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Positive Youth Development Among Latino/a Youth in a Service Learning Program

Christopher Fox Drescher

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POSITIVE YOUTH DEVELOPMENT AMONG LATINO/A YOUTH IN A SERVICE LEARNING PROGRAM

A Thesis
Presented in partial fulfillment of requirements
For the degree of Master of Arts
in the Department of Psychology
The University of Mississippi

by

CHRISTOPHER DRESCHER

December 201
Abstract

This study explored the potential of a service-learning program to cultivate positive developmental strengths among Latino/a youth participating in a school-based program in Los Angeles County. Youth (N=112) in grades 5-12, who were primarily from low SES backgrounds, participated in an environmental and humanitarian education program, the Jane Goodall Institute’s, Roots & Shoots (R&S) program. Three positive youth development (PYD) variables, including civic responsibility, ethnic identity, and connection to nature were assessed before and after participation. Challenges in program implementation and data collection resulted in a small subset of participants that completed measures at the pre and posttest (n = 22). Within this group, no changes from pre to posttest emerged, yet the analysis was underpowered due to the small sample. Within the larger data set, no gender or ethnic differences emerged. All three PYD variables were related. Connection to nature was positively associated with SES and negatively associated with age. Results and implications for future research are discussed, as are issues related to academic-community research collaborations.
DEDICATION

This thesis is dedicated to my family, especially my mother, Nancy Drescher, my steadfast supporter for the past 25 years. Her strength gives me strength.
**LIST OF ABBREVIATIONS AND SYMBOLS**

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tr>
<td>PYD</td>
<td>Positive youth development</td>
</tr>
<tr>
<td>R&amp;S</td>
<td>Roots &amp; Shoots</td>
</tr>
<tr>
<td>LAUSD</td>
<td>Los Angeles Unified School District</td>
</tr>
<tr>
<td>CRS</td>
<td>Civic Responsibility Survey</td>
</tr>
<tr>
<td>MEIM</td>
<td>Multi-group Ethnic Identity Measure</td>
</tr>
<tr>
<td>INS</td>
<td>Inclusion of Nature in Self scale</td>
</tr>
<tr>
<td>ANOVA</td>
<td>Analysis of variance</td>
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<tr>
<td>MANOVA</td>
<td>Multivariate analysis of variance</td>
</tr>
<tr>
<td>JGI</td>
<td>Jane Goodall Institute</td>
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<tr>
<td>SES</td>
<td>Socioeconomic status</td>
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ACKNOWLEDGEMENTS

I would express my gratitude to Dr. Laura Johnson for guiding me throughout this process. From project conceptualization through the final draft, we worked hand in hand on this project. Without her support I could have never have completed this thesis.

I would also like to thank Dr. John Young and Dr. Todd Smitherman for their kind reviews of my work. Their support and time were and continue to be greatly appreciated.

Finally, I would like to thank my wife, Abigail McDonald Drescher, for her love and support throughout this project. It was invaluable to me as I completed this thesis.
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I. INTRODUCTION

Positive youth development (PYD), which focuses on the development of competencies and engagement in all youth, has become more prominent within the research community over the past 20 years (Catalano, Berglund, Ryan, Lonczak, & Hawkins, 2004). In a review of the research, Catalano and colleagues report that PYD program participation can influence the development of a number of different youth assets and strengths. Although many systems of classifying PYD outcomes have been proposed, one of the simplest and most popular is the “six C’s” of positive youth development (caring/compassion, competence, confidence, connections to others, character, and contributions; Lerner, 2004). One type of PYD program that has the potential to affect youth in all these areas is service learning.

Service learning, a pedagogical approach that combines course work with community service, has been shown to have positive effects on youth in a number of domains, including academic achievement, self-efficacy, and social responsibility (Eyler & Giles, 1997). Unfortunately the majority of these studies include youth from higher socioeconomic backgrounds, so it is often difficult to separate program effects from the high SES of the participants in the research (Larson, 2000). Youth from low SES backgrounds may have fewer opportunities to participate in such programs or other barriers that keep them from gains. Additionally, Minority youth, including Latino/a students, are less likely to participate in and enjoy the potential benefits of service learning (Shumer & Cook, 1999).
One of the most often observed benefits of service learning is an increase in civic or social responsibility in youth (Giles & Eyler, 1998). Civic responsibility is undoubtedly an important variable within the service learning paradigm. Ethnic identity has been associated with positive development among ethnic minority youth and is a youth asset that is of ongoing interest given the increasing diversity in the U.S. and changing ethnic minority-majority group dynamics. While coming to the forefront more recently, the relationship of youth to their natural environment is garnering increased attention in the context of natural disasters, looming environmental problems, and the climate crisis. With this changing landscape of youth development, full consideration of the context of youth development and programming is essential.

One PYD program that highlights youth’s varied contexts of development and has the potential to influence civic responsibility, ethnic identity, and connection to nature, is the Jane Goodall Institute’s (JGI) Roots & Shoots (R&S) program. Research on R&S serves as an example of applied development research with maximum external validity (Jensen, Hoagwood, & Trickett, 1999). Previous research indicates that R&S has the potential to have a powerful impact on youth across the globe (Johnson, Johnson-Pynn, & Pynn, 2007; Johnson, Johnson-Pynn, Sweeney, & Williams, 2009; Johnson-Pynn & Johnson, 2005; 2010). However, past studies have been exploratory and largely correlational in nature. Moreover, they have largely included youth living outside the U.S. There is an unmet need to examine gains in PYD constructs as a result of program participation in youth from diverse settings and contexts.

One context where R&S has the potential to have a large positive effect is in low income schools within the Los Angeles Unified School District (LAUSD). LAUSD is currently suffering from an academic and financial crisis (CDE, 2010; Llanos, 2010). In addition to the great need
for innovative community programming in LAUSD, it also presents an excellent context to study PYD programs for low income, Latino/a youth.

The current study addressed several gaps within the PYD/service learning research by studying a “real world” program for low income, Latino/a youth (R&S). It does so through a collaborative effort between researchers, R&S personnel, school staff, and students in five LAUSD schools. Results from this study contribute to the PYD literature at large, as well as specifically informing future R&S programming aimed at diverse youth.

*Positive Youth Development*

Positive youth development (PYD) refers to an approach to youth development that focuses on promoting appropriate behavioral, cognitive, and emotional competencies and engagement in children and adolescents (Catalano et al., 2004; Larson, 2000; Roth, Brooks-Gunn, Murray, & Foster, 1998). The PYD philosophy asserts that the focus of youth programs should not simply be the prevention of specific problems, but rather should include the encouragement of youths’ strengths and engagement within society (Catalano et al., 2004; Pittman, Irby, Tolman, Yohalem, & Ferber, 2003; Roth et al., 1998). PYD programs can serve as a buffer to prevent problem behaviors from occurring (Catalano et al., 2004). Indeed, Larson (2000) points out that many of youth’s problems in contemporary society can be more parsimoniously explained by a lack of engagement than by the existence of specific stressors. Moreover, when problems do exist it is essential to continue to provide opportunities for positive growth, rather than solely utilizing problem-focused approaches (Pittman et al., 2003).

*History of Youth Programs*

Programs for youth in the United States have undergone an interesting evolution over the past 35 years. During the late 1970s and early 1980s programs mostly followed a public health
model, focusing on treatment, interventions, and prevention for specific problems, such as drug abuse and teen pregnancy (Catalano et al., 2004; Pittman et al., 2003). In the late 1980s and early 1990s a major shift in the field occurred as programs began to address multiple problems and moved beyond simple prevention efforts by including PYD facets (Catalano et al., 2004; Pittman et al., 2003). The most recent shift in attention, beginning in the late 1990s, has refocused programs to foster youth engagement, instead of increasing specific competencies (Pittman et al., 2003). This shift occurred as “civic activists, community builders and youth advocates increasingly call for more and better engagement of youth in order to further not only youth development, but especially community development and civic commitment” (Irby, Pittman, & Ferber, 2001, p. 3).

**Theoretical Concerns in PYD**

Researchers have proposed several avenues to explore PYD. Larson (2000) suggests that researchers focus specifically on youths’ involvement in “structured voluntary activities” (e.g. sports, the arts, and civic organizations) as they provide the richest opportunities to observe PYD. Another possibility that Larson suggests is the development of PYD as a parallel field to that of developmental psychopathology, which would study PYD across multiple contexts. Alternatively, Lerner, Fisher, and Weinberg (2000) suggest that PYD be studied within the context of applied developmental science (ADS). This approach is driven less by psychological theory developed in the laboratory and more by the application of principles that have been shown to be useful within a given PYD context in the community (Lerner, et al., 2000).

Despite the growing interest in investigating PYD in multiple contexts, there is a lack of theoretical coherence in the field (Lopez & McKnight, 2002). Several different theoretical accounts of PYD have been proposed. For example, Catalano & Hawkins (2002) propose an
overarching theory that accounts for both PYD and problem behavior development: the social development model (SDM; Catalano & Hawkins, 1996). SDM posits that youth develop in both prosocial and antisocial ways through social interactions with families, peers, schools, and communities. Another example is found in Lopez & McKnight (2002) who propose that “hope” and “joy” are fostered within PYD programs, which leads to PYD. These and other theoretical approaches to studying PYD are not necessarily mutually exclusive, but rather represent different points of focus within PYD.

Regardless of the theoretical approach one might employ, it is of paramount importance to investigate PYD programs and the specific factors that encourage positive growth in youth. Knowledge of these programs and factors should help practitioners and program developers as they continue to provide programming that eliminates problem behaviors and increases competencies and prosocial behaviors. Reviews of PYD literature have elucidated many factors that may contribute to effective PYD programs (Catalano et al., 2004; Pittman, 2003). Prominently featured in both the Catalano et al. (2004) and Pittman et al. (2003) reviews are the ideas that successful PYD programs are long-term, involve several different contexts, and challenge youth to be active participants in the program. Additionally, Larson (2000) suggests that programs that create an atmosphere where youth are intrinsically motivated and concentrated on working toward long-term goals provide the optimal conditions for positive growth in youth. Ultimately, one goal of an applied science of PYD would be to empirically examine the effects of well-designed community PYD programs on youth in “real-world” settings (Jensen, Hoagwood & Trickett, 1999).

Several different organizational systems have been proposed to measure outcomes for youth involved in PYD programs (Benson, Leffert, Scales, & Blyth, 1998; Catalano et al., 2004;
Dworkin et al., 2003; Pittman et al., 2003). Benson and colleagues suggest that PYD outcomes can be measured using the “developmental asset framework,” which includes a system of 40 developmental assets that hold across sex, race-ethnicity, and income level within the U.S. Alternatively, Pittman et al. (2003) have suggested that there are seven areas of development and engagement that should be addressed by PYD programs: social/emotional, moral/spiritual, civic, vocational, physical, cognitive, and personal/cultural development and engagement. Dworkin et al. (2003) suggest that previous research and youth’s own accounts of their experiences point to six growth areas of interest to PYD: identity work, development of initiative, learning of emotional competencies, forming new connections with and learning about peers, development of social skills, and acquiring social capital. Yet another system is proposed by Catalano et al. (2004) who developed a list of 15 PYD constructs, including fostering self-efficacy, promoting moral competence, and fostering clear and positive identity, among others.

Of course, none of these organizational systems is “right” or “true” in any absolute sense, but rather serve as useful ways to categorize and capture the effects of PYD programs. It is unlikely that any single program or evaluation would concentrate on all of the different domains outlined above. What is being evaluated should be determined jointly by considering the unique goals of the youth, program, and research.

*Research on PYD Programs*

There is a growing body of research to suggest that PYD programs can, under optimal conditions, produce positive developmental outcomes (see Catalano et al., 2004; Eccles, Barber, Stone, & Hunt, 2003; Roth et al., 1998). Unfortunately, there is a lack of research concerning the positive outcomes for youth in PYD programs that occur in real-world (non-university) settings (Jensen et al., 1999). Also, there is a lack of research concerning the specific mechanisms that
mediate successful outcomes and investigations of how idiosyncratic variables affect PYD outcomes (Eccles et al., 2003).

An additional problem occurs when the relation of the extra-curricular activities with PYD outcomes is confounded by high SES (Holland & Andre, 1987; Larson, 2000). One possible solution to this problem is to focus on more experimental designs that utilize random assignment. However, this method is not without its disadvantages, such as unequal dropout rates between conditions and poor fit between child and condition (Eccles et al., 2003). Although this method would increase internal validity, this increase may be at the expense of an equal collaboration with community organizations and would not represent how groups typically function in the real-world (Lerner et al., 2000). Another method to circumvent the connection between positive outcomes and high SES is to study PYD programs that primarily serve low SES populations. One way to involve low SES youth is to study PYD programs associated with schools in low SES areas.

**School-Based PYD**

In recent years there has been a call to create and/or strengthen the bond between PYD programs and schools (Anderson-Butcher, Stetler, & Midle, 2006). Anderson-Butcher et al. found that there is a general lack of knowledge and communication between schools and after-school programs, despite an interest and need for these programs. Some have contended PYD programs and schools have competing goals (i.e., PYD programs focus on allowing individuals to express their individuality while schools focus on social control; Peebles-Wilkins, 2004). However, a more careful analysis reveals that schools and PYD programs not only have similar goals, but that schools already engage in PYD work to some extent (Thomsen, 2004). A high-level of coordination between schools and youth development programs is desirable as they work
toward these compatible goals, such as developing self-esteem, identity, and moral character in youth (Peebles-Wilkins, 2004). One way that this could be achieved is through the use of service-learning programs that directly tie schools to community organizations.

*Service Learning*

One type of pedagogy that has a strong potential to influence PYD in schools is service-learning. According to Richardson (2006, p. 38), “Service learning resides at the crossroads of youth development and community improvement.” Much work during the past 40 years has addressed creating a suitable definition for service-learning (Giles & Eyler, 1994; Waterman, 1997). Zeldin and Tarlov (1997) offer a reasonable definition that has sufficient breadth. They conclude that service-learning can include one, a combination of, or all of the following areas: changes in educational policy that make schools more significant to youth, a pedagogical system that increases academic, civic, and community engagement in youth, and a program that couples course work with community service. Service opportunities like those included in service-learning give youth an opportunity to experience new challenges, inhabit new social roles, and take on new responsibilities (Yates & Youniss, 1996). Eyler (2002) has stressed that effective service-learning not only includes the pairing of coursework and community service; it must also include a significant reflection component for students to reap the benefits of service-learning. Reflection allows service-learners to analyze problems, gain a deeper understanding of social issues, and undergo cognitive development (Eyler, 2002).

