.e., quality and quantity) and intergroup competence outcomes (i.e., multicultural efficacy) is partially mediated by social-cognitive constructs, intergroup anxiety and empathy, which have been identified as possible barriers to engaging in effective cross-group encounters. The study also argues that the strength of the direct and indirect pathways between intergroup contact and multicultural efficacy are attenuated by the sociocultural lens through which a pre-service teacher views the world, as evidenced by their ethnic identity. I posit several hypotheses describing the relations of the constructs within the model (Figure 1, Appendix D).

Hypothesis 1: Intergroup contact will be positively related to multicultural efficacy.

Hypothesis 2: Empathy and anxiety will partially mediate the relationship between intergroup contact and multicultural efficacy.

Hypothesis 2a: Intergroup contact is positively related to empathy.

Hypothesis 2b: Intergroup contact is negatively related to anxiety.

Hypothesis 3: Increased empathy is related to higher multicultural efficacy.

Hypothesis 4: Reduced anxiety is related to higher multicultural efficacy.

Hypothesis 5: Ethnic identity significantly moderates the relationship between intergroup contact and both mediators and the multicultural efficacy.

Methods

This study uses data from a larger, ongoing data collection effort made by a school of education to conduct prospective studies of the teacher education program and its participants. The present study draws from the program entry and exit surveys as well as an additional survey designed to assess pre-service teachers' (PSTs') attitudes and beliefs about diversity. The survey was made available online during the 2010-2011 academic year, and all students in the five-year

combined Bachelor of Arts/Master of Teaching (BA/MT) and two-year post-graduate Master of

Teaching (PGMT) programs were eligible to participate.

Participants

Participants were 241 PSTs at a state university in the South Atlantic region of the United

States. The sample spanned in age from twenty years and younger to thirty years and older with

most participants in the 21 – 23 year age range. A majority (80.2%) were enrolled in the BA/MT,

with the remaining enrolled in the PGMT program. The sample was predominantly female

(83.7%), upper-middle/upper class (79.2%, using mother's education as a proxy), and

predominantly White (82.2%), which is representative of students enrolled in MT programs

nationwide (Aud et al., 2013). Non-white students included individuals who reported Asian

(7.5%), Black/African-American (5.8%), Hispanic (1.2%), and American Indian/Pacific Islander

(0.8%) backgrounds.

Measures

Race. Racial group membership status was determined in the current study using self-

report measures by the individual participant. Due to the majority of our sample (82%) selecting

"White" as their racial/ethnic group, we collapsed this measure into a dummy-coded variable

called Non-White, with "1" indicating ethnic minority status, and "0" indicating White.

Intergroup contact. Intergroup contact experiences were measured along two

dimensions in the current study, quantity and quality.

Quantity. Participants responded to items adapted from Van Dick and colleagues'

measure of contact quantity (Van Dick et al., 2004). PSTs were asked to report whether they had

personally had contact with members of other ethnic groups (other than their own) during past

high school experience and current teacher education program tenure in the following areas:

school experiences (e.g., classrooms, extracurriculars, etc.), neighborhood, among close friends,

and among their circle of acquaintances. Answer choices ranged from 1 = "Never – No contact at

all" to 6 = "All the time – Multiple instances of contact."

Quality. Participants responded to items adapted from Islam and Hewstones' measure of

contact quality (Islam & Hewstone, 1993). PSTs were asked to reflect on their most common

contact with members of other ethnic groups (other than their own) during past high school

experience and current teacher education program tenure and to rate those experiences along five

specific quality features: voluntary or involuntary, superficial or intimate, experienced as

pleasant, perceived as equal, and competitive or cooperative. PSTs marked on a 7-item Likert

scale that assessed the continuum between choices.

Interaction. Quality and quantity scores were multiplied together to obtain a single score

that reflected the frequency of positive contact. Brown et al. (2001) developed this technique to

simultaneously account for the interrelation between both aspects of contact (i.e., quality and

quantity) due to Allport's assertion that an optimal combination of the two is need for effective

contact experiences (Allport, 1954).

Social-cognitive mediators.

Intergroup anxiety. To measure intergroup anxiety, participants were asked, "If you were

the only member of your ethnic group and you were interacting with complete strangers from

another ethnic group (e.g., talking with them, working on a project with them, mixing socially),

how would you feel compared with occasions when you are interacting with complete strangers

from your own ethnic group?" They then indicated the extent to which they would feel anxious,

happy (reverse scored), awkward, self-conscious, confident (reverse scored), defensive, relaxed

(reverse scored), and uncertain. Scores range from 0 – "not at all" to 4 – "very". These items

were adapted from the Stephan and Stephan (1985) scale, with higher scores reflecting greater

anxiety (Turner, Hewstone, Voci, & Vonofakou, 2008; Stephan & Stephan, 1985).

Ethnocultural Empathy. Empathy, or the ability to relate to people from different ethnic

backgrounds, was assessed using the Scale of Ethnocultural Empathy (Wang, Davidson,

Yakushko, Savoy, Tan, & Bleier, 2003). The empathic perspective taking (7 items) subscale was

used, which specifically indicates an effort to understand the experiences and emotions of people

from different racial and ethnic backgrounds by trying to take their perspective in viewing the

world. Sample items include, "It is easy for me to understand what it would feel like to be a

person of another racial or ethnic background other than my own."

Ethnic identity. We used Phinney's Revised Multigroup Ethnic Identity Measure

(MEIM-R; Phinney & Ong, 2007) to measure ethnic identity in the current study. The MEIM-R

is a revised version of the original Multigroup Ethnic Identity Measure (MEIM; Phinney, 1992).

It consists of six items designed to assess an individual's level of ethnic group exploration (e.g.,

"I have often talked to other people in order to learn more about my ethnic group), and level of

commitment, or sense of belonging, to their ethnic group (e.g., "I feel a strong attachment

towards my own ethnic group). Items are rated on a four-point scale from "strongly disagree" to

"strongly agree", with higher scores indicating a higher level of ethnic group identification.

Based on research with diverse college- and high school-age samples, the scale has demonstrated

good reliability, with a Cronbach's alpha of .81 for all six items (Phinney & Ong, 2007). The

mean of all items was used in the present study as an indicator of overall ethnic identity.

Multicultural efficacy. Participants completed 20 items from the efficacy subscale of the

Multicultural Efficacy Scale (MES; Guyton & Wesche, 2005), which taps into self-beliefs about

ones' abilities to teach diverse students. In response to each action item (e.g., "I can develop

instructional methods that dispel myths about diverse groups", "I can help students view history

and current events from a diverse perspective"), respondents rated their ability on a four-point

scale from 1 ("I do not believe I could do this very well") to 4 ("I am quite confident that this

would be easy for me"). The mean of all 20 items was used in the present study as an indicator of

multicultural teaching self-efficacy. The scale has demonstrated good reliability, with a

Cronbach's alpha of 0.93.

Analytic Plan

       Path analysis. With the aim of analyzing the relations between the constructs, we

conducted a path analysis. The tested models considered the relations between intergroup

contact, as the predictor, and multicultural efficacy, as criterion or outcome variable. This

relation is studied as a direct effect, and as an indirect effect mediated by intergroup anxiety and

empathy through their own distinct pathways. Due to the potential influence of racial group

membership we first compared White and non-White PST sample means to determine if there

were significant differences between them. More than half the study variables manifested group

differences, yet due to the sample number we could not test separate multigroup models by race.

We entered race as a covariate to incorporate this variable into our analyses. Lastly, to test

whether ethnic identity moderated the pathways between intergroup contact and its proposed

relations (i.e., mediators: empathy and intergroup anxiety, and the outcome variable:

multicultural efficacy), we performed multi-group comparisons. Participants were split at the

median ethnic identity score to account for the relative distribution of ethnic identification in the

sample and was simultaneously tested for participants with low vs. high ethnic identification.

<div align="center">**Results**</div>

Preliminary Analyses

Table 1 provides the means, standard deviations, and zero-order bivariate correlations of

the variables used in the current analysis. The frequency ($M = 3.71$) and ethnic salience ($M =$

2.76) of current intergroup contact experiences were moderate compared to the scale of the

measures. Intergroup contact quality ($M = 5.67$) was relatively high. Ethnocultural empathy ($M =$

3.75) and intergroup anxiety ($M = 2.39$) were moderate as well. Lastly the outcome measure,

multicultural efficacy, was moderately high ($M = 3.06$) indicating that the sample of preservice

teachers in general felt personal felt they could handle multicultural issues in the classroom.

T-tests revealed that intergroup anxiety scores for non-White participants were

significantly different ($M_{NW} = 2.44$; $M_W = 2.38$; t = 4.287, p = .039). T-tests for empathy showed

that differences between participants with high and low ethnic identity ($M_{high} = 3.90$; $M_{low} =$

3.59; t = 5.03, p = .026) were also significant. Due to these differences, we controlled for race in

all subsequent analyses and conducted a multigroup analyses by ethnic identity to ascertain the

specific influence on the model.

Path Analysis

To test the hypothesized relationships between the constructs of interest we constructed

multiple Measured Variable Path Analysis (MVPA) models, culminating in a theoretically

specified proposed model. Each model's fit to the data was evaluated against the following

criteria: a chi-square value producing $p > .05$, a comparative fit index (*CFI*) value of .95 or

above, root mean square error of approximation (*RMSEA*) of .06 or below, and a standardized

root mean square residual (*SRMR*) of .08 or below (Hu & Bentler, 1999). We also examined a

90% confidence interval (CI) around the RMSEA.

Direct effects. The current study models intergroup contact as the interaction between

quantity and quality, as the literature has postulated high quality, along with high frequency

cross-group interaction is required to produce positive intergroup outcomes (Brown et al., 2001; Voci & Hewstone, 2003). We observed a slight positive skew across the possible values for the variable, confirming that this conceptualization is normally distributed. We next split the sample by high and low contact quantity and viewed quality distributions in the two groups. For PSTs with low contact quantity, the distribution was normally distributed, in contrast the high contact quantity group's distribution was heavily skewed with more values for quality at the higher end of the scale. We also created 2×2 dimensional groups (high quality/high quantity [H/H], high quality/low quantity, low quality/high quantity, low quality/low quantity) and found that the majority of PSTs fell into the hypothesized groups (H/H: n = 101; L/L: n = 74); those groups that make less theoretical sense still has participants within, but these reflected significantly less PSTs (H/L: n = 46; L/H: n = 55). This discrepancy gives credence to our thinking that high quality and high quantity contact, and low quality and low quantity contact occur in tandem.

To further clarify the interaction term between quality and quantity of contact, we used a procedure suggested by the literature (Aberson & Hagg, 2007) that examines the correlations of contact quality and the outcome variable (multicultural efficacy) the high and low contact quantity groups. For low contact quantity (r(131) = .22, p = .01), better quality was associated with a positive increase in efficacy. The association between quality and efficacy was non-significant for the high contact quantity group (r(147) = .15, p = .07). Comparing the correlations (z = 0.6, p = 0.55), we found that there was not a significant difference between the low and high contact quantity groups. A positive association between contact quality and efficacy among pre-service teachers who engage in less intergroup contact run counter to the hypothesis that more frequent and higher quality contact is needed to increase PST multicultural efficacy. Upon examination of the means, the high contact quantity group (M = 5.97, SD = 0.87) reported

significantly higher quality contact than the low quantity group (M = 5.31, SD = 1.09), (t(278) =

-5.5, p <.001). The weak relationship between contact quality and efficacy in the high contact

quantity group could be due to that group reporting higher levels of quality than the low quantity

group.

The initial model revealed a main effect of the intergroup contact quantity and quality

interaction on self-perceived multicultural efficacy (β = .194, p = .002), yet the proportion of

variance explained was low (4.1%). The tested model fit the data well: $\chi^2(1)$ = 0.038, p = .85;

CFI = 1.00; RMSEA = .000 [.000, 0.091]; SRMR = .004. We next tested a main effects model

with contact quantity and quality separately, with covariances between both contact constructs.

This model fit the data poorly: $\chi^2(2)$ = 66.990, p < .000; CFI = 0.00; RMSEA = .341 [.274, .414];

SRMR = .103. Lastly, we tested a main effects model with contact quantity and quality

separately and the interaction term, with covariances between all three constructs. This model

also fit the data poorly: $\chi^2(3)$ = 75.542, p < .000; CFI = 0.00; RMSEA = .294 [.239, .354];

SRMR = .086. Consequently, our proposed modeling of intergroup contact through its

interaction term (quantityXquality) was maintained.