*Theoretical Underpinnings of Service-Learning*

Accompanying consideration of the definition of service learning has been a vigorous discussion of the theoretical roots of service-learning (Giles & Eyler, 1994). Scholars frequently cite the educational and social philosopher John Dewey’s thoughts concerning experiential
education as the intellectual basis for the service-learning pedagogy (Giles & Eyler, 1994; Johnson et al., 2007; Schneller, 2008; Waterman, 1997). Although Dewey never used the term “service-learning” explicitly, Giles and Eyler argue that Dewey’s philosophy concerning both experiential education and citizenship/democracy directly contribute to a contemporary understanding of service-learning.

Giles and Eyler (1994) explain that Dewey’s principles of continuity and interaction can account for the learning that takes place during service-learning programs as a result of the experiences and guided reflection that are included in these programs. For Dewey (1938), the Principle of Continuity referenced the idea that learning is a cumulative process where each experience builds on another over time to encourage growth. This might be best conceptualized as the developmental aspect of Dewey’s theory (Giles & Eyler, 1994). The Principle of Interaction was Dewey’s way of acknowledging the contextual aspects of learning (Giles & Eyler, 1994). Service learning can provide developmentally appropriate (Principle of Continuity) experiences in wide-ranging contexts (Principle of Interaction) paired with reflective thinking (Giles & Eyler, 1994).

Giles and Eyler (1994) also identify that the service-learning approach can help develop citizenship, an idea central to much of Dewey’s philosophy (Dewey, 1900; Dewey, 1916). One of Dewey’s (1916) central criticisms of the educational system is that it had not led to a more humane or moral society. Dewey clearly viewed the service aspect of service-learning methods as a powerful way to create responsible citizens and ultimately a more “worthy, lovely, and harmonious” society (Dewey, 1900 as cited in Giles & Eyler, 1994).

A contemporary extension of Dewey’s work concerning experiential education is Kolb’s (1984) Experiential Learning Theory (ELT). Kolb suggests that experiential learning occurs
through four cyclical steps or modes: observation or direct experience of an event (concrete experience), reflection on the experience (reflective observation), development of concepts that explain the experience (abstract conceptualization), and testing of these concepts in new contexts (active experimentation). Preferences for different modes, or “learning styles,” are jointly determined by idiosyncratic and contextual factors (Joy & Kolb, 2005).

Research on Service-Learning

Theoretical discourse notwithstanding, researchers have attempted to evaluate positive outcomes associated with service-learning. A growing body of evidence suggests that service-learning programs have the capacity to improve youth’s academic, social, and psychological competencies (Eyler & Giles, 1997). Youth’s own accounts of service-learning programs indicate that problem-solving abilities, teamwork, and social connections improve as result of these programs (Zeldin & Tarlov, 1997). Zeldin & Tarlov suggest that future research on service-learning programs should concentrate on measuring a broad sample of PYD outcomes.

Research has shown that service-learning has the potential to increase a number of PYD outcomes. For example, Giles and Eyler (1998) assert that enough evidence exists demonstrating that service-learning can increase social responsibility that the field can be confident in this effect. Additionally, Yates and Youniss’s (1996) review found that youth often experience increased self-esteem, self-confidence, self-efficacy, grade-point average, social relatedness, social-efficacy, and moral-political awareness after completing community service programs.

More recent research has continued to show the positive effects of service-learning. In a pre-post service-learning evaluation, Moely, McFarland, Miron, Mercer, and Ilustre (2002) found that college students evidenced a wide range of gains (including increases in plans for civic actions, interpersonal, problem-solving, and leadership skills, and social justice attitudes).
after participating in a semester long service-learning course. Also, Prentice (2007) used a well-controlled study to show that college students in service-learning courses show significant gains in civic engagement as compared to students in comparable courses without a service component. Additionally, Schneller (2008) used retrospective interviews to show that a service-learning program increased pro-environmental behaviors and attitudes in Mexican youth and that these gains persisted for up to two years.

*Latino/a Youth in Service-Learning*

One ethnic group that has received little attention in the PYD and service-learning literature is Latino youth (Grassi, Hanley, & Liston, 2004; Rodriguez & Morrobel, 2004). Although Latino individuals composed 12.4% of the U.S. population in 2000, that proportion is expected to nearly double to 24.4% by 2050 (Shrestha, 2006). Given Latinos’ increasing presence in the U.S., it is unfortunate that only three percent of empirical articles in six major youth development journals focus on Latinos (Rodriguez & Morrobel, 2004). As of 1997, only 10% of service-learners were Latino as compared to 72% for Whites and 14% for African Americans (Shumer & Cook, 1999). However, some limited research has evaluated service-learning with Latino students (Johnson & Notah, 1999).

Johnson & Notah (1999) studied service-learning through a pre-post examination involving a primarily Latino sample of middle school students (N = 156) who planned and executed a service-learning project over a nine week period. They found nonsignificant increases in self-esteem and responsibility using self-report measures (the Coopersmith Self-Esteem Inventory and the Junior Index of Motivation, respectively). Despite these nonsignificant findings, the authors noted that qualitative results indicated important increases in these areas. Teranishi (2007) evaluated the effects of a summer study abroad service learning course on a
small sample (N = 11) of Latino/a college students. She found that students in the program experienced increased self-efficacy, civic participation, and career preparedness, among other things, through her qualitative analysis of daily journals and quantitative analysis of university developed self-report measures. Although these results are promising, there remains a paucity of evidence concerning service-learning and Latinos.

As future research addresses service-learning in general, and programs involving Latino/a youth in particular, it is important sample a wide range of youth outcomes that are significant to both researchers and other stakeholders in the programs. Research that can utilize psychometrically sound instruments within the community setting will be especially useful. Several areas of study worthy of attention at this time are civic responsibility, ethnic identity, and connectedness to nature.

*Civic Responsibility*

The construct of civic responsibility is relatively new in psychology and a universal definition of civic responsibility has yet to be accepted by the research community (da Silva, Sanson, Smart, & Toumbourou, 2004). For example da Silva et al. (2004, p.230) define civic responsibility as “attitudes and behaviors that are beneficial to society, particularly prosocial community and political attitudes and behaviors” while Komives, Lucas, and McMahon (1998, p. 15) define civic responsibility as “the sense of personal responsibility individuals should feel to uphold their obligation as part of any community.” Adding to the confusion is the use, sometimes interchangeably, of closely related terms such as “social responsibility” and “civic engagement.” In fact, considerable debate remains in the field over the basic definition of “citizenship” (Sherrod, Flanagan, & Youniss, 2002). However, considering the growing body of research employing the term civic responsibility, it seems sensible to formulate a definition that
captures the spirit of the many idiosyncratic definitions of civic responsibility. A reasonable definition of civic responsibility is attitudes and behaviors that seek to improve the community (in the broadest sense of the word), as opposed to improving one’s own life or the lives of those with whom he or she is in immediate contact. Behaviors that are characteristics of civic responsibility include voluntary actions that range from working with a local non-profit organization to voting (da Silva et al., 2004).

The importance of studying civic responsibility in youth cannot be understated. Flanagan and Sherrod (1998, p.455) note that political and civic development “may well be the most important domain of human development.” Several scholars have pointed to the importance of the development of political and civic engagement with regard to Erikson’s (1968) identity development (Flanagan & Sherrod, 1998; Yates & Youniss, 1998). Civic responsibility is not only important for the human development, but is also essential for the function of a democratic society (Flanagan et al., 1998). Hansen (1998) argues that neglecting to foster civic responsibility in youth has led to “the distrust, disaffection, and frustration that students and citizens have about today’s social and political condition.” Putnam’s (1995) analysis concerning the decline of civic society in America has shown that the study and promotion of civic responsibility is more important now than ever.

Theories of Civic Responsibility

In light of the importance of civic responsibility, there has been relatively little work concerning the theoretical understanding of the development of civic responsibility; however some preliminary work has been completed in this area (da Silva et al., 2004; Rosenthal et al., 1998). Synthesis of the results from da Silva et al. (2004) and Rosenthal et al. (1998) indicates that attitudes regarding civic responsibility are not determined in early childhood, nor are they a
static personality trait that is insensitive to the current environment. It seems the most important factors contributing to civic responsibility are the current context and peer influences. Programs that create an environment that is conducive to the development of civic responsibility may be particularly important during adolescence because patterns of civic behavior that are established in adolescence often continue into adulthood (Yates & Youniss, 1998; Youniss et al., 1997).

Youniss et al. (1997) offer a developmental explanation for why patterns of civic involvement developed in adolescence are relatively persistent. The most obvious reason is that involvement in civic behaviors (such as community service) at this age expose youth to the structures and processes of civic entities that the youth could work with in the future. On a more theoretical level, Youniss and colleagues believe that adolescence is a crucial period where “civic identity” is constructed. This influence on identity persists to influence civic responsibility throughout adulthood. It is important to note that the type of civic behaviors engaged in by youth can mediate their effect on civic identity (Metz, McLellan, & Youniss, 2003). Metz et al. (2003) found that youth who completed service focused on a social cause reported larger gains in civic responsibility than a control group who completed service not focused on a social cause.

Complimenting the finding that civic responsibility developed in adolescence is relatively stable throughout the lifespan, is the consistent evidence that PYD programs, especially those with a service-learning component, have the capacity to increase youth’s civic responsibility (Koliba, 2000; Lee, Olszewski-Kubilius, Donahue, Weimholt, 2007; Yates & Youniss, 1998; Youniss & Yates, 1997).

The range of behaviors considered to fall within the realm of civic responsibility can create some difficulties when interpreting research. In an excellent review, Hyman and Levine (2008) elucidate how research focusing on a single behavior (such as voting or volunteering) can
create the illusion of group differences, when the actual picture is much more complex. For example, Hyman and Levine point out that although Caucasians report about 50% more volunteering than African Americans, a significantly higher percentage of African Americans attend church as compared to Caucasians, 70% and 46%, respectively. Although both voting and church attendance may be conceptualized as civically responsible behavior, focus on a single measure leads to dubious conclusions concerning group differences.

*Civic Responsibility in Latinos/as*

While recognizing these difficulties, it is important to note that several different proxies of civic engagement are lower in Latinos/as in the U.S. than any other ethnic group (Bogard & Sherrod, 2008; Dávila & Mora, 2007; Foster-Bey, 2008; Hyman & Levine, 2008; Torney-Purta, Barber, & Wilkenfeld, 2006, 2007). Foster-Bey (2008) found that Latinos had lower levels of civic engagement after controlling for income and educational attainment. Focusing on a large national sample of adolescents, Torney-Purta and colleagues (2007) found that Latino students had significantly less civic knowledge and were less likely to expect to vote than non-Latino students. Bedolla (2000) found that Latino/a youth in Los Angeles had low feelings of interest and efficacy concerning politics.

Another interesting facet concerning Latino/a individuals and civic responsibility is the extent to which Latino/a individuals might benefit from programs that encourage civic growth. A longitudinal investigation of persons involved with a national service program, AmeriCorps, found that eight years after completing the program Latino/a individuals were more likely to identify and understand problems in their community and to report the importance of neighborhood involvement as compared to controls (Corporation for National and Community Service, 2008).
Other Demographic Factors Affecting Civic Responsibility

Despite some complex findings concerning ethnicity and civic responsibility, there is one demographic variable that consistently predicts levels of civic responsibility: gender. Studies using a range of dependent variables as indicators for civic responsibility have found that females have higher levels of civic responsibility than males (da Silva et al., 2004; Dávila & Mora, 2007; Flanagan, Bowes, Jonsson, Csapo, & Sheblanova, 1998; Hyman & Levine, 2008; Rosenthal, Feiring, & Lewis, 1998). Unfortunately there has been a dearth of research investigating the basis for this gender difference (da Silva et al., 2004). Interestingly, Dávila & Mora (2007) found that males benefited more from service programs that encourage civic engagement than females.

One final demographic variable that can have a significant effect on civic responsibility is SES (Hyman & Levine, 2008). Since the mid-1970s a large gap in community involvement has existed between college graduates and individuals with no college education (Hyman & Levine, 2008). For example, Hyman & Levine note that well over 30% of college graduates are involved in community projects while less than 20% of individuals with no college are involved in similar projects.

Clearly demographic variables such as ethnicity, gender, and SES are important factors to consider when examining civic responsibility. However, simply comparing differences across ethnicities may not always be the optimal procedure to evaluate psychological variables in youth. For example, as Molix and Bettencourt (2010) point out, ethnic differences in self-esteem are not consistently found in empirical investigations. However, when the variable of ethnic identity is examined, significant relations emerge (e.g., Roberts et al., 1999). Therefore, we now turn our attention to the study of ethnic identity.
Although the broad concept of ethnic identity has been used in psychology and sociology for decades, a precise definition of ethnic identity remains elusive. Phinney (1990) noted that no agreed upon definition of ethnic identity existed within the literature, with most articles failing to provide any explicit definition of ethnic identity. This is likely a result of the different conceptual approaches used to study ethnic identity (discussed below). Still, a reasonable definition for the purposes of the current study is “one’s sense of belonging to an ethnic group, that is, a group defined by one’s cultural heritage, including values, traditions, and often language,” (Phinney & Ong, 2007, p. 274). Ethnic identity is a multidimensional concept, which includes self-identification, sense of belonging/commitment/attachment, exploration, attitudes towards one’s own ethnic group, and ethnic involvement (Phinney, 1990; Phinney & Ong, 2007).

Theoretical Roots of Ethnic Identity

The concept of ethnic identity has grown out of two distinct, yet interrelated research traditions within psychology: social psychology and developmental psychology (French, Seidman, Allen, & Aber, 2006). Within social psychology, social identity theory focuses on one’s feelings toward group membership and the social consequences of association with a particular group (Tajfel & Turner, 1979). Within developmental psychology, ethnic identity development has been closely associated with the concept of identity development proposed by Erikson (1968) and operationalized by Marcia (1980). Erikson believed that identity development was a critical psychosocial task during the adolescent period.