Full model. We next tested the full model to represent the main hypothesis regarding the

relations between the constructs of interest (Figure 2, Appendix D). This model consisted of the

endogenous outcome variable (multicultural efficacy), endogenous mediators (empathy and

intergroup anxiety), and the lone exogenous variable (intergroup contact). In this model empathy

and intergroup anxiety were allowed to covary as both constructs are considered closely linked in

the intergroup literature (Pettigrew & Tropp, 2011). Direct paths were also tested from empathy,

intergroup anxiety, and intergroup contact to multicultural efficacy, and from intergroup contact

to empathy and anxiety. This model fit the data well: $\chi^2(1)$ = 0.058, p = .81; CFI = 1.00; RMSEA

= .000 [.000, .099]; SRMR = .004. The intergroup contact term (β = .118, p = .041) and empathy

(β = .359, p < .001) had direct effects on multicultural efficacy while intergroup anxiety did not.

The contact variable significantly predicted empathy (β = .180, p = .001) and intergroup anxiety

(β = -.598, p < .001) in the model, consistent with the hypotheses. There was also a significant

covariance between empathy and intergroup anxiety (β = -.339, p < .001). A model with no

covariance pathway between empathy and intergroup anxiety was also run to see if model fit

would improve without this parameter estimate. While the pathways imitated the previous

model, it did not fit the data well: $\chi^2(2)$ = 32.826, p = .000; CFI = 0.775; RMSEA = .235 [.168,

.309]; SRMR = .071.

      Mediation analysis. As can be seen in Figure 2, a mediation pathway can be implied

from the pattern of significance between the contact term, empathy, and multicultural efficacy.

This analysis was completed using three estimates from Mplus used to test for mediation and to

clarify effects. The total effect of the interaction term on multicultural efficacy, which represents

a relationship between the two, or a zero-order correlation, was significant (β = .188, p = .001).

The second estimate was the direct effect, or path weight of the predictor on the dependent

variable (β = .118, p = .032), this indicates a significant contribution of the intergroup contact

variable on multicultural efficacy. Lastly, we viewed the specific indirect effect of empathy in

the contact-multicultural efficacy pathway. Along with the first two, this last estimate (β = .065,

p = .008) indicated that empathy significantly partially mediated the pathway between contact

and multicultural efficacy.

      Multigroup analysis. To examine the influence of ethnic identity, a multigroup SEM

was performed for the full model. This model fit the data well: $\chi^2(2)$ = 0.357, p = .837; CFI =

1.00; RMSEA = .000 [.000, .097]; SRMR = .009. For the low ethnic identity subgroup,

intergroup contact ($\beta = .202$, $p = .013$) and empathy ($\beta = .238$, $p = .022$) had direct effects on multicultural efficacy. The proportion of variance explained for multicultural efficacy was smaller than the full group model (11.5%), as well as for empathy (6.7%) and intergroup anxiety (2.1%). For high ethnic identity participants, only empathy had a direct effect on multicultural efficacy ($\beta = .522$, $p < .001$). Contact was a significant predictor of both empathy ($\beta = .239$, $p = .005$) and intergroup anxiety ($\beta = -.603$, $p < .001$), but was unrelated to efficacy. This model explained a larger proportion of variance for all three endogenous variables in the model compared to the low ethnic identity model (multicultural efficacy: 22.6%; empathy: 22.9%; and intergroup anxiety: 12.1%).

Alternative models. The full model tested and discussed above is not the only proposed model that could be derived from the literature. Aberson and Hagg proposed a model where quantity and quality of intergroup contact were separate exogenous predictors in the model alongside the interaction of the two contact dimensions (2007). We tested two such models that incorporate this structure. The first was a complete model (Figure 3) with all possible paths between all constructs of interests, including covariances between all three contact constructs and between empathy and intergroup anxiety. This model fit the data poorly ($\chi^2(3) = 74.933$, $p < .001$; CFI = .521; RMSEA = .293 [.238, .352]; SRMR = .070). The second model did not include covariances between the intergroup contact variables and mediators. This model fit the data very poorly as well: $\chi^2(7) = 1235.540$, $p < .001$; CFI = .000; RMSEA = .793 [.756, .831]; SRMR = .638.

Discussion

The effect of intergroup contact on attitudes towards outgroup members is well established in the literature and continues to ring true decade after decade of research (Pettigrew

& Tropp, 2006, 2011), however little is known about whether these beneficial effects of positive

interaction experiences with diverse groups can influence the future behavior of individuals

above and beyond changing their affective perceptions. The main goal of this study was to

determine if the recognized relationship and mechanisms between intergroup contact and

intergroup attitudes hold for more competence and behaviorally-derived outcomes like self-

perceived multicultural efficacy. Using similarly constructed pathways and measurement

constructs as the prejudice reduction literature, the current study proposed a measured variable

path analysis to model the relationships between the interaction of contact quantity and quality,

social-cognitive mediators: empathy and intergroup anxiety, and multicultural efficacy as

reported by a preservice teacher sample. After controlling for race of the participant, intergroup

contact was a significant predictor of multicultural efficacy and was partially mediated through

the empathy pathway. Interestingly, this mediation was not present when accounting for ethnic

identity in our PST sample, but empathy's direct effect on multicultural efficacy was robust

against differences in individual sociocultural characteristics.

The remaining findings were mostly consistent with a priori hypotheses that high quality

and more frequent interaction with individuals from ethnic groups other than one's own was

significantly related to reports of higher multicultural efficacy (Aberson & Hagg, 2007; Brown et

al., 2001; Voci & Hewstone, 2003). Building upon intergroup attitudes and stereotyping

research, this study empirically confirms past findings that more positive and frequent intergroup

contact is associated with higher reported values of empathy and weaker feelings of anxiety

towards individuals from different ethnic and/or racial backgrounds (Pettigrew & Tropp, 2006;

Islam & Hewstone, 1993; Voci & Hewstone, 2003). These findings begin to form the

understanding of how intergroup contact experiences influence the development of more

behaviorally-based measures of intergroup relations, as multicultural efficacy attempts to capture.

Intergroup attitude research that has measured both empathy and anxiety as mediators of the association between contact and attitudinal outcomes has consistently found that both constructs play a role in explaining the association (Pettigrew & Tropp, 2011; Vezzali & Giovannini, 2012; Voci & Hewstone, 2003). However, this is the first study that has looked at intergroup contact and the empathy/anxiety pathways influencing a contextually-specific competency for pre-service teachers. Notably, this study found that empathy, but not intergroup anxiety, was related to multicultural efficacy in preservice teachers; specifically, higher levels of ethnocultural empathy predicted a higher sense of ability to teach in a diverse classroom setting. Confirming hypotheses, empathy partially mediated the relationship between intergroup contact and multicultural efficacy. Empathy also exhibited the strongest and strongest associations with multicultural efficacy throughout all iterations of the model tested. Also consistent with hypotheses, empathy was a significant predictor regardless of ethnic identity, meaning that as one's ability to understand and take the perspective of other group members increases, multicultural efficacy will also increase no matter the individual ascription of ethnicity. While more research is needed, this finding suggests teacher educators and programs should instill empathy and perspective-taking skills within the future teachers they are training regardless of race and ethnic identity (Matsko & Hammerness, 2014; Sleeter, 2001, 2008;).

The non-significant pathway between intergroup anxiety and multicultural efficacy did not support the original hypotheses. One possible explanation of this null finding concerns efficacy's behavioral component as a main reason that negative feelings (i.e., intergroup anxiety) might have less of an impact. Unlike attitudes, which have closer ties to affect, multicultural

efficacy measures how a future teacher believes they will respond to specific multicultural situations in the classroom (Guyton & Wesche, 2005) and therefore taps into a more skill-based and interactional domain. Anxiety usually works as a barrier to contact, keeping individuals from engaging in interactions and more importantly feeling and thinking certain ways about other groups (Hewstone, 2002; Plant & Devine, 2003) – not necessarily how you are or going to engage with them. Asking preservice teachers about their efficacy with these populations might engage a different pathway than anxiety, such as influencing empathy and in turn increasing or decreasing efficacy as some models have suggested (Abserson & Hagg, 2007).

The secondary focus of this paper was to investigate the role of sociocultural salience in the model of intergroup contact and multicultural efficacy, as awareness of one's own ethnic identification and/or awareness of the salience of group differences within interactions with diverse individuals have been acknowledged as possible factors that could influence the relation between intergroup contact and competence (Brown, Vivian, & Hewstone, 1999; Voci & Hewstone, 2003). The ethnic identity mutli-group analyses provided some insights into how the association between intergroup contact and multicultural efficacy can vary across individuals whose ethnic membership is greatly important or less important. Our findings suggest that among individuals who do not strongly relate to their ethnic group, intergroup contact and empathy are both positively related to efficacy, but contact was unrelated to empathy. This could be case, since these individuals might not think about group differences or seek out information diversity in general (Sleeter, 2008) and contact could have more of an effective influence on these "blank slate" persons. High ethnic identity participants in the study did not have a significant pathway from contact to efficacy, but contact had positive and negative relations with empathy and intergroup anxiety, respectively. One explanation for this pattern could be that

those individuals who are well aware of their ethnic identity and think of group differences more often might have either already experienced many intergroup contact experiences and have reached a ceiling, or may use these experiences to increase their skills and feelings towards other groups but do not equate this growth with being able to actually engage with other groups of people. This subgroup of preservice teachers might take a more realistic conception of their multicultural efficacy and might not inflate, or actually deflate their expectation about themselves (Sleeter & Owuor, 2012).

Most intergroup research, while strongly rooted in past literature, is primarily concerned with prejudice reduction, attitudinal change, and lowering the extent to which implicit bias and stereotypes are relied upon. The current study alters this singular, decades-long focus by using a self-reported measure of unambiguous future behaviors for a specified profession that has been shown to be more strongly tied to actual intergroup relations (Keengwe, 2010; Siwatu et al., 2009). Another methodological strength, is the specific setting in which the data were collected. The current study was concerned about teachers' abilities to teach ethnically diverse students, and collecting data in a teacher education program and asking very applicable questions to that population may facilitate more reliable and contextually relevant inferences from the data. More and more regularly, intergroup relational research is beginning to answer the call to step out of the laboratory and to generate findings that stand up to the socio-historical reality of real-world environments (Christ & Wagner, 2013; Dixon & Durrheim, 2003). The current study's focus on a teacher training environment, preservice teachers, and future educational implications satisfies this call to design and disseminate socially-relevant research to affect actual change in intergroup interactions.

Even with these strengths, the study is limited by the relatively homogenous sample of preservice teacher participants and geographical restriction of our data collection. The above findings may not be generalizable to other groups of preservice teachers and more research is needed to see how these mechanism might manifest themselves depending on key individual characteristics and environmental differences (i.e., urban setting, racial diversity, etc.). Also, while structural equation modeling does allow for the testing of holistic models that allow for the conceptualization of theoretically driven and complex interrelations between constructs of interests, the path model organization implies casual relationships. Our data were collected at one time in the school year and therefore causal inferences cannot be made, which severely limits that scope of our findings and recommendations. Lastly, this study took a step in the direction of assessing intergroup contact's influence on possible future behaviors. Our outcome measure, however novel, is not a behavioral or observed outcome and therefore is open to the same criticisms as other self-report scales. Future research should build upon these findings and use triangulation and more observational measures to actually examine whether intergroup contact is having the intended effect of promoting cultural competence in diverse classroom settings.

In light of these limitations, our study adds important and substantive findings to the literature regarding multicultural competence development and the role of intergroup interactions in educational settings. By far the biggest takeaway from this research is that higher quality and more frequent interactions with individuals from diverse ethnic and racial groups may not only increase one's empathy towards other who are from different groups, but these experiences can also instill more generalizable skills and perspectives that can ultimately influence one's future behaviors. These findings hold across racial and ethnic lines, but can be influenced by one's

commitment and ties to their own ethnic group. Teacher training educators and administrators

and educational stakeholders at all levels should view these findings as important to the

development of their future workforce and endeavor to incorporate contact experiences into

curricular and dogmatic decisions.

References

Aboud, F., Mendelson, M., & Purdy, K. (2003). Cross-race peer relations and friendship quality. International Journal of Behavioral Development, 27(2), 165-173.

Allport, G. W. (1954). The nature of prejudice. Basic books.

Aud, S., Wilkinson-Flicker, S., Kristapovich, P., Rathbun, A., Wang, X., & Zhang, J. (2013). The Condition of Education 2013. NCES 2013-037. *National Center for Education Statistics*.