Initially, much of the research on ethnic or racial identity development focused on idiosyncratic conceptualizations of ethnic groups. For example, different models of ethnic identity development were proposed for African Americans (Cross, 1971; Thomas, 1971),
European Americans (Helms, 1984), and Latino/a Americans (Arce, 1981). During this time the majority of empirical research on ethnic identity focused on white ethnic groups and blacks, with Latino/a and Asian subjects receiving less attention (Phinney, 1990). Phinney (1989) has proposed a theory of ethnic identity development that can be applied to all ethnicities. Phinney suggests that there are three stages of identity development: diffusion/foreclosure (unexamined), moratorium (exploration), and achieved (acceptance). A major advancement in the study of Phinney’s theory and ethnic identity in general was the development of a measure to assess ethnic identity across ethnicities, the Multigroup Ethnic Identity Measure (MEIM; Phinney, 1992).

Research utilizing the MEIM and other measures of ethnic identity has shown that ethnic identity in the U.S. develops primarily during adolescence, is related to a variety of psychological constructs, and varies somewhat between ethnicities. Congruent with Erikson (1968) and Phinney’s (1989) theories, adolescence appears to be a critical period for the development of ethnic identity. Some research suggests that a critical period for the development of ethnic identity occurs during older adolescence (ages 16-19; Phinney, 1992; Phinney & Chavira, 1992). Although ethnic identity does appear to be stronger in older adolescents, it is important to note the evidence of ethnic identity development in both early and middle adolescence (French et al., 2006).

**Correlates of Ethnic Identity**

A plethora of previous research has focused on the positive relationship between ethnic identity and self-esteem (Phinney, 1992; Phinney & Chavira, 1992; Roberts et al., 1999; Smith et al., 1999). Other studies have demonstrated a positive association between ethnic identity and self-efficacy (Smith et al., 1999), coping, sense of mastery, optimism, and reduced depression.
Specifically, Smith and colleagues presented evidence that ethnic identity increases prosocial attitudes through its influence on perceived efficacy and self-esteem.

Although ethnic identity appears to have relatively robust relations with several proxies for psychological well-being in adolescents, these relations may not be consistent across ethnicities. In the initial validation study of the MEIM, Phinney (1992) found that ethnic identity tended to be lower in white youth than ethnic minority youth. This finding has been replicated in many subsequent studies (e.g., Roberts et al., 1999). Phinney also found that, in general, the link between self-esteem and ethnic identity was only present for ethnic minority youth. Interestingly, this relationship also appears to be present in white youth who are the minority in their schools (Phinney, 1992).

**Ethnic Identity and PYD**

Recently ethnic identity has begun to be examined within a PYD framework (e.g., Riggs, Bohnert, Guzman, & Davidson, 2010). Ethnic identity seems to be relevant to two of the “six C’s” of positive youth development (Lerner, 2004): confidence or positive self-identity and connections to community family and peers. Dworkin et al. (2003) and Catalano et al. (2004) specifically site the development of identity as an area of focus within the PYD framework. Ethnic identity also seems to be associated with several PYD outcomes including self-esteem and self-efficacy, especially in ethnic minorities (Phinney, 1992; Smith, et al., 1999).

Theorists have suggested that certain PYD programs may be an ideal context in which Latino/a youth can explore their ethnic identity (Eccles & Gootman, 2002; Villarruel, Montero-Sieburth, Dunbar, & Outley, 2005). Recently, Riggs and colleagues (2010) have found some empirical support for this assertion. They found that an after-school PYD program designed for
Latino youth could have a positive effect on Latino youth’s ethnic identity development, though this effect was secondary to familial influences.

Within the multicultural context of the U. S. and the other countries within the increasingly interconnected global community ethnic identity will remain an important construct for youth. Additionally, given recent environmental events (e.g., the Deep Horizon Oil Spill, climate change), the development of environmental attitudes and behaviors will be an important area of study in youth worldwide. One construct that is closely related to environmental attitudes and behaviors is connectedness to nature.

*Connectedness to Nature*

**PYD and Nature**

Although youth development models recognize the importance of context and “the environment” in a general sense, a notable omission from both developmental organizational systems and the research base is the role of the natural environment in PYD. While the link between the natural world and human development and wellbeing has long been recognized in the eco-psychology subfield (e.g., Roszak, Gomes, & Kanner, 1995), the absence of work considering the role of nature in mainstream PYD publications is concerning as several authors (e.g., Hattie, Marsh, Neill, & Richards, 1997; Kahn & Kellert, 2002; Louv, 2005) have presented evidence addressing the important role of nature in healthy youth development. Another line of research has examined the benefits of incorporating nature into school settings. For example, Blair (2009) reviewed evidence that indicates that school gardening can positively affect youth in the areas of science achievement, food behavior, school pride, teamwork, and self-esteem. Additionally, the Millennium Development Goals set by the United Nations in 2000 include education for sustainability as an important aspect of youth development and social justice.
However, some authors have recently begun to make the link between nature and PYD (e.g., Johnson et al., 2009; Wolf & Earth Corps, 2007).

The study of connectedness to nature, “the extent to which an individual includes nature within his/her cognitive representation of self” (Schultz, 2002, p. 67), and environmentally responsible behavior fit well within a PYD framework. Civic responsibility (e.g., Youniss et al., 1997) and connectedness to nature (e.g., Thomashow, 1995) can both be conceptualized as part of a youth’s identity, similarly to ethnic identity. Furthermore, Chawla and Cushing (2007) argue that findings concerning civic engagement and environmentally activism in youth parallel each other in several ways. In their review of the literature, Chawla and Cushing note that family role models, participation in service organizations, knowledge of the issues, and direct practice of action skills are important in fostering civic and environmental responsibility. Additionally, if the “community” is conceptualized as reaching beyond the human world to include other living beings within the natural world, as it is formulated in deep ecology (Naess, 1973), then civic responsibility and environmental responsibility can be viewed as highly related concepts. When considering this relation and findings indicating that connectedness to nature is correlated with ecologically responsible behavior, it becomes clear that connectedness to nature is a variable worthy of study within a PYD framework.

**Defining Connectedness to Nature**

Authors have discussed connectedness to nature in slightly different terms. Mayer and Frantz (2004, p. 504) refer to connectedness to nature as an “individuals’ experiential sense of oneness with the natural world.” This definition is very similar to Thomashow’s (1995, p. 3) definition of “ecological identity” (also referred to as “environmental identity”): “how we extend our sense of self in relationship to nature.” Connectedness to nature also seems to closely align
with the concept of ecocentrism or earth-centeredness, “a worldview that values equally the needs and rights of all of the interconnected parts that make up our global ecosystem, human and non-human” (Hayes-Conroy & Vanderbeck, 2005, p. 311). Finally, connectedness to nature is analogous to the concept of “nature relatedness,” which is described as “one’s appreciation for and understanding of our interconnectedness with all other living things on the earth” (Nisbet, Zelenski, & Murphy, 2009, p. 718).

Although not always explicitly cited by the above authors, it appears that a strong philosophical basis for the empirical study of connectedness of nature exists within “deep ecology” (Naess, 1973). Though deep ecology has no definitive doctrine, most deep ecologists consider identification with nature, or “identification-as-belonging”, as the key process involved in self-actualization (see Diehm, 2007 for a review of deep ecologists’ discourse concerning identification with nature). Furthermore, the ultimate endpoint of identification with nature from a deep ecology vantage point is environmental action; through the process of identification with nature, protecting nature becomes an act of self-defense (Diehm, 2007).

**Connection to Nature and Environmental Behavior**

Many theorists have suggested that a perceived connection to nature may have a strong influence on environmental action (e.g., Leopold, 1949; Naess, 1973; Rozak et al., 1995; Fisher, 2002). Stets & Biga (2003) found support for the assertion that aspects of identity, such as connectedness to nature, may be more important in predicting environmental behaviors than environmental attitudes. Mayer and Frantz (2004) have also demonstrated some empirical support for the relationship between connectedness to nature and environmental behavior. They found that connectedness to nature was positively related to self-reported environmentally responsible behavior, as well as several other variables including general life-satisfaction.
Additionally, Nisbet et al. (2009) found that nature relatedness was significantly correlated with environmental behavior.

**Influencing Connection to Nature**

Interestingly, preliminary research indicates that connectedness to nature can be influenced simply by spending time in nature. Schultz and Tabanico (2007) found that spending several hours in natural environments, such as a beach, an animal park, or a hiking trail, increased connectedness to nature. Bragg (1996) also offers some evidence that brief workshops can increase the sense of an “ecological self.” Research concerning increasing connectedness to nature may be important when designing programs that aim to increase environmentally responsible behavior.

Considering connectedness to nature’s link to environmentally responsible behavior, some have suggested that a focus on increasing a youth’s connectedness to nature could be important in increasing ecological behavior (Blanchet-Cohen, 2008; Nisbet et al., 2009; Schultz, Shriver, Tabanico, & Khazian, 2004). Schultz et al. suggest that previous studies indicating equivocal success in environmental education’s efforts to increase environmentally responsible behavior (see Zelezny, 1999) may be the result of a lack of consideration for connectedness to nature. An increased focus on connectedness to nature and ecological identity may have the potential to move beyond the traditional focus on proenvironmental attitudes (e.g., Dunlap & Van Liere, 1978) by emphasizing how senses of self are constructed across contexts (Hayes-Conroy & Vanderbeck, 2005). One PYD program that potentially has the capacity influence connectedness to nature, as well as ethnic identity and civic responsibility, is the Jane Goodall Institute’s Roots & Shoots program.

*Roots & Shoots*
The Jane Goodall Institute’s (JGI) Roots & Shoots (R&S) program is a PYD program that attempts to promote environmental and humanitarian education through a service learning pedagogy (Johnson et al., 2007). R&S started in 1991, when a small group of Tanzanian youth met with renowned chimpanzee researcher and humanitarian Jane Goodall at her home in Dar Es Salaam, Tanzania (JGI, 2010). From this humble beginning, R&S has grown to a membership of over 10,000 and is currently present in almost 100 countries (JGI, 2010).

R&S’s mission is “To foster respect and compassion for all living things, to promote understanding of all cultures and beliefs, and to inspire each individual to take action to make the world a better place for people, animals and the environment,” (JGI, 2010). To achieve these goals R&S promotes youth-led, hands-on community service projects that benefit the community, animals, and the environment (Johnson et al., 2007). R&S groups are often tied to specific classroom instruction and incorporate the reflection that is an essential part of service learning.

Specifically, R&S proposes that knowledge, compassion, and action are essential to promoting ethical and prosocial values in youth (Johnson et al., 2007). Groups learn about community problems (knowledge), which fosters compassion for the community, environment, and animals. Next, youth translate this knowledge and compassion into action by formulating and completing service projects in the community. These projects are then reflected on, enhancing knowledge and compassion as well as personal growth (Johnson, et al. 2007; see Figure 1).

Research examining R&S programs has found the program to have a significant effect on several PYD variables in youth internationally (Johnson et al., 2007; Johnson et al., 2009; Johnson-Pynn & Johnson, 2005). Johnson-Pynn & Johnson (2005) found evidence of increases
in conservation knowledge, cognitive and social competencies, positive affect, self-efficacy, and civic responsibility among Tanzanian R&S members. Paralleling Johnson-Pynn & Johnson’s findings in East Africa, Johnson et al. (2007) found evidence of increases in civic responsibility, conservation knowledge, cognitive and social competencies, self-efficacy, and compassion in Chinese R&S members. Most recently, Johnson et al. (2009) found increases in community service self-efficacy and environmental identity among international youth R&S leaders who attended the R&S Global Youth Summit. Additionally, qualitative reports from students in this study indicated that R&S programming may have increased their connection to nature.

Current Study

Rationale

The current study attempts to address gaps in the PYD/service learning literature in several ways. First, although increases in civic responsibility have been consistently observed in service learning programs (Giles & Eyler, 1998), there is a call for research that evaluates the effects of PYD in “real-world”, non-university settings (Jensen et al., 1999). Additionally, as SES has often been a confounding variable in PYD studies (Larson, 2000), this study attempts to evaluate PYD within a low SES sample. Although ethnic identity is a variable that has received considerable study (see Phinney, 1990 for a review), the question of increasing ethnic identity through PYD programs has rarely been addressed. Connection to nature is another variable that has received little attention in the PYD literature (see Johnson et al., 2009 for a notable exception). Finally, and perhaps most importantly, this study aims to contribute to increasing the knowledge base concerning the understudied Latino/a youth demographic (Rodriguez & Morrobel, 2004).

Study Context: Los Angeles Unified School District
This study focuses on the development of civic responsibility, ethnic identity, and connection to nature in youth through R&S programs in four Los Angeles County, CA schools. Los Angeles Unified School District (LAUSD) is currently mired by a plethora of problems in the educational, financial, and social realms. For example, the California Department of Education (CDE; 2010) reported that in 2009 on the California Standards Test (CST) 31% and 41% of LAUSD seventh grade students scored below basic or far below basic in English and mathematics, respectively. Statewide only 18% scored this low for English and 26% scored this low for mathematics (CDE, 2010). LAUSD also has a higher high school dropout rate than the rest of the state in 2007 (18.7% vs. 15.4%; CDE, 2010).

LAUSD has also been suffering a financial crisis in recent years (Llanos, 2010). They are projected to have a $640 million shortfall for the 2010–2011 school year (Llanos, 2010). Ultimately the crisis has led the district to employ several strategies, including shortening the school year, teacher layoffs, and involuntary furloughs to save the district money (Llanos, 2010; Associated Press, 2010). The financial woes have culminated in students filing a lawsuit against LAUSD, claiming that low-income and minority areas are being disproportionately affected by the cuts (AP, 2010).

Needless to say, there is dire need for innovative programming to help support the public education system in Los Angeles County. R&S service-learning groups offer one possible avenue to augment the typical classroom education. Among other things, it is hoped that R&S will be able to foster a sense of civic responsibility, ethnic identity, and connectedness to nature among the youth who participate with R&S.

R&S in LAUSD
Currently, R&S is receiving a two-year grant from the Weingart Foundation to implement R&S groups in ethnically and socio-economically diverse schools within LAUSD. Specifically, all schools involved in this study are classified as Title I (disadvantaged) by the No Child Left Behind Act (2002). Students in these schools may have the most to gain from R&S, considering that lower SES groups in general, and Latinos/as in particular, report lower levels of civic engagement (Hyman & Levine, 2008).

R&S groups have been implemented in two distinct ways within LAUSD. One set of groups follows a traditional service learning pedagogy, consisting of an instructor who works with students to plan R&S projects while structuring classroom instruction to compliment the service projects. In some cases these classes are required courses that integrate an R&S service-learning component within a traditional curriculum. In other situations, the R&S work is incorporated into environmental science elective courses. A second type of group functions as an extracurricular activity. These extracurricular groups utilize a faculty advisor who helps to facilitate reflection on R&S projects and foster learning concerning the issues surrounding these service projects.