Banks, J. A. (2006). *Race, culture, and education: The selected works of James A. Banks*. Taylor & Francis.

Bellmore, A. , Nishina, A., Witkow, M. R., Graham, S., & Juvonen, J. (2007). The Influence of Classroom Ethnic Composition on Same-and Other-ethnicity Peer Nominations in Middle School. Social Development, 16(4), 720-740.

Bellmore, A., Nishina, A., You, J. I., & Ma, T. L. (2012). School context protective factors against peer ethnic discrimination across the high school years. American journal of community psychology, 49(1-2), 98-111.

Benner, A. D., & Graham, S. (2012). The antecedents and consequences of racial/ethnic discrimination during adolescence: Does the source of discrimination matter?. Developmental psychology, 49(8), 1602.

Bigler, R. S., & Hughes, J. M. (2009). The nature and origins of children's racial attitudes. *The Routledge international companion to multicultural education*, 186-198.

Bigler, R. S., & Liben, L. S. (2006). A developmental intergroup theory of social stereotypes and prejudice. *Advances in child development and behavior*, *34*, 39-89.

Bronfenbrenner, U., & Morris, P. A. (2006). The bioecological model of human development.

Handbook of child psychology.

Cameron, L., Rutland, A., Hossain, R., & Petley, R. (2011). When and why does extended

contact work? The role of high quality direct contact and group norms in the development

of positive ethnic intergroup attitudes amongst children. *Group Processes & Intergroup*

Relations, *14*(2), 193-206.

Cazabon, M.T., Lambert, W.E., & Hall, G. (1993). Two-way bilingual education: A progress

report on the Amigos program (Research Rep. No.7). Santa Cruz, CA and Washington,

DC: National Center for Research on Cultural Diversity and Second Language Learning.

Chavous, T. (2005). An intergroup contact-theory framework for evaluating racial climate on

predominantly White college campuses. *American Journal of Community*

Psychology, *36*(3-4), 239-257.

Cicchelli, T., & Cho, S. J. (2007). Teacher Multicultural Attitudes Intern/Teaching Fellows in

New York City. *Education and urban society*, *39*(3), 370-381.

Crosnoe, R., Johnson, M. K., & Elder, G. H. (2004). Intergenerational bonding in school: The

behavioral and contextual correlates of student-teacher relationships. Sociology of

Education, 77(1), 60-81.

Davies, K., Tropp, L. R., Aron, A., Pettigrew, T. F., & Wright, S. C. (2011). Cross-Group

Friendships and Intergroup Attitudes A Meta-Analytic Review. *Personality and Social*

Psychology Review, *15*(4), 332-351.

Dessel, A. (2010). Prejudice in schools: Promotion of an inclusive culture and climate. Education

and Urban Society, 42(4), 407-429.

Dixon, J., Durrheim, K., & Tredoux, C. (2005). Beyond the optimal contact strategy: a reality

check for the contact hypothesis. *American Psychologist*, *60*(7), 697.

Engberg, M. E., Meader, E. W., & Hurtado, S. (2003). Developing a pluralistic orientation: A comparison of ethnic minority and White college students. Ann Arbor, 1001, 48109-1259.

Finlay, K. A., & Stephan, W. G. (2000). Improving Intergroup Relations: The Effects of Empathy on Racial Attitudes1. *Journal of Applied Social Psychology*, *30*(8), 1720-1737.

Grant, C., & Gibson, M. (2011). Diversity and teacher education: A historical perspective on research and policy. In A. F. Ball & C. A. Tyson (Eds.), *Studying diversity in teacher education*. Lanham, MD: Rowman & Littlefield.

Green, C. W., Adams, A. M., & Turner, C. W. (1988). Development and validation of the school interracial climate scale. *American Journal of Community Psychology*, *16*(2), 241-259.

Hallinan, M. T. (1982). Classroom racial composition and children's friendships.*Social Forces*, *61*(1), 56-72.

Hallinan, M. T., & Teixeira, R. A. (1987). Students' interracial friendships: Individual characteristics, structural effects, and racial differences. *American Journal of Education*, 563-583.

Hallinan, M. T., Kubitschek, W. N., & Liu, G. (2009). Student interracial interactions and perceptions of school as a community. *Social Psychology of Education*, *12*(1), 5-19.

Helms, J. E. (1990). *Black and White racial identity: Theory, research, and practice*. Greenwood Press.

Hewstone, M., Rubin, M., & Willis, H. (2002). Intergroup bias. *Annual review of psychology*, *53*(1), 575-604.

Jackson, M. F., Barth, J. M., Powell, N., & Lochman, J. E. (2006). Classroom contextual effects of race on children's peer nominations. *Child Development*,*77*(5), 1325-1337.

Juvonen, J., Nishina, A., & Graham, S. (2006). Ethnic diversity and perceptions of safety in

urban middle schools. *Psychological Science*, *17*(5), 393-400.

Karcher, M. J., & Fischer, K. W. (2004). A developmental sequence of skills in adolescents'

intergroup understanding. *Journal of applied developmental psychology*, *25*(3), 259-282.

Khmelkov, V. T., & Hallinan, M. T. (1999). Organizational effects on race relations in

schools. *Journal of social Issues*, *55*(4), 627-645.

Lambert, W. E., & Tucker, G. R. (1972). Bilingual education of children: The St. Lambert

experiment.

Margie, N. G., Killen, M., Sinno, S., & McGlothlin, H. (2005). Minority children's intergroup

attitudes about peer relationships. *British Journal of Developmental Psychology*, *23*(2),

251-270.

Mattison, E., & Aber, M. S. (2007). Closing the achievement gap: The association of racial

climate with achievement and behavioral outcomes.*American Journal of Community

Psychology*, *40*(1-2), 1-12.

McGlothlin, H., & Killen, M. (2006). Intergroup attitudes of European American children

attending ethnically homogeneous schools. *Child Development*, *77*(5), 1375-1386.

McPherson, J. M., & Smith-Lovin, L. (1987). Homophily in voluntary organizations: Status

distance and the composition of face-to-face groups.*American sociological review*, 370-

379.

Moody, J. (2001). Race, School Integration, and Friendship Segregation in America1. *American

Journal of Sociology*, *107*(3), 679-716.

Nesdale, D. (2008). Peer group rejection and children's intergroup prejudice.*Intergroup attitudes

and relations in childhood through adulthood*, 32-46.