All of the groups are encouraged to complete three projects per year, ideally one each in the areas of the environment, animals, and the human community. All group members received a membership scholarship and bus scholarship (total value is approximately $450) to assist in their completion of projects. Previously groups have completed projects as diverse as starting a native, sustainable garden to raising money to help provide clean drinking water for children in developing countries.

*Summary*
This study examined youth characteristics, program factors, and outcomes among LAUSD youth (aged 10 - 18) who participated in a school-based R&S program. Pre to post changes in youth assets, including civic responsibility, ethnic identity, and connection to nature were examined. Youth demographics, such as gender, age, SES, and ethnicity (Latino/a vs. other) were examined in relation to youth asset measures on pre and post assessments. Program context (i.e., the different schools) is also examined in relation to youth assets and outcomes. All students were given measures of civic responsibility, ethnic identity, and connectedness to nature before and after completing a school year of involvement with R&S. Several relations among the variables were expected. In general it was expected that all PYD attributes will significantly increase from the pre-survey to the post-survey. Additionally, it was expected that students will experience differential gains in PYD attributes depending on the specific school in which they are involved. Also, it is expected that certain demographic factors (e.g., gender) will affect PYD attributes, especially at pre-test. Finally, we expected to find correlations among PYD attributes and specific demographics (e.g., age).
II. METHODS

This study used a pre/post matched design to assess changes in civic responsibility, ethnic identity, and connectedness to nature, as well as their interaction with program type and demographic factors.

Participants

Participants were 112 youth (mean age = 13.95 at pretest and 13.44 at posttest) in grades five through twelve from five LAUSD schools. Although 13 groups were funded by this project, less than half (n = 5) of the groups agreed to participate in this study. Because this program focuses on Title I schools, a large percentage of low SES students are in the sample. Forty-six percent of students at pretest and 38.3% of students at posttest reported that they did not always have enough resources to meet basic needs. Additionally, for students who were aware of their parents’ educational level, the majority reported that both their mother and father had a high school education or less. Also, as expected, a diverse range of ethnic groups are represented in the study. The majority of students in the sample were Latino/a (69% at pretest and 65% at posttest) and female (64.3% at pretest and 51.7% at posttest; see Tables 1 – 4 for demographics)

Measures

Demographic Questionnaire

Demographic factors measured included sex, age, grade, country of origin, country longest lived in, languages spoken, parental education, and socioeconomic status (SES). SES was
assessed through an item, used frequently in international R&S studies, asking the student to estimate the family’s ability to meet basic needs. Response options include “We do not have enough money to meet basic needs,” “We usually have enough money to meet basic needs,” “We always have enough money to meet basic needs,” and “We have more than enough money to afford entertainment and leisure activities.”

Civic Responsibility Survey

Civic responsibility was measured using the Civic Responsibility Survey (CRS; Furco, Muller, & Ammon, 1998). This measure is designed to measure civic responsibility in youth from kindergarten to 12th grade. There are three different levels of the CRS: Level 1 (elementary), Level 2 (middle school), and Level 3 (high school). The Level 1 scale includes ten statements that students rate for degree of agreement (disagree, agree a little, or agree a lot). The Level 2 scale includes the 10 statements from Level 1 and six possible degrees of agreement (strongly disagree, disagree, slightly disagree, slightly agree, agree, or strongly agree). The Level 3 scale includes 24 statements with the same possible response options as Level 2.

All levels of the CRS can be partitioned into three clusters: Connection to Community, Civic Awareness, and Civic Efficacy. The Connection to Community cluster includes statements such as “I feel like I am part of a community” and “I pay attention to news events that affect the community.” The Civic Awareness cluster is composed of statements such as “doing something that helps others is important to me” and “I like to help other people, even if it is hard work.” Statements such as “I know what I can do to help make the community a better place” and “I feel like I can make a difference in the community” compose the Civic Efficacy cluster.

Scores on any particular item range from one to three (Level 1) or one to six (Levels 2 and 3). There is one reverse scored item for the Civic Efficacy cluster on Level 3 of the CRS:
“Providing service to the community is something I prefer to let others do.” Cluster scores are simply the mean score of items within a given cluster. The total score ranges from one to three for level or one to six for levels two and three and is calculated by summing all CRS item scores and dividing by the number of items.

Furco et al. (1998) reported very good internal consistencies (using the guidelines established by DeVellis, 2003) for the overall score for both the Level 2 (\(\alpha = 0.84\)) and Level 3 (\(\alpha = 0.93\)) and respectable reliability for Level 1 (\(\alpha = 0.76\)) in a study of California youth involved in a service learning program. As would be expected, reliability was less for the clusters. For Level 1, cluster reliabilities were unacceptably low (\(\alpha = 0.53 - 0.59\)). Cluster reliabilities were much more acceptable for Level 2 (\(\alpha = 0.63 - 0.77\)) and Level 3 (\(\alpha = 0.63 - 0.85\)). Unfortunately, there is currently no validity data concerning the CRS. Although this makes the CRS a less than ideal instrument, Zaff, Boyd, Li, Lerner, & Lerner (2010) note that no integrated measures of civic responsibility that address more than civic behaviors (simply asking if people volunteer, vote, etc.) have been previously developed.

**Multigroup Ethnic Identity Measure**

The Multigroup Ethnic Identity Measure (MEIM; Phinney, 1992; Roberts et al., 1999) was originally designed by Phinney to measure three aspects of ethnic identity (positive ethnic attitudes and sense of belonging, ethnic identity achievement, and ethnic behaviors or practices). However, a factor analytic investigation by Roberts and colleagues (1999) indicates that the MEIM measures two distinct but related factors of ethnic identity: affirmation/belonging and exploration. Affirmation/belonging refers to “a strong attachment and a personal investment in a group” (Phinney & Ong, 2007, p. 272) and may be the most important aspect of ethnic identity.
Exploration refers to “seeking information and experiences relevant to one’s ethnicity” (Phinney & Ong, 2007, p. 272) and is considered an important function in ethnic identity development.

Each item on the MEIM is a statement (e.g., “I am happy that I am a member of the group I belong to”) that participants indicate their level of agreement with on a four-point scale: strongly agree, agree, disagree, and strongly disagree. For each item “strongly agree” is scored as four points, “agree” as three points, etc. A total MEIM score is derived by summing all items and dividing by 12. Likewise the ethnic affirmation/belonging scale, comprised of items such as “I have a strong sense of belonging to my own ethnic group,” is scored by summing the seven items that comprise this scale (items 3, 5, 6, 7, 9, 11, and 12) and dividing by seven. Finally the ethnic exploration scale, comprised of items such as “I think a lot about how my life will be affected by my ethnic group membership,” is scored by summing its five items (1, 2, 4, 8, and 10) and dividing by five. Additionally, the version of the MEIM that will be used in this study features free response items for self-categorization and identification of parents’ ethnicities, as well as a multiple choice item for self-identification. Multiple choice response options for the self-identification item are “Asian or Asian American, including Chinese, Japanese, and others,” “Black or African American,” “Hispanic or Latino, including Mexican American, Central American, and others,” “White, Caucasian, Anglo, European American; not Hispanic,” “American Indian/Native American,” “Mixed; Parents are from two different groups,” and “Other (write in).”

Generally the MEIM has demonstrated “respectable” to “very good” internal consistency, using the guidelines suggested by DeVellis (2003), in youth across a wide age range. Smith et al. (1999) found the overall MEIM score to have a respectable internal consistency (α = 0.76) in an ethnically diverse sample of youth (ages 11 – 13). In an ethnically diverse sample of adolescents
(ages 12 – 14) Roberts et al. (1999) found very good internal consistencies for the overall score \( (\alpha = 0.85) \) and the ethnic belonging scale \( (\alpha = 0.84) \) and respectable internal consistency for ethnic exploration scale \( (\alpha = 0.70) \). Phinney (1992) found a very good internal consistency \( (\alpha = 0.81) \) for the overall score on the MEIM in ethnically diverse sample of high school students (ages 14-19). Although few studies have examined ethnic identity in younger children, Reese, Vera, and Paikoff (1998) evaluated the reliability of the MEIM in a sample of African American youth (ages 8-12). Reese and colleagues found the internal consistency for the total MEIM score to range from unacceptable \( (\alpha = 0.59) \) to respectable \( (\alpha = 0.72) \).

Finally there is a significant amount of research supporting the content and construct validity of ethnic identity as measured by the MEIM. During the development of the MEIM Phinney (1990) conducted an extensive review of ethnic identity literature to assure that the MEIM had adequate coverage of the different content areas that comprise ethnic identity. Additionally, Phinney (1989) and Phinney and Tarver (1988) collected qualitative interview data from adolescents so that youth’s own conceptualizations of ethnic identity would be included in the MEIM. The construct validity of the MEIM is supported through the observed relations of MEIM scores with other psychological constructs including self-esteem, coping, sense of mastery, optimism, loneliness, and depression (Roberts et al., 1999).

**Inclusion of Nature in Self scale**

The Inclusion of Nature in Self scale (INS; Schultz, 2001) is a single item pictorial measure designed to assess the perceived relationship between self and nature. The INS is a modified version of the Inclusion of Other in Self scale (IOS; Aron, Aron, & Smollan, 1992) used to examine interpersonal closeness. The INS features seven images of two circles (labeled “nature” and “self”) overlapping each other to varying degrees. The following directions are
provided for the INS: “Please circle the picture below that best describes your relationship with the natural environment. How interconnected are you with nature?” The scale is scored from one to seven with one representing the least inclusion of nature in self (i.e., no overlap between the two circles) and seven representing the greatest level of connectedness with nature (i.e., the circles completely overlap).

Although it is impossible to calculate a coefficient of internal stability for a single-item scale, evidence from repeated administrations of the INS suggest that the scale has good temporal stability. Schultz, Shriver, Tabanico, and Khazian (2004) found the INS to have good test-retest reliability immediately after the initial administration (r = 0.98), one week later (r = 0.90), and one month later (r = 0.84). Scores on the INS have been found to correlate with several psychological constructs including biospheric concern, perspective taking, self-reported environmental behavior, other self-report measures of connection to nature, and implicit measures of connection to nature (Mayer & Franz, 2004; Schultz, 2001; Schultz, et al., 2004).

Procedures

Throughout the preceding year, teachers from Title I schools were recruited by R&S staff to start R&S programs in their schools. Recruitment occurred via presentations at LAUSD meetings that Title I teachers were expected to attend. Teachers who indicated an interest in R&S were to work with school administrators to determine whether the R&S group at their school would be an extra-curricular R&S club or an R&S classroom. Decisions concerning what type of group to establish were left up to teachers and administrators. Concerns such as teacher availability and classroom flexibility largely determined what type of R&S group would be implemented at each school. Regardless of what type of group they would be leading, all educators were to be trained by R&S staff before starting an R&S group in their school.
Students in extra-curricular R&S were recruited through school announcements that indicated when the group was meeting. Students who joined these R&S groups did so of their own accord and may or may not have had class with the teacher who served as the group leader. Decisions concerning the projects that were completed, frequency of meetings, content of meetings, etc. were left up to the group leader and the students. Although each group was encouraged by R&S staff to complete three service projects per year that address needs in the community, the ultimate decisions remained with each group’s members.

Students in R&S classrooms did not necessarily choose to participate with R&S. Whether or not a classroom planned to partner with R&S had no bearing on which classroom students were assigned. Some teachers decided to have their classrooms participate in R&S projects, and students in these classrooms took part in R&S activities as they would with any other classroom activities. In fact, “Roots & Shoots” may never be mentioned by name in these classrooms. Similarly to the extracurricular R&S groups, the R&S classrooms were encouraged to participate in three service projects per year, but the ultimate decisions concerning the frequency and type of activities that students participated in would be left up to individual teachers and classrooms.

Before beginning the R&S program in the fall, R&S staff visited each group and administered a survey packet including the demographic questionnaire, CRS, MEIM, and INS to all participants. For extracurricular groups, group administration of this survey occurred at the first meeting. For classroom groups, group administration of this survey occurred during the school day before any R&S activities were initiated. Voluntary participation in the study was assured by using passive consent procedures with parents and having students sign an assent form the day of the pre-survey administration. Students in grades three through five had the assent form and instructions for all measures read to them. Students in middle and high school
completed the survey on their own. However, if students had reading difficulties or were confused by survey questions, an R&S staff member was available to assist students in reading the survey and answering any questions the students had. Students in all grades were given contact information for the primary investigator at the completion of the survey.

Follow-up survey packets were administered in the spring, using the same procedures as those outlined above. After all surveys were collected they were mailed from Los Angeles to the University of Mississippi for storage and data analysis. All procedures for this study were approved by the Institutional Review Board at the University of Mississippi.

**Hypotheses**

**Hypothesis 1.** Students’ scores on the CRS, MEIM, and INS will increase from the pre-survey to the post-survey.

**Hypothesis 2.** Students will experience differential gains in CRS, MEIM, and INS scores depending on the specific school in which they are involved.

**Hypothesis 3.** Latino/a students will have larger gains in CRS scores than non-Latino/a students.

**Hypothesis 4.** Male students will experience larger gains in civic responsibility than female students.

**Hypothesis 5.** At pre-survey, females will have higher CRS scores.

**Hypothesis 6.** At pre-survey, Latino/a students will have lower CRS scores than non-Latino/a students.

**Hypothesis 7.** At pre-survey, Latino/a students will have higher MEIM scores than non-Latino/a students.
Hypothesis 8. CRS scores will be positively related to SES, MEIM scores, and INS scores.

Hypothesis 9. Age and MEIM scores will be positively related.

Design and Analysis

Descriptive statistics were calculated for each variable. Data were inspected and issues regarding missing data and outliers were addressed as necessary. Also, Cronbach’s α was computed for the CRS and each CRS cluster as well the MEIM and each MEIM subscale. For purposes of analysis, ethnicity was dichotomized and coded as Latino/a vs. non-Latino/a. Also, a correlation matrix was produced for all measured variables.

The correlation matrix was explored to assess possible correlation between previously unexamined variables and to test specific hypotheses. The hypothesis of positive relations between civic responsibility and SES (as measured by parental education and ability to meet basic needs), civic responsibility and ethnic identity, civic responsibility and connection to nature, and age and ethnic identity were evaluated by examining the correlation between these variables. A final exploratory analysis was conducted by evaluating differences between the subscales of CRS using a one-way ANOVA.

A 2 (ethnicity) X 2 (gender) X 2 (school) repeated measures multivariate analysis of variance (MANOVA) was performed on the three dependent variables: civic responsibility, ethnic identity, and connectedness to nature. If a significant multivariate effect was present, each dependent variable would have been examined individually by computing the three separate univariate analysis variance (ANOVA) tests. These tests were necessary to assess many of the specific hypotheses of these experiments. However, given that this multivariate effect was not
significant (see Results section) and pretest ANOVAs were examined for CRS and MEIM scores to assess some specific hypotheses.

First, the civic responsibility (as measured by CRS scores) ANOVA was examined. A main effect of gender indicated if females initially have higher levels of civic responsibility. A main effect of ethnicity indicated if Latino/a students initially had lower levels of civic responsibility than other students.

Next the ethnic identity ANOVA were computed using total MEIM scores as the dependent variable. A main effect of ethnicity indicated if Latino/a students initially had higher levels of ethnic identity than other students.
III. RESULTS

Group Descriptions

Each of the five R&S groups who participated in this study varied across a number of factors including age group, type of program, projects completed, etc. Although all R&S groups share a general philosophy and format, the particulars of each group can vary widely. The descriptions below highlight some of the unique aspects of each R&S group (also see Table 5).

School for the Visual Arts and Humanities

The School for the Visual Arts and Humanities is a high school that incorporated R&S into a non-elective science classroom. The group started out strong, creating a recycling program at their school. Unfortunately, due to economic difficulties in LAUSD, teacher communication ceased with R&S and the group dissolved.

James A. Foshay Learning Center

The James A. Foshay Learning Center is a high school that used R&S in conjunction with an elective environmental science class. This R&S group elected to divide and conquer environmental problems by splitting into committees. One committee focused on painting a community mural, while two others started a school recycling program and planted a garden at their school. A fourth committee attempted to start a community recycling program on a vacant lot near the school, although they were ultimately unable to do so.

Los Angeles Academy Middle School
Los Angeles Academy Middle School (LAAMS) established their R&S group through the dedicated work of one middle school teacher. Although the administration was hesitant about letting R&S work with LAAMS, one teacher convinced the administration to allow students to hold R&S meetings during their lunch period twice per week. Despite having their faculty sponsor miss approximately three months of school due to medical issues, R&S students completed two projects during the year. First, students created an environmental fair presentation that focused on creating a native garden. Additionally, students took a field trip to the site of a former Japanese internment camp from World War II, which highlighted one of the country’s most blatant examples of ethnic discrimination.

Emerson Middle School

Emerson Middle School was another voluntary lunch time R&S club. This group completed a water audit on their school. They also sold reusable water bottles at school to raise money. With the money they raised, they installed faucet water filters on campus to reduce bottled water waste. Additionally, they successfully lobbied their school to use biodegradable lunch trays.

West Hollywood Elementary

At West Hollywood Elementary the R&S group named themselves the “West Hollywood Wizards.” The Wizards were active in their non-elective classroom R&S group. Students focused on global and local water needs. They organized a “water walk” where students carried water across a football field to simulate the distance and weight children all over the world must travel to retrieve fresh water. This experience also led to completing a “water audit” at their school and writing haiku poems about the need for water conservation that were displayed in their school.

Sampling
In total, 112 students participated in this study. Unfortunately only 31 students completed both pre and post assessments, 30 of which were from Foshay Learning Center and West Hollywood Elementary School. 53 additional students took only the pretest. Also, 29 students took only the posttest. As such, our within-subjects tests were underpowered and statistics computed at pre and posttest were from partially unique samples.

Quantitative Results

Descriptive Statistics

The means and standard deviations for all quantitative variables are included in Tables 6–7. Scores on the CRS ranged from 1.00 to 6.00 for levels three and two and 1.60 to 3.00 for level one. Mean scores for the level three CRS clusters (connection to community = 3.80, civic awareness = 4.16, and civic efficacy = 3.67) were considerably lower than the scores reported by Lee et al. (2007) for academically talented service learners. Mean scores from levels one and two could not be compared with other literature as no published research has used these levels of the CRS.

At the item level, the lowest item for levels one and two at both pre and posttest was item seven (connection to community cluster), “I know a lot of people in the community, and they know me.” The highest rated item for levels one and two was item six (civic awareness cluster), “Helping other people is something everyone should do, including myself.” For level three of CRS the highest rated item was also in the civic awareness cluster, item 17 (“Becoming involved in political or social issues is a good way to improve the community.”). Lee et al. (2007) also found this to be one of the highest rated items on the CRS. The lowest rated item was item 16 (civic efficacy cluster), “I try to encourage others to participate in community service.”
Using a linear conversion (discussed below) all levels of the CRS were converted to a six point scale for comparative purposes. Using this conversion, mean CRS scores were 4.56 at pretest and 4.71 at posttest (see Figure 2).

Scores on the MEIM ranged from 2.08 to 3.92. Mean MEIM scores were 3.04 and 3.12 at pre and posttest, respectively (see Figure 3). These scores are comparable to other investigations using the MEIM with urban Latino/a youth (e.g., Riggs et al., 2010). At the item level, item five (commitment, belonging, and affirmation subscale; “I am happy that I am a member of the group I belong to.”) was the highest rated item while item 2 (ethnic identity search subscale; “I am active in organizations or social groups that include mostly members of my own ethnic group.”) was the lowest rated item.

INS scores ranged from 1 to 7. Mean scores for the INS were 4.19 at pre and 4.38 at posttest (see Figure 4). These scores were somewhat lower than a previous R&S sample at pre and posttest, respectively (Johnson et al., 2009), but higher than previous undergraduate samples (Schultz & Tabanico, 2007).

**Internal Consistencies**

Internal consistencies were examined for the CRS and the MEIM, as well as their respective subscales. Using the guidelines recommended by DeVellis (2003), internal consistencies ranged from unacceptably low ($\alpha = 0.38$; Level 2 Connection to Community cluster) to very good ($\alpha = 0.94$; Level 3 total score; see Table 8). Unfortunately, 20% ($N = 4$) of the CRS internal consistencies calculated fell below minimally acceptable standards for internal consistency ($\alpha < 0.60$). However, the total CRS scores for all levels were more reliable ($\alpha \geq 0.64$). Unfortunately, the internal consistencies and other statistics using CRS scores may be askew because Foshay Learning Center (high school) was administered the middle school version (Level 2) of the CRS due to an administrative error.
Internal consistencies were generally higher for the MEIM scales (mean $\alpha = 0.74$; see Table 9). However, at pretest one scale (Ethnic Identity Search), had an unacceptable internal consistency ($\alpha = 0.56$). Other internal consistencies ranged from minimally acceptable ($\alpha = 0.66$; Affirmation, Belonging, Commitment) to very good ($\alpha = 0.84$; total MEIM score), using DeVellis’s (2003) guidelines.

Correlations

Bivariate correlations between all relevant variables were calculated for both pre (see Table 10) and posttest (see Table 11). At both pre and posttest all three of the measures of SES (mother/father educational level and economic status item) were significantly correlated with each other ($r = 0.30 – 0.86, p < .05$). This indicates that these items were measuring different aspects of the same construct, which is described as SES.

CRS scores showed differing patterns of relations to other constructs at pre and posttest. At pretest the Civic Efficacy scores was correlated with the MEIM total scores ($r = 0.30, p = 0.015$), as well as the ethnic identity search ($r = 0.25, p = 0.042$) and affirmation ($r = 0.32, p = 0.008$) subscales. Additionally, the Civic Awareness cluster was related to the MEIM total score ($r = 0.24, p = 0.045$) and the affirmation subscale ($r = 0.27, p = 0.025$). At posttest all CRS scores were correlated with the ethnic identity search subscale of the MEIM ($r = 0.35 – 0.46, p < 0.01$). Also at posttest, the MEIM total scores was correlated with the CRS total score ($r = 0.32, p = 0.19$) and the Civic Awareness cluster ($r = 0.30, p = 0.027$). At pre ($r = 0.28, p = 0.019$) and posttest ($r = 0.29, p = 0.029$) the Civic Efficacy cluster was correlated with INS scores. Additionally, the Connection to Community cluster was correlated with INS scores ($r = 0.27, p = 0.047$) at posttest only. At pretest CRS scores were negatively correlated with age ($r = -0.31, p = 0.008$).
During both pre and posttest age was significantly and negatively correlated to father’s level of education ($r = -0.30 - -0.56$) and mother’s level of education ($r = -0.31 - -0.49$) at the $p < 0.01$ level. This suggests that older students in the sample had a lower SES. Furthermore, there was a significant correlation between age and the direct measure of economic status ($r = -0.32, p = 0.15$) at posttest only.

Age was also negatively related to connection to nature as measured by the INS scale at pre ($r = -0.39, p < 0.001$) and posttest ($r = -0.41, p = 0.002$). This suggests that connection to nature may be stronger in younger children. Additionally, INS scores were positively related to both economic status ($r = 0.35, p = 0.010$) and father’s educational level ($r = 0.41, p = 0.002$) at posttest.

**CRS Cluster ANOVAs**

Repeated measures ANOVAs at pre ($F_{(2, 140)} = 39.296, p < 0.001$) and posttest ($F_{(2, 114)} = 38.582, p < 0.001$) revealed significant differences between the three clusters of the CRS (see Table 12). Using the Bonferroni correction all clusters were compared against each at both pre and posttest. At pretest the Civic Awareness cluster ($M = 5.10, SD = 0.85$) was significantly higher than the Connection to Community ($M = 4.27, SD = 0.76$) and Civic Efficacy ($M = 4.43, SD = 0.92$) clusters at the $p < 0.001$ level (see Table 13). Likewise, at posttest the Civic Awareness cluster ($M = 5.21, SD = 0.96$) was significantly higher than the Connection to Community ($M = 4.39, SD = 1.02$) and Civic Efficacy ($M = 4.63, SD = 1.04$) clusters at the $p < 0.001$ level. Additionally, the Civic Efficacy cluster was higher than the Connection to Community at the $p < 0.05$ level at posttest only.

**Pre to Post Intervention Changes**
In order to examine CRS scores across levels CRS scores had to be transformed into a common metric. Because the level one CRS (elementary) is based on a three-point scale whereas levels two and three of the CRS (middle and high school) are based on a six-point scale, level one scores were linearly transformed to be on a six-point scale by multiplying all level one scores by two.

This simple math solution to comparing measures with differing scale lengths is not ideal in many situations (Colman, Norris, & Preston, 1997). However, this solution was chosen for two reasons. The first reason that this linear transformation was chosen is that it maintains conceptual coherence of the scale anchors’ meanings. Responses on the three-point scale of “disagree,” “agree a little,” and “agree a lot” were transformed to correspond to responses of “disagree,” “slightly agree,” and “strongly agree,” respectively, on the six-point scale. Additionally, no participants took multiple levels of CRS, making it impossible to derive a regression equation to predict scores on the scales of differing lengths, which was Colman et al.’s preferred method for these types of comparisons.

Before computing the 2 (ethnicity) x 2 (gender) x 2 (school) repeated measures MANOVA data were screened to evaluate if they met the assumptions of the MANOVA test. All variables approximated a normal distribution and no variables were found to be univariate (Z-score ≥ 3) or multivariate outliers (Mahalanobis distance ≥ 22.458). Also, Levene’s test of equality of error variances was non-significant for all variables (p ≥ 0.05). Examination of scatter plots revealed that the variables included in this analysis appeared to meet the assumptions of linearity and homoscedasticity.

The overall MANOVA was not significant, F (3, 14) = 1.638, p ≥ 0.05. Unfortunately, due to the fact that only a small subsample of participants completed all three measures at pre and
posttest (n = 22), this test was severely under powered (observed power = 0.338). Given that the overall effect of the MANOVA was not significant, the analysis did not proceed to the examination of individual ANOVAs for each dependent variable (i.e, MEIM, CRS, and INS scores).

Differences based on Gender and Ethnicity

Initially hypotheses five through seven (proposing specific differences between CRS and MEIM scores based on gender and ethnic differences at pretest) were to be analyzed within the framework of an overall MANOVA. However, given that only 22 participants had complete datasets that were able to be analyzed within a MANOVA, it seems reasonable evaluate these proposed differences using all available pretest data. As such a 2 (ethnicity) x 2 (gender) between subjects ANOVA was completed to compare participants’ pretest CRS scores and a one-way (ethnicity) ANOVA was computed to compare participants’ pretest MEIM scores.

Results from the CRS ANOVA indicated that there were no significant differences based on ethnicity, gender, or their interaction (see Table 14). Additionally, the MEIM ANOVA revealed no significant differences between Latino/a and non-Latino/a students (see Table 15). In summary, hypotheses five through seven were not supported.
IV. DISCUSSION

Several problems emerged during the implementation of this study that make it difficult to interpret results or draw conclusions. A reduced sample size of participants taking both the pre and post test combined with low internal consistencies of the scales, especially the CRS, account for the major problems. Despite this difficulty, the results of this exploratory study suggest that the PYD constructs of civic responsibility, ethnic identity, and connection to nature may be related, although the exact nature of this relation is not clear. Furthermore connection to nature seems to be related to demographic factors, such as SES and age. Within civic responsibility, students displayed higher levels of civic awareness as compared to connection to community and civic efficacy, although these results are difficult to interpret due to the low internal consistencies of the CRS cluster scores.

Although these findings are intriguing, they were purely exploratory in nature and are need of replication and explication. Unfortunately, several expected effects were not evidenced concerning differences in civic responsibility and ethnic identity across demographic factors and pre/post differences in PYD attributes. However, no conclusions can be drawn from this lack of observed differences because the small sample size left statistical tests underpowered. The small sample size was directly the result of collaborative issues between the stake holders in this project and the particular contextual issues associated with the district and county. The empirical results and these collaborative issues are discussed in more detail below.
Internal Consistencies

The internal consistencies for the CRS in this study were generally somewhat lower than the values reported by Furco and colleagues (1998). Although this measure was developed using a sample of service-learning students in California, no demographic data was reported by Furco et al. Consequently, our sample may have differed in potentially important ways (ethnicity, gender, and SES) from the initial developmental sample. Most concerning and puzzling within this study is the extremely low α value for the level 2 Connection to Community cluster at pretest (α = 0.38), which is considerably lower than the value reported by Furco et al. (α = 0.79) and the value reported at posttest in this study (α = 0.79). Overall, the CRS total scores appeared to be internally consistent, but further refinement is still needed, especially to improve the internal consistency of the clusters.