Paluck, E. L. (2011). Peer pressure against prejudice: A high school field experiment examining

> social network change. *Journal of Experimental Social Psychology*, *47*(2), 350-358.

Patterson, M. M., & Bigler, R. S. (2006). Preschool children's attention to environmental

> messages about groups: Social categorization and the origins of intergroup bias. *Child

> development*, *77*(4), 847-860.

Pettigrew, T. F., & Tropp, L. R. (2011). *When groups meet: The dynamics of intergroup contact*.

> Psychology Press.

Phinney, J. S. (1992). The multigroup ethnic identity measure a new scale for use with diverse

> groups. *Journal of adolescent research*, *7*(2), 156-176.

Phinney, J. S., Jacoby, B., & Silva, C. (2007). Positive intergroup attitudes: The role of ethnic

> identity. *International Journal of Behavioral Development, 31(5),* 478-490.

Pianta, R., Howes, C., Burchinal, M., Bryant, D., Clifford, R., Early, D., & Barbarin, O. (2005).

> Features of pre-kindergarten programs, classrooms, and teachers: Do they predict

> observed classroom quality and child-teacher interactions?. *Applied developmental

> science*, *9*(3), 144-159.

Ponterotito, J. G., Baluch, S., Greig, T., & Rivera, L. (1998). Development and initial score

> validation of the teacher multicultural altitude survey. *Educational and Psychological

> Measurement*, *58*(6), 1002-1016.

Ream, R. K., & Rumberger, R. W. (2008). Student engagement, peer social capital, and school

> dropout among Mexican American and non-Latino white students. *Sociology of

> Education*, *81*(2), 109-139.

Rutland, A., Killen, M., & Abrams, D. (2010). A new social-cognitive developmental

perspective on prejudice the interplay between morality and group identity. *Perspectives on Psychological Science*, *5*(3), 279-291.

Hernandez Sheets, R. (2003). Competency vs. good intentions: Diversity ideologies and teacher potential. *International Journal of Qualitative Studies in Education*, *16*(1), 111-120.

Sleeter, C. (2008). An invitation to support diverse students through teacher education. *Journal of Teacher Education*, *59*(3), 212-219.

Sleeter, C. E., & Owuor, J. (2011). Research on the impact of teacher preparation to teach diverse students: The research we have and the research we need. *Action in Teacher Education*, *33*(5-6), 524-536.

Tables & Figures

Table 1

Bivariate Correlations and Means of Study Variables (N = 281)

Measure	PR	M	SD	1	2	3	4	5	6	7
1. Contact Quantity	1 to 6	3.71	1.17	-	0.37***	0.91***	0.15*	0.27***	-0.18**	0.19**
2. Contact Quality	1 to 7	5.67	1.03		-	0.70***	0.21**	-0.03	-0.25***	-0.07
3. Quantity × Quality	1 to 42	21.48	8.90			-	0.18**	0.18**	-0.25***	0.09
4. Multicultural Efficacy	0 to 4	3.06	0.45				-	0.33***	-0.18**	0.17**
5. Empathy	1 to 6	3.75	0.84					-	-0.33***	0.29***
6. Intergroup Anxiety	1 to 5	2.39	0.85						-	-0.02
7. Ethnic Identity	1 to 5	3.14	0.86							-