Internal consistencies for the MEIM were similar to values found in other studies. Internal consistencies for the overall score have generally been found to be very good (Roberts et al., 1999), as was also the case in this study (α = 0.81 – 0.84). The somewhat lower internal consistency values for the subscales of the MEIM also have been found in other studies with young, minority participants (e.g., Reese et al., 1998).

Exploratory and Correlational Analyses

A number of exploratory, correlational analyses were conducted to compare all relevant variables within this study. Although some relations were expected to emerge, as explicates in hypothesis eight above, some of the variables within this study had never been directly compared and I had no a priori predictions about what relations might emerge. Furthermore, because of the low internal consistencies for the clusters of the CRS, results that pertain solely to the clusters
and not the CRS total score cannot be interpreted. As such, the discussion below focuses on tentative explanations for the observed relations and suggestions for further research.

**Civic Responsibility and Ethnic Identity**

Hypothesis eight was partially supported by the correlation between civic responsibility and overall ethnic identity and ethnic identity search at posttest. This relation was expected given that both civic responsibility and ethnic identity are PYD constructs and indicators of positive development in general. It is unclear why this relation emerged only at posttest. As with other differences between correlations at pre and posttest within in this study, no causality can be assigned to the R&S program because the two groups measured were composed primarily of different individuals. As such, it is difficult to distinguish between the plethora of possible explanations for these relations. Clearly the relationship between civic responsibility and ethnic identity is in need of further study.

**Civic Responsibility and SES**

The final aspect of hypothesis eight, a correlation between civic responsibility and SES, was not supported. CRS scores were not related to parents’ educational level or self-reported economic status. Although this relation has been found consistently in previous research (Hyman & Levine, 2008), the lack of a relation in this study may actually indicate a strength of the CRS. By serving as a general measure of civic responsibility, the CRS may have overcome the pitfalls of studies that focus on one or two specific civic behaviors. As such, this study may indicate that previously observed differences in civic engagement across SES categories may have been illusory disparities based on an unfairly narrow definition of civically responsible behavior.

Alternatively, the lack of relation may be in an artifact of the restricted range of SES represented in this study. Because this research was conducted within low income schools, there
may not have been enough variation in the data set for significant relations to emerge. Future research should address if relation between civic responsibility and SES consistently disappears when general measures of civic engagement are used.

*Civic Responsibility and Age*

An unexpected negative relation between civic responsibility and age was observed at pretest only. This relation is particularly difficult to interpret for several reasons. First, unlike the other measures used within this study, the measurement of the civic responsibility measure varied by age. Although elementary and middle school students rated the same statements, they used slightly different rating scales. Therefore, the linear transformation of level one (elementary) CRS scores may have influenced this correlation. Furthermore, high school students rated 24 items for agreement, as opposed to the ten items used with younger students. In summary, although scores were comparable across levels, they represented somewhat different scales.

A second difficulty with interpreting this relation is that it emerged only at pretest. At pretest some students took the high school version of the CRS. No students took this version of the CRS at posttest. Therefore this relation at pretest could be representative of a general trend toward lower scores on level three (high school) of the CRS as compared to levels one or two.

A third difficulty, which also applies to the other age relation mentioned below, is that not only is this data cross-sectional, it is also cross-contextual. In other words, older students not only differ from younger students in age, but also on geographic area, diversity level, etc. Therefore, it is difficult to make any argument that the observed relation between age and civic responsibility represents some sort of developmental difference.
Given that many theorists have proposed that civic and political development occurs primarily during adolescence (e.g., Erikson, 1968; Flanagan & Sherrod, 1998; Yates & Youniss, 1998; Youniss et al., 1997) and the admittedly flawed nature of the data from this study it seems unlikely that this relation represents an important contribution to the developmental study of civic responsibility. Nevertheless, this study did look at an age group that included some children that were slightly younger than the populations normally included in studies of the development of civic identity. Future research should address potential developmental changes in the quality and quantity of civic responsibility among younger children.

Ethnic Identity and Age

Contrary to our hypothesis, MEIM scores were not significantly correlated with age. It was surprising this relation was not displayed in our sample, given that several previous cross-sectional (Martinez & Dukes, 1997; Phinney, 1992) and longitudinal (Phinney & Chavira, 1992) studies have shown an increase in ethnic identity as youth mature. However, more recent studies have begun to uncover a complex picture concerning ethnic identity development (e.g., Pahl & Way, 2006; Umaña-Taylor, Gonzales-Backen, & Guimond, 2009).

By examining the components of ethnic identity, as well as potential mediators and moderators of ethnic identity development, research is beginning to demonstrate that a stable, linear relation between ethnic identity and age is perhaps an oversimplification of ethnic identity development. For example, Pahl and Way (2006) found that Latino/a students experienced a non-linear decrease in ethnic identity exploration during high school, while affirmation remained relatively stable. Furthermore, Pahl and Way identified discrimination as an important moderator of ethnic identity development. Additionally, Umaña-Taylor et al. (2009) used a longitudinal
design to demonstrate that all components of ethnic identity increased over time for Latina girls, but only affirmation increased in Latino boys.

This study adds to the growing body of literature that suggests the lack of a consistent increase in ethnic identity for youth overtime. Neither ethnic identity, ethnic identity search, nor ethnic identity affirmation were related to age. As was suggested by Pahl & Way’s (2006) results concerning discrimination, it seems likely that contextual factors will be more likely to predict ethnic identity development than age. In fact, it appears that age has traditionally been used as a poor approximation of potentially important development events, such as experiencing discrimination. Although these events were not measured in the current study, these results do suggest that examination of factors beyond age will likely be a more fruitful way of exploring ethnic identity development.

Connection to Nature and Age

An interesting negative relation emerged between connection to nature and age at both pre and posttest. Several theorists have suggested that younger children may have a special connection to nature (e.g., Froebel, 1887; Hart & Chawla, 1981; Sebba, 1991). Our data provides preliminary support for the idea that younger children experience a particularly strong relationship with the natural world. Other studies have found a similar relation between age and environmental concern in adults (Van Liere & Dunlap, 1980). A number of explanations have been offered for this relation, including the idea that younger people are less ingrained in the dominant social order and potential cohort effects (Malkis & Grasmick, 1977). Indeed, Phenice & Griffore (2003) speculate that human’s innate connection with nature (the “biophilia hypothesis”; Wilson, 1984) may erode overtime as they are exposed to Western culture.
This potentially strong connection with nature at young ages could be capitalized on if educators and other professionals who work with young children incorporate nature experiences into PYD programs for youth (Wilson, 1995). However, these results are preliminary and a considerable amount of research needs to both verify this finding and explore what contextual factors may be responsible for the relation between connection to nature and age.

**Connection to Nature and SES**

At posttest connection to nature was positively correlated with SES, as measured by the family’s ability to meet basic needs and father’s educational level. This finding parallels the finding that SES (specifically educational level) is also positively correlated with environmental concern in adults (Van Liere & Dunlap, 1980). Although it is unclear why this relation emerged only at posttest, there seems to be ample evidence to suggest why disadvantaged youth would have less of a connection to nature. In general, economically disadvantaged people have less access to “natural” environments. For example, Kinzig, Warren, Martin, Hope, and Katti (2005) found that median family income predicted local plant and avian biodiversity. In other words, individuals from lower SES neighborhoods had less access to rich vegetation and varieties of bird species than individuals from higher SES neighborhoods. Other studies have demonstrated similar results (Martin, Warren, & Kinzig, 2004; Mennis, 2006) indicating that SES is an important indicator of a person’s access to nature, which in turn influences connection to nature.

These general findings are bolstered by Wolch, Wilson, and Fehrenbach’s (2005) work that specifically focuses on access to natural areas for children in Los Angeles. Wolch and colleagues found that children’s access to parks varied widely as a function of ethnic minority status and family income. As expected, predominantly white and higher income areas had vastly superior access to parks. Furthermore, Wolch et al. noted that current funding trends in Los
Angeles are perpetuating these inequalities, rather than alleviating them. Conditions are particularly bad for Latino/a youth, with over 70% having no easy access to park facilities.

The situation in Los Angeles is indicative of a larger national issue, so-called “environmental racism”, or, perhaps more aptly, “environmental classism.” Youth and others in economically disadvantaged areas bear the brunt of environmental pollution while receiving few of the benefits of preserved areas, such as parks. This study provides preliminary evidence that this lack of access may also be affecting psychological variables, such as connection to nature. Given the purported benefits of contact with natural environments, this is an extremely disturbing state of affairs.

Civic Responsibility Survey Clusters

At both pre and posttest Civic Awareness cluster scores were significantly greater than scores on the other CRS clusters. However, it is difficult to interpret these results given the low internal consistencies for these clusters. The differences may reflect higher levels of civic awareness as compared to other aspects of civic responsibility within our sample, a property of the CRS, or an artifact produced by an unreliable scale. Because no normative data have been published for the CRS, it is impossible to know if this is a typical result or a unique finding within the current sample. Establishment of norms for the CRS would greatly increase its utility in future PYD studies. Furthermore, more measurement development studies are necessary to determine if the CRS in its current form is a valid research tool (and for what populations the instrument would be useful).

Pre/Post Differences
No differences were detected from pre to post test on the constructs of civic responsibility, ethnic identity, or connection to nature. Several possible explanations exist for this observed lack of change. However, it is difficult to rule out several competing explanations.

One possible explanation for the lack of effect is a poor quality of programming. Previous research has shown that certain “best practices” are essential to effective PYD programs (Catalano et al., 2004; Center for Prevention Research and Development, 2006). Catalano and colleagues outline six characteristics of effective PYD programs: addressing multiple youth developmental constructs, measuring positive and negative youth outcomes, using a structured curriculum, meeting frequently and over an extended period, assuring quality program implementation, and serving diverse youth. Unfortunately this study fell short of these standards on several counts. Within this study only three youth development outcomes were measured (Catalano et al. found that effective programs measure at least five) and none of these were problem outcomes. Because R&S groups were free to set their own agenda concerning what projects they would complete the curriculum was generally unstructured. Also, youth did meet for an extended period of time, but not quite the nine months that Catalano et al. found to be characteristic of effective PYD programs. Furthermore, because only basic descriptive data about programming was provided by the groups it is difficult to discern if quality implementation was achieved. Future investigations should acquire more qualitative and quantitative process data about the actual programming being provided, using measures such as Eyler & Giles’ (1999) Service Experiences Survey.

Additionally, this study included participants of lower SES than many previous investigations of PYD programs. Just as some efficacious treatment programs fail to replicate
their positive results when implemented with “real world” clients in “real world” settings, the benefits of R&S may have been less evident with this sample.

Furthermore, other studies of PYD within environmental service learning programs have failed to find increases in PYD attributes, at least immediately after the program. For example, Wolf and EarthCorps (2007) evaluated the effects of an urban forestry program among minority youth. They failed to find increases across a broad range of PYD attributes, including civic action and environmental identity. Wolf and EarthCorps suggest that a single program may not be sufficient to affect some PYD attributes, and that longer term strategies that engage youth throughout their childhood are necessary to foster PYD. This sentiment is echoed by Connell, Gambone, & Smith (n.d.) who caution that youth cannot be “programmed” or “serviced” into healthy development, but rather that programs play an interactive role with other aspects of youth’s context including caregivers, neighbors, and employers.

Beyond the possibility that R&S was simply ineffective, there remain several theoretical reasons that no change may have occurred within the measured variables. Some theorists have contended that ethnic identity development occurs after a person comes into contact with racial/ethnic discrimination (e.g., Cross, 1971). Given that R&S groups would not have actively created an opportunity for students to experience discrimination (they likely fostered an atmosphere of sensitivity toward cultural differences, given that R&S is an international organization) it is not surprising that ethnic identity did not significantly increase after participating in an R&S group.

In this way ethnic identity is an exception within the PYD literature. Most PYD assets are thought to increase with positive experiences. However, ethnic identity is posited to increase after a negative experience (discrimination). Therefore, it may be prudent for program
developers and researchers to investigate what, if any, positive experience can increase ethnic identity in youth. Also, one could investigate if less harsh examples of discrimination, such as creating a drama that displayed discrimination or exposing youth to historical examples of discrimination (such as visiting an internment camp) could increase ethnic identity.

There are also reasons to believe that connection to nature would not improve given the type of experiences that these R&S groups conducted. Investigations have shown that connection to nature increases after in vivo exposure to natural scenes (e.g., taking a nature hike; Schultz & Tabanico, 2007). However, none of the R&S groups within this study noted that type of activity. Given the urban setting of this investigation, it would have been logistically difficult for groups to visit natural settings that were relatively undisturbed by human development. As such, many groups completed projects that included environmentally responsible behavior (e.g., recycling, selling reusable water bottles), but did not include access to nature. Therefore, though connection to nature and environmentally responsible behavior are related, the directionality of this relation may flow from increased connection to nature to environmentally responsible behavior. This study essentially tested if environmentally responsible behavior could foster a connection to nature, a hypothesis that was not supported by the data. However, other studies of PYD programs that have incorporated nature experiences have show mixed results with some studies showing increases in environmental identity (Johnson et al., 2009) and others showing null results (Wolf & EarthCorps, 2007).

Finally, perhaps the simplest explanation for the lack of effects observed in this study was the small sample size. Although over 100 participants filled out a survey at one point in time, only 22 participants completely filled out all three measures for both pre and posttest. This small sample size left the statistical tests underpowered.
Civic Responsibility and Gender

At pretest no significant differences were found in civic responsibility between males and females. This seems to contradict previous research that has found a trend of higher levels of civic responsibility for women (da Silva et al., 2004; Dávila & Mora, 2007; Flanagan et al., 1998; Hyman & Levine, 2008; Rosenthal et al., 1998). However, close examination of results from these studies do reveal some variation. For example, da Silva and colleagues found that girls had higher level of community civic responsibility, but there were no significant gender differences for political civic responsibility. Because this study used only a single measure of civic responsibility, it may have been unable to detect potential gender differences in other areas of civic responsibility. Furthermore, Flanagan et al.'s cross-national study found that the females did not have higher levels of civic responsibility in two of the seven countries studied. Unfortunately no Latin American countries were used within this study, making it difficult to assess if these proposed gender differences might have been less likely in our primarily Latino/a sample.

In general, da Silva et al. (2004) and Flanagan et al. (1998) suggest that observed gender differences are the result of different socialization histories for males and females. Specifically, they suggest that females are given more encouragement to participate in civic activities and generally display higher levels of altruism and empathy. These variables were not assessed in this study, but it is possible that within this specific sample gender differences across these variables were not present. In other words, within urban, low-income primarily Latino/a communities gender differences concerning encouragement of and attitudes surrounding civic responsibility may not be present. Further research is necessary to further examine this finding.

Civic Responsibility and Ethnicity
Contrary to hypothesis six, no differences were evidenced in civic responsibility based on ethnicity. Although previous research has displayed relatively lower levels of civic responsibility for Latino/a individuals (Bedolla, 2000; Bogard & Sherrod, 2008; Dávila & Mora, 2007; Foster-Bey, 2008; Hyman & Levine, 2008; Torney-Purta et al., 2006, 2007), there are several possible explanations for the lack of differences displayed within this study. First, because of the small number of students that were not Latino/a within this study, ethnicity was dichotomized as either Latino/a or non-Latino/a. This rough categorization created a situation in which the two groups that were being compared both possessed a significant amount of within-group variability. Therefore, between group differences may have been particularly difficult to detect within this study.

A second possible reason for the lack of observed differences within this study is the method of measuring civic responsibility. Whereas other studies of civic responsibility have focused on specific behaviors (e.g., hours spent volunteering), this study used a more general measure of civic responsibility. Given that different ethnic groups commonly engage in different civic behaviors (Hyman & Leveine, 2008), a more general measurement of civic responsibility may cause ethnic differences to dissipate.

Finally, considering that all participants within this study shared a similar context at the community level (urban and low-income) differences may have been less pronounced than in national studies (e.g., Torney-Purta et al., 2007). Results of this study cannot definitively rule out any of these possible explanations. Future research could directly examine which of these explanations is most plausible.

*Ethnic Identity and Ethnicity*
Hypothesis seven, which stated that Latino/a students would have higher levels of ethnic identity achievement at pretest, was not supported. Although previous studies have shown that ethnic identity is typically stronger within ethnic minorities (e.g., Phinney, 1992), the Latino/a vs. non-Latino/a dichotomization used within this study did not approximate a replication of this finding. The non-Latino/a group at pretest was primarily composed of ethnic minority youth (see Table 5). Therefore it is not overly-surprising that no significant differences were found between the two groups concerning ethnic identity.

**Barriers to Collaboration**

Despite the information gained through this study, this project failed to reach its full potential. Initially, R&S staff and researchers expected that this study would evaluate service-learning programs in 13 schools and would include over 500 student participants. Clearly, the actual data collected falls well short of this goal. Therefore, it is pertinent to examine the nature of the collaboration between university researchers, R&S personnel, and school staff, which may have contributed to some of the difficulties experienced during this project.

**Data Collection**

Several areas of difficulty were identified with regards to data collection for this study. The largest obstacle was a lack of buy-in from individual groups. Although 13 groups were funded by this project, less than half (n = 5) groups agreed to participate in this study. Schools who declined to participate listed a range of issues including a shortened school year in LAUSD, the language difficulty of the survey, the length of time necessary to complete the survey, and difficulty understanding some of the concepts in the survey (particularly “ethnicity” and “nature”). Unfortunately, we have no way of knowing if these groups differed in important ways from the groups that decided to participate.
A second issue was that two schools completed the pretest, but produced little or no usable posttest data. The first school, the School for the Visual Arts and Humanities, refused to complete the posttest data collection. This refusal was not the result of problems with the study per se, but rather represented difficulties between this group and the R&S organization in general. A second school, LAAMS, completed the pre and posttest, but only one student completed the surveys at both time points. This was the result of shifting club membership due to changes in students’ schedules. This result could have possibly been avoided if the researchers and R&S had possessed a better understanding of the context of each individual R&S group before and during data collection.

A third issue revolved around Emerson Middle School. Although this group agreed to participate in pre and posttest data collection, pretest data is not available for this site. It remains unclear where the breakdown in the data management process occurred: collection, transport, or storage. Nevertheless, this data was not available for analysis.

All of these issues represent significant setbacks for this project: 81 participants took either the pre or posttest, but only 31 completed both the pre and post test. This loss of valuable information was likely a manifestation of the social context of this study and larger issues between three of the major stakeholders in this project: the researchers, R&S, and the individual schools/groups. Therefore, it is valuable to examine this context and these relationships.

*Difficulties of Working within LAUSD*

As previously mentioned, LAUSD is currently plagued by a range of problems including low test scores, a multimillion dollar deficit, and forced furloughs and layoffs for teachers. Understandably this has lead to feelings of animosity and organized protests among LAUSD
Such a climate led many teachers to decline to participate in any programs that were viewed as extraneous to their employment, including this study.

Furthermore, deeper social issues make working within LAUSD uniquely challenging. Specifically, gang violence hindered the implementation of R&S programming and data collection in several of the schools that were funded by the Weingart Foundation grant. Given that there are approximately 250 active gangs in Los Angeles with over 26,000 members (Los Angeles Police Department, n.d.), it is likely that gang activity will remain an issue to those wishing to conduct research within low-income LAUSD schools.

**Partnership Issues: R&S and The University of Mississippi**

Begun, Berger, Otto-Salaj, & Rose (2010) have identified four general areas that are important for collaborations between university researchers and community organizations: technology exchange, a longitudinal perspective, knowledge of partners, and contracting/budgetary issues. All of these areas played a critical role within this project.

Technology exchange, referring to the bi-directional sharing of information, was facilitated throughout the project. The R&S staff was involved in shaping the content and length of the original surveys. After survey administration began, feedback from R&S staff further refined the content of the survey as well as the administration process. For example, this study initially sought to examine additional constructs, such as self-efficacy, which were removed from the survey packet after R&S staff expressed concern over the length of the survey.

A longitudinal perspective, or a long-standing and ongoing collaboration, also characterized the relationship between R&S and University of Mississippi researchers. R&S has been working with University of Mississippi researchers for 11 years and the collaboration is ongoing. Specifically, the lead researcher on this project also collaborated on several other
projects throughout the Weingart grant period, creating the impression that this project was not a “one time deal.”

Furthermore, the longstanding collaboration between R&S and the university allowed for each entity to understand (to a certain degree) the motives and professional culture of the other. For example, R&S staff understood the necessity of institutional review board approval when conducting research, while researchers recognized that R&S staff was primarily concerned with providing programming, not conducting program evaluations.

Perhaps the area that was most difficult concerning the collaboration between R&S and researchers was contracting/budgetary concerns. Although program evaluation was part of the Weingart grant, few funds were set aside for research. The researchers themselves received no compensation for their work on this project, and funds were often limited when trying to complete basic tasks, such as funding R&S staff to drive to schools to administer the surveys.

Though these monetary limitations were frustrating for both researchers and R&S staff, they are understandable given R&S’s goals and the current economic climate. First and foremost, R&S is a PYD organization, not a research institute. From their perspective, it makes good sense to divert most funding to programming, especially given that researchers were willing to design and conduct this project without monetary compensation. Furthermore, the current economic decline has led to reduced donations to non-profit organizations (Giving USA, 2010), which in turn leads to a lack of excess funds that might be available in more prosperous times.

Beyond these budgetary concerns, the absence of a contract clearly specifying the nature of the partnership between R&S and researchers caused some confusion throughout the project. Ross et al. (2010) suggest specifically outlining the responsibilities of each party in a
memorandum of understanding (MOU) or similar agreement. R&S and researchers are currently drafting a MOU to facilitate future collaborations.

**Partnership Issues: Working with LAUSD Staff**

Despite these contracting/budgetary constraints the relationship between R&S and researchers could generally be described as collaborative, congenial, and productive. Unfortunately, these same descriptors could not be used to describe the relationship between these entities and the school system. R&S staff’s relationships with school administrators and teachers were somewhat strained throughout this project. This is not surprising given the desperate economic situation engulfing LAUSD. Many educators were wary of engaging in extra projects (i.e., R&S) while their salaries were being reduced.

However stressed the relationship between school staff and R&S, this situation was preferable to the nonexistent relationship between researchers and school staff. Although a conference call was arranged to introduce teachers to a researcher, no teachers participated in the call. Although this should have been a signal to the researchers to step back and focus on engaging school personnel, the research project forged forward at the beginning of the school year. Without any flow of communication between researchers and school personnel, there was no opportunity for trust to be developed, which is a vital ingredient for researcher/educator collaboration, especially in urban schools (Barnett, Anderson, Houle, Higginbotham, & Gatling, 2010).

Moreover, schools correctly perceived this relationship as representing a one-way flow of information: data flowed from the school to the researchers, but the researchers shared no information or expertise with the schools. This set up an inherently unequal relationship that did not foster a productive collaboration. The sharing of research results is an important part of
successful university-community partnerships (Ross et al., 2010), but no plan was developed to share research results with school staff. Ultimately, this communication failure may be primarily responsible for the high number of schools that failed to complete this research project.

Furthermore, there were no incentives for groups to participate in the research. Powers (2007) has identified incentives as one of the most important features of successful collaborations between schools and researchers. Both tangible incentives, such as money or schools supplies, and intangible incentives, such as assistance or training in grant writing, can be valuable enticements to increase school participation in research. Although grant funding was part of this project, the funds were not contingent upon participating in research.

The issues described here are certainly not limited to this project. Botvin (2004) cites a number of potential obstacles to implementing programs in schools including “a lack of training and support, limited resources, classroom overcrowding, classroom management and disciplinary problems, low teach morale and burnout, multiple competing demands, and insufficient time due to an increased emphasis on basic academic areas and preparation for standardized testing” (p. 70). Clearly this project serves as another example of how these obstacles can hinder successful collaborations with schools. More research is necessary to better understand and overcome these significant obstacles.

Two research models may be useful in conducting future research with ethnically diverse and economically marginalized youth: student voice research and participatory action research (PAR; Rodriguez & Brown, 2009). Student voice research explicitly elicits and responds to youth’s unique perspectives on their experiences in programming (Rodriguez & Brown, 2009). Within this study that would have required meeting with students and incorporating their
viewpoints into both R&S programming (which should have been accomplished through R&S focus on youth-led initiatives) and the research design.

PAR refers to a research methodology that explicitly includes those affected by the phenomena of interest as equal co-researchers into programs designed to benefit them (Rodriguez & Brown, 2009). Within this study, a PAR approach would have included incorporating student and teacher ideas as valid and important insights into the process of PYD, and allowing these opinions to help shape the research. Both student voice research and PAR are important research methodologies to include in future investigations with marginalized youth (Rodriguez & Brown, 2009).

Strengths and Limitations

One of the strongest points of this study’s design is its high external validity or real world applicability. Participants of this study are representative of the kind of students that many PYD programs are designed to help: socially and economically disadvantaged youth. This study presents descriptive data on the levels of and relations between several PYD constructs. Although this study did not allow for casual inferences to be made about these relations, it should serve to stimulate future PYD research.

One of the goals of this study was to provide valuable information to those who design and implement PYD programs for diverse and/or at-risk youth. However, a number of limitations severely hampered this study’s ability to provide this information. Although this study did not elucidate much concerning the effectiveness of R&S, it did provide descriptive information concerning the how partnerships between researchers, community organizations, and schools can work (and not work). Specifically concerning the relationship between R&S and the University
of Mississippi, this project highlighted the need for more emphasis being placed on research within the grant process.

Despite the contributions of study, it also possessed several crucial weaknesses that severely reduced the conclusions that can be drawn from this data. One of the study’s chief weaknesses is its lack of internal validity or experimental control. Several threats to internal validity cannot be ruled out first. First and foremost was the lack of a control group. Because R&S staff members were primarily concerned with outcomes for R&S group members, they focused on measuring outcomes within R&S youth. Given the economic constraints on R&S and LAUSD they did not think it was feasible to measure a control group of youth who were not involved in R&S. Of course, including these children within the study would have greatly improved the study’s ability to detect the potential benefits of R&S programming. In the future, additional education for R&S staff on the scientific benefits of including control or pseudo-control groups may increase their willingness to measure such groups.

An additional threat to internal validity is poor explication of the treatment condition. Even if causal conclusions could have been derived from this study, it would have been difficult to define what was (or was not) effective. Because R&S is designed to be youth-led, there were few standard components that could be defined for the program. Furthermore, no measures were included to assess whether these few shared components were present (e.g., behavioral observations of group meetings that confirm initiatives were actually “youth-led”). Although some basic qualitative data about each program is included in the program descriptions above, this data does of poor job of precisely defining what occurred within a given group and describing the richness of each group’s experience. Future research should attempt to gather both
more objective quantitative data as well as richer qualitative data concerning the activities of PYD programs.

Finally, the most glaring limitation of this study concerns statistical conclusion validity (a concept closely related to internal validity; Shadish, Cook, & Campbell, 2002): the lack of statistical power for the tests of pre/post differences within R&S members. The extremely underpowered nature of this test prevents any conclusions to be drawn concerning the effects of the R&S program.

Despite the limitations, results from this study will hopefully inspire future research to focus on PYD. Although the study fell short of some of its stated goals, it does add to the research base on an understudied population, namely low-income and ethnic minority youth in the U.S., and highlights difficulties in the process of collaborative research with diverse constituencies.
V. CONCLUSIONS

Overall, these results illustrate a complex picture of PYD. Some previously unstudied relations between PYD constructs and demographic factors emerged (e.g., connection to nature and SES) while other established relations did not emerge (e.g., civic responsibility and SES). Some PYD constructs were related (civic responsibility and ethnic identity) while others were not (ethnic identity and connection to nature). Thus, this study supports the idea that PYD is a multi-faceted concept that is in need of further study to explicate the relations between the many diverse constructs falling under the heading of PYD. Applied developmental science is perhaps the ideal vehicle for such study.

At the same time, this study elucidates some of the difficulties of applied development work. Collaborations between different entities with vastly different goals, constraints, and resources can be arduous and can seriously limit the scientific merit of such investigations. This is not to say that these collaborations are not worthwhile, but rather that such work takes discipline, effort, and forethought. Even in the best of circumstances, unforeseen difficulties can significantly hinder a study, as was the case in the current investigation.

Furthermore, this study indicates that further instrument refinement is necessary for the applied study of PYD. Some measures displayed questionable reliability (e.g., the CRS) that limits the generalizability of the conclusions of this study. Additionally, some concepts from more psychometrically validated measures (the MEIM and the INS) were difficult for
participants to understand and may not have been ecologically valid for this sample. Therefore, it is important for researchers to develop well-designed instruments that are valid across a wide range of contexts for general principles of PYD to be elucidated.