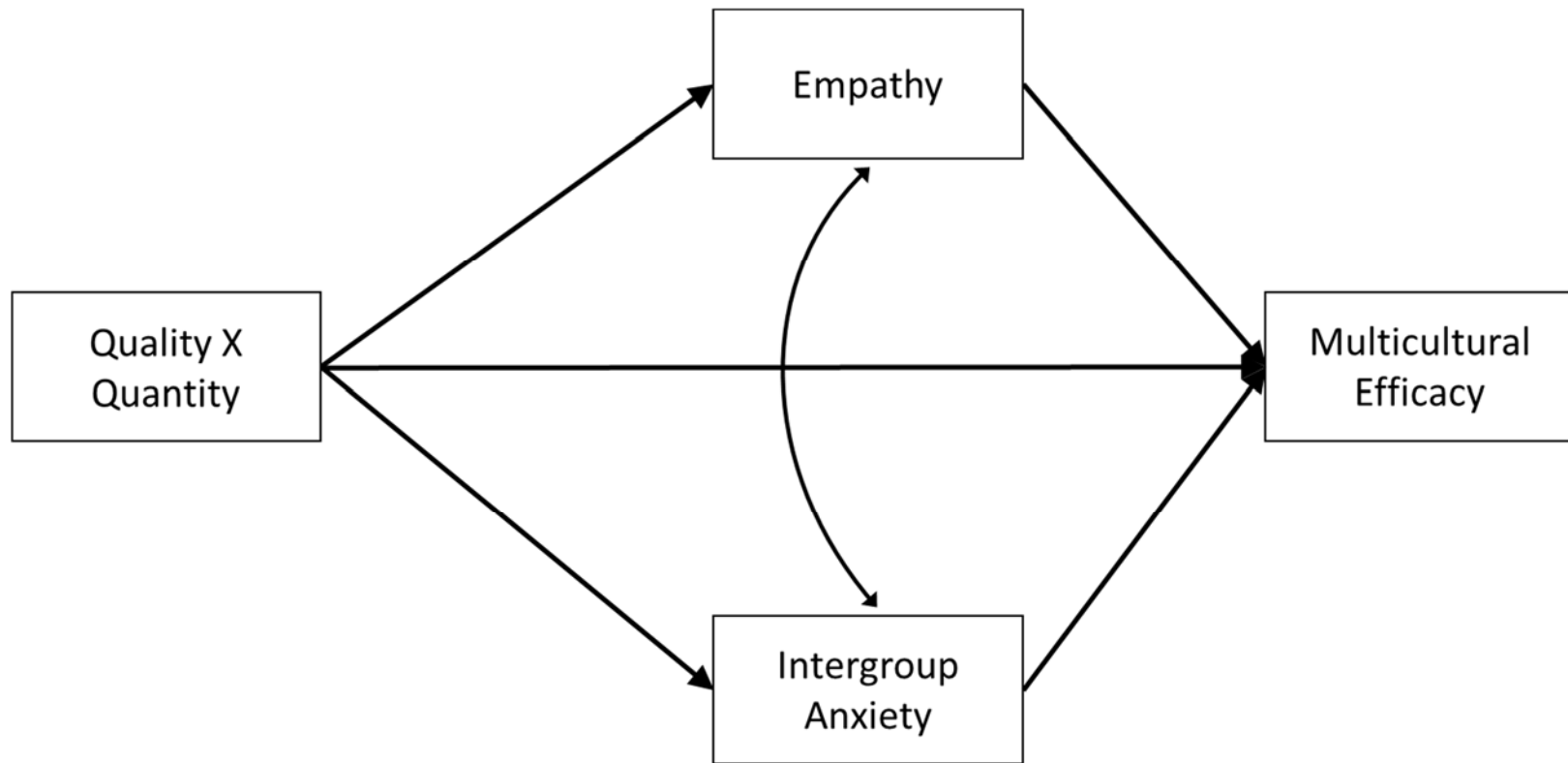Note: *$p < .05$. **$p < .01$. ***$p < .001$.
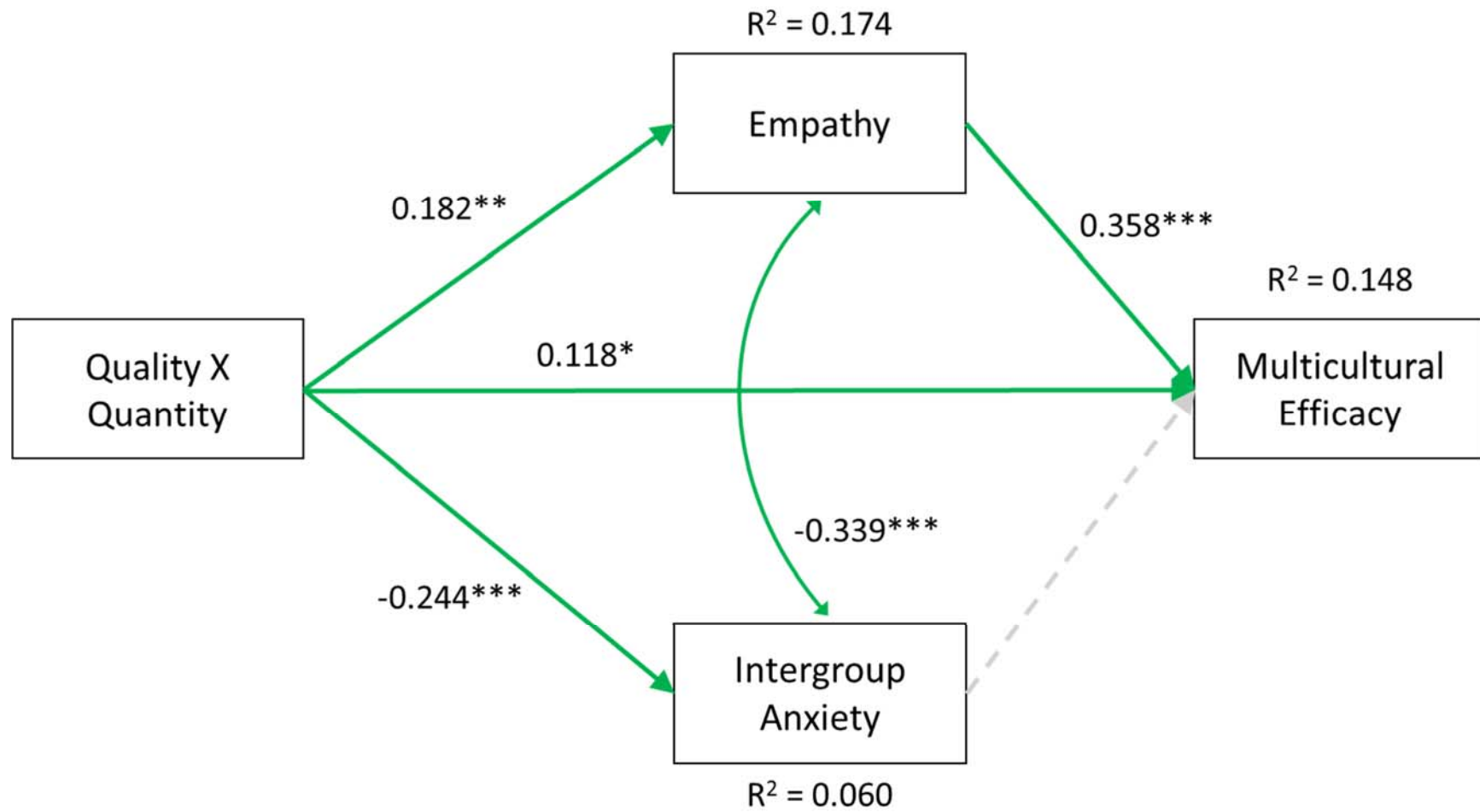
Figure 1. Proposed Mediation Model
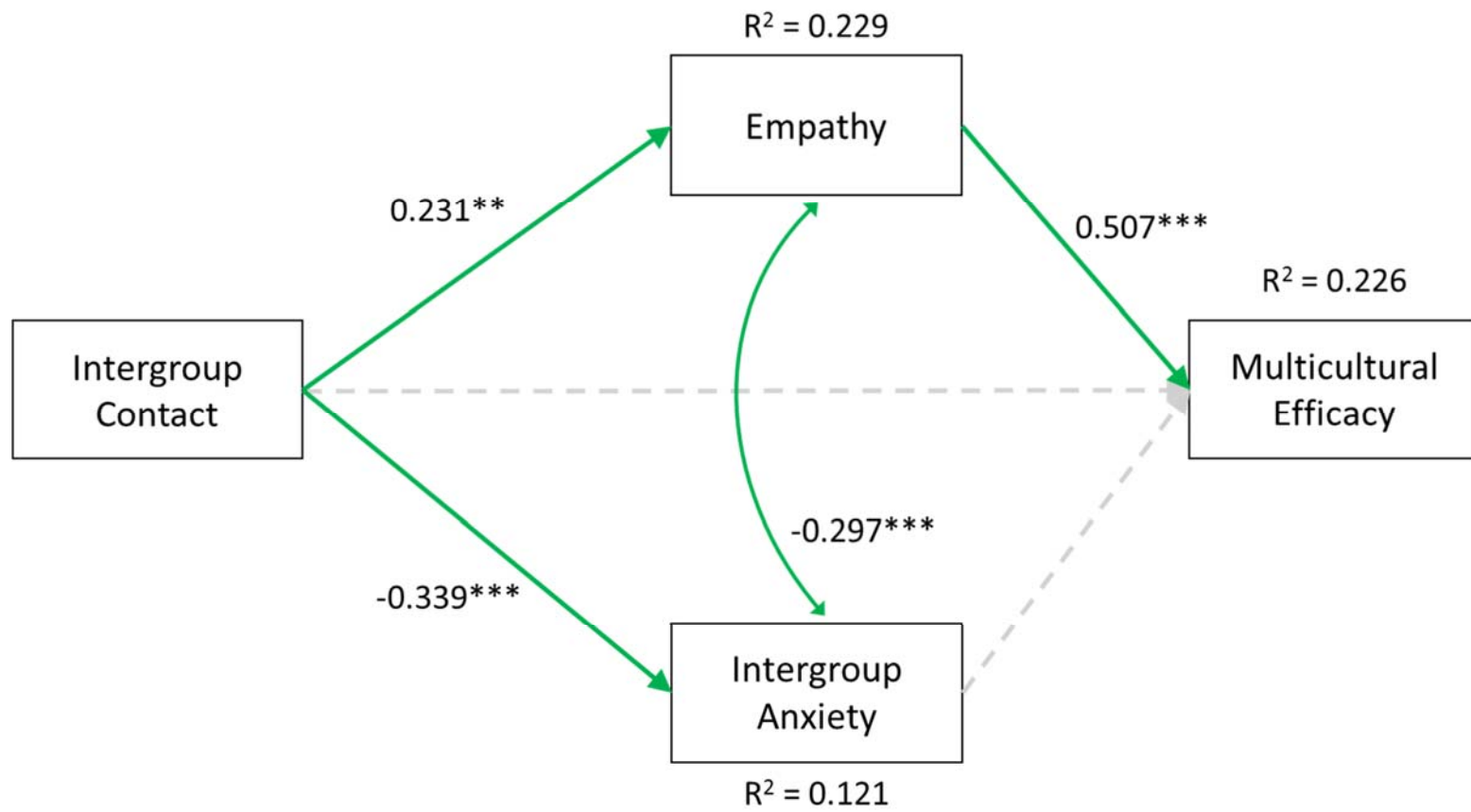
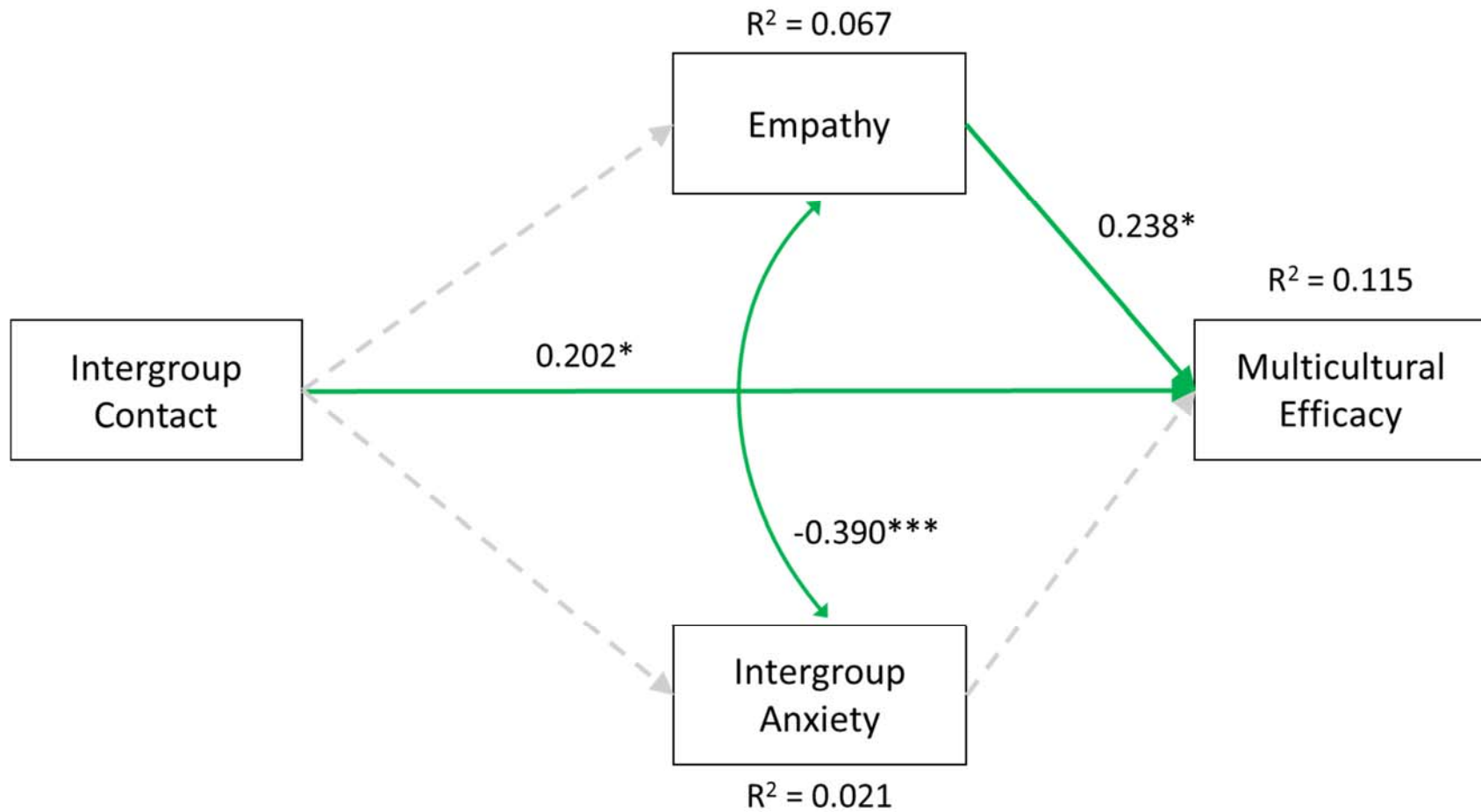*Figure 2.* Full Mediation Model

Figure 3. High Ethnic Identity Mediation Model

Figure 4. Low Ethnic Identity Mediation Model