Though measurement and other difficulties reduced the ability of this study to reach its full potential when assessing the effects of a real-world service learning program on several PYD constructs, it does serve as an important stimulus for further PYD research. Constructs such as civic responsibility, ethnic identity, and connection to nature can be important in youths’ lives and should continue to be investigated within the PYD framework. Furthermore, PYD must continue to be studied within at-risk populations, such as low-income and ethnic minority youth. These efforts may be difficult, as was the case in this study, but the potential benefits for both the scientific community and the general public are well worth the effort.
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Table 1
Distribution Across Demographic Factors at Pretest

<table>
<thead>
<tr>
<th>Gender</th>
<th>Visual Arts</th>
<th>Foshay</th>
<th>West Hollywood</th>
<th>LAAMS</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>7 (41.2)</td>
<td>8 (34.8)</td>
<td>13 (48.1)</td>
<td>2 (11.8)</td>
<td>30 (35.7)</td>
</tr>
<tr>
<td>Female</td>
<td>10 (58.8)</td>
<td>15 (65.2)</td>
<td>14 (51.9)</td>
<td>15 (88.2)</td>
<td>54 (64.3)</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>Asian</td>
<td>2 (11.8)</td>
<td>1 (4.3)</td>
<td>4 (14.8)</td>
<td>7 (8.3)</td>
</tr>
<tr>
<td></td>
<td>Hispanic</td>
<td>13 (76.5)</td>
<td>19 (82.6)</td>
<td>15 (55.6)</td>
<td>11 (64.7)</td>
</tr>
<tr>
<td></td>
<td>White</td>
<td>1 (4.3)</td>
<td>4 (14.8)</td>
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<td>5 (6.0)</td>
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<tr>
<td></td>
<td>Mixed</td>
<td>2 (11.8)</td>
<td>1 (4.3)</td>
<td>3 (11.1)</td>
<td>6 (7.1)</td>
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<tr>
<td></td>
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<td>1 (4.3)</td>
<td>1 (3.7)</td>
<td>6 (35.3)</td>
<td>8 (9.5)</td>
</tr>
</tbody>
</table>

Note. Percentage shown in parentheses.
Table 2

Distribution Across Demographic Factors at Posttest

<table>
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<tr>
<th>Gender</th>
<th>School</th>
<th>N</th>
<th>Emerson</th>
<th>Foshay</th>
<th>West Hollywood</th>
<th>LAAMS</th>
<th>Total</th>
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</thead>
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<tr>
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<td>16</td>
<td>8 (50.0)</td>
<td>6 (28.6)</td>
<td>11 (61.1)</td>
<td>4 (80.0)</td>
<td>29 (48.3)</td>
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<tr>
<td>Female</td>
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<td>21</td>
<td>8 (50.0)</td>
<td>15 (71.4)</td>
<td>7 (38.9)</td>
<td>1 (20.0)</td>
<td>31 (51.7)</td>
</tr>
<tr>
<td>Asian</td>
<td></td>
<td></td>
<td>3 (18.8)</td>
<td>1 (4.8)</td>
<td>3 (16.7)</td>
<td></td>
<td>7 (11.7)</td>
</tr>
<tr>
<td>Black</td>
<td></td>
<td></td>
<td>3 (18.8)</td>
<td></td>
<td>1 (5.6)</td>
<td></td>
<td>4 (6.7)</td>
</tr>
<tr>
<td>Hispanic</td>
<td></td>
<td>18</td>
<td>5 (31.3)</td>
<td>20 (95.2)</td>
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<td>5 (100.0)</td>
<td>39 (65.0)</td>
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<td>White</td>
<td></td>
<td></td>
<td>2 (12.5)</td>
<td></td>
<td>2 (11.1)</td>
<td></td>
<td>4 (6.7)</td>
</tr>
<tr>
<td>Mixed</td>
<td></td>
<td></td>
<td>1 (6.3)</td>
<td></td>
<td>3 (16.7)</td>
<td></td>
<td>4 (6.7)</td>
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<tr>
<td>Missing</td>
<td></td>
<td></td>
<td>2 (12.5)</td>
<td></td>
<td></td>
<td></td>
<td>2 (3.3)</td>
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</tbody>
</table>

Note. Percentage shown in parentheses.
Table 3
Distribution Across Socioeconomic Indicators at Pretest

<table>
<thead>
<tr>
<th>Economic Status</th>
<th>Visual Arts</th>
<th>Foshay</th>
<th>West Hollywood</th>
<th>LAAMS</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do not have</td>
<td>1 (3.7)</td>
<td>1 (1.2)</td>
<td>7 (41.2)</td>
<td>38 (45.2)</td>
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</tr>
<tr>
<td>Usually have</td>
<td>8 (47.1)</td>
<td>8 (34.8)</td>
<td>15 (55.6)</td>
<td>38 (45.2)</td>
<td></td>
</tr>
<tr>
<td>Always have</td>
<td>9 (52.9)</td>
<td>13 (56.5)</td>
<td>6 (22.2)</td>
<td>38 (45.2)</td>
<td></td>
</tr>
<tr>
<td>More than enough</td>
<td>2 (8.7)</td>
<td>5 (18.5)</td>
<td>7 (8.3)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Father Ed.</th>
<th>Visual Arts</th>
<th>Foshay</th>
<th>West Hollywood</th>
<th>LAAMS</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary</td>
<td>7 (41.2)</td>
<td>8 (34.8)</td>
<td>3 (11.1)</td>
<td>2 (11.8)</td>
<td>20 (23.8)</td>
</tr>
<tr>
<td>High school</td>
<td>2 (11.8)</td>
<td>6 (26.1)</td>
<td>1 (3.7)</td>
<td>4 (23.5)</td>
<td>13 (15.5)</td>
</tr>
<tr>
<td>Some college</td>
<td>5 (21.7)</td>
<td>1 (3.7)</td>
<td>6 (7.1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>College graduate</td>
<td>1 (5.9)</td>
<td>2 (8.7)</td>
<td>2 (7.4)</td>
<td>5 (6.0)</td>
<td></td>
</tr>
<tr>
<td>Graduate degree</td>
<td>2 (7.4)</td>
<td>2 (2.4)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do not know</td>
<td>7 (41.2)</td>
<td>2 (8.7)</td>
<td>17 (63.0)</td>
<td>10 (58.8)</td>
<td>36 (42.9)</td>
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<tr>
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<td>1 (3.7)</td>
<td>1 (5.9)</td>
<td>2 (2.4)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Mother Ed.</th>
<th>Visual Arts</th>
<th>Foshay</th>
<th>West Hollywood</th>
<th>LAAMS</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>1 (5.9)</td>
<td></td>
<td></td>
<td></td>
<td>1 (1.2)</td>
</tr>
<tr>
<td>Elementary</td>
<td>4 (23.5)</td>
<td>8 (34.8)</td>
<td>3 (11.1)</td>
<td>3 (17.6)</td>
<td>18 (21.4)</td>
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<tr>
<td>High school</td>
<td>4 (23.5)</td>
<td>10 (43.5)</td>
<td>1 (3.7)</td>
<td>5 (29.4)</td>
<td>20 (23.8)</td>
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<tr>
<td>Some college</td>
<td>2 (11.8)</td>
<td>2 (8.7)</td>
<td>2 (7.4)</td>
<td>1 (5.9)</td>
<td>7 (8.3)</td>
</tr>
<tr>
<td>College graduate</td>
<td>1 (5.9)</td>
<td>3 (13.0)</td>
<td>2 (7.4)</td>
<td>6 (7.1)</td>
<td></td>
</tr>
<tr>
<td>Graduate degree</td>
<td>1 (5.9)</td>
<td>4 (14.8)</td>
<td>1 (5.9)</td>
<td>6 (7.1)</td>
<td></td>
</tr>
<tr>
<td>Do not know</td>
<td>4 (23.5)</td>
<td>13 (48.1)</td>
<td>6 (35.3)</td>
<td>23 (27.4)</td>
<td></td>
</tr>
<tr>
<td>Missing</td>
<td>2 (7.4)</td>
<td>1 (5.9)</td>
<td>3 (3.6)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. Percentage shown in parentheses.
Table 4

Distribution Across Socioeconomic Indicators at Posttest

<table>
<thead>
<tr>
<th>Economic Status</th>
<th>Emerson</th>
<th>Foshay</th>
<th>West Hollywood</th>
<th>LAAMS</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Usually have</td>
<td>2 (12.5)</td>
<td>11 (52.4)</td>
<td>8 (44.4)</td>
<td>2 (40.0)</td>
<td>23</td>
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<td>9 (42.9)</td>
<td>3 (16.7)</td>
<td>3 (60.0)</td>
<td>20</td>
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<td>More than enough</td>
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<td>1 (3.7)</td>
<td>7 (38.9)</td>
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<tr>
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<th>High school</th>
<th>Some college</th>
<th>College graduate</th>
<th>Graduate degree</th>
<th>Do not know</th>
</tr>
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<td>2 (11.1)</td>
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<td></td>
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<td>6 (28.6)</td>
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<td>2 (40.0)</td>
<td>10 (16.7)</td>
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<tr>
<td>Some college</td>
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<td>2 (9.5)</td>
<td>2 (11.1)</td>
<td>2 (40.0)</td>
<td>9 (15.0)</td>
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<tr>
<td>College graduate</td>
<td>2 (12.5)</td>
<td>1 (4.8)</td>
<td>1 (5.6)</td>
<td></td>
<td>4 (6.7)</td>
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<tr>
<td>Graduate degree</td>
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<td>2 (11.1)</td>
<td></td>
<td></td>
<td>7 (11.7)</td>
<td></td>
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<tr>
<td>Do not know</td>
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<td>5 (23.8)</td>
<td>10 (55.6)</td>
<td>1 (20.0)</td>
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<table>
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<th>Some college</th>
<th>College graduate</th>
<th>Graduate degree</th>
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<td></td>
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</tr>
<tr>
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<td>9 (42.9)</td>
<td>3 (16.7)</td>
<td>1 (20.0)</td>
<td>13 (21.7)</td>
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<tr>
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<td>2 (11.1)</td>
<td>3 (60.0)</td>
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<tr>
<td>Some college</td>
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<td>2 (11.1)</td>
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<td>5 (8.3)</td>
<td></td>
<td></td>
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<tr>
<td>College graduate</td>
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<td>9 (15.0)</td>
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<tr>
<td>Graduate degree</td>
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<td>2 (11.1)</td>
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<td>7 (11.7)</td>
<td></td>
<td></td>
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<tr>
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<td>5 (27.8)</td>
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<td>13 (21.7)</td>
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Note. Percentage shown in parentheses.
### Table 5

Descriptive Information Across Schools

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<tr>
<th>Level</th>
<th>Visual Arts</th>
<th>Foshay</th>
<th>LAAMS</th>
<th>Emerson</th>
<th>West Hollywood</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Non-elective science class</td>
<td>Elective environmental science class</td>
<td>Extracurricular club</td>
<td>Extracurricular club</td>
<td>Non-elective classroom</td>
</tr>
<tr>
<td>Project(s)</td>
<td>Recycling program</td>
<td>Community mural, recycling, school garden</td>
<td>Native garden, Japanese internment camp</td>
<td>Water audit, bottles, and filters</td>
<td>Water audit and walk</td>
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</table>
### Table 6

Mean and Standard Deviations for Pretest Variables

<table>
<thead>
<tr>
<th>School</th>
<th>Visual Arts</th>
<th>Foshay</th>
<th>West Hollywood</th>
<th>LAAMS</th>
<th>Total</th>
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<tbody>
<tr>
<td>N</td>
<td>17</td>
<td>23</td>
<td>27</td>
<td>17</td>
<td>84</td>
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<tr>
<td>Age</td>
<td>16.94 (0.66)</td>
<td>16.04 (1.49)</td>
<td>11.04 (0.59)</td>
<td>12.76 (0.97)</td>
<td>13.95 (2.66)</td>
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<tr>
<td>Grade</td>
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<td>10.74 (1.29)</td>
<td>5.73 (0.45)</td>
<td>7.47 (0.87)</td>
<td>8.69 (2.60)</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level 1 Conn.</td>
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<td></td>
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</tr>
<tr>
<td>Level 1 Aware</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Efficacy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level 2 CRS</td>
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<td>4.95 (0.34)</td>
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<td>4.40 (0.62)</td>
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<td>5.38 (0.39)</td>
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<td>5.31 (0.64)</td>
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<tr>
<td>Efficacy</td>
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<td></td>
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<tr>
<td>Level 3 CRS</td>
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<td>3.83 (0.88)</td>
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<td>4.16 (0.97)</td>
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<tr>
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<td>3.67 (0.94)</td>
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<tr>
<td>Efficacy</td>
<td>MEIM</td>
<td>Search</td>
<td>Belong</td>
<td>INS</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2.85 (0.40)</td>
<td>2.68 (0.49)</td>
<td>2.87 (0.42)</td>
<td>4.25 (1.34)</td>
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<tr>
<td></td>
<td>3.09 (0.37)</td>
<td>2.88 (0.41)</td>
<td>2.83 (0.42)</td>
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<td>3.07 (0.38)</td>
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<td>4.77 (1.45)</td>
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<td>3.14 (0.41)</td>
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<td>3.19 (0.45)</td>
<td>4.19 (1.47)</td>
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</tr>
</tbody>
</table>

Note. CRS = Civic Responsibility Survey total score; Conn. = Connection to Community cluster; Aware = Civic Awareness cluster; Efficacy = Civic Efficacy cluster; MEIM = Multigroup Ethnic Identity Measure total score; Search = Ethnic Identity Search factor; Belong = Affirmation, Belonging, Commitment factor; INS = Inclusion of Nature in Self scale.
Table 7

Mean and Standard Deviations for Posttest Variables

<table>
<thead>
<tr>
<th>School</th>
<th>Emerson</th>
<th>Foshay</th>
<th>West Hollywood</th>
<th>LAAMS</th>
<th>Total</th>
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<tr>
<td>N</td>
<td>16</td>
<td>21</td>
<td>18</td>
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<td>60</td>
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<td>12.31 (1.25)</td>
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<td>11.33 (0.69)</td>
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<td>13.44 (2.53)</td>
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<td>Grade</td>
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</tr>
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<td>Level 1 Conn.</td>
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<tr>
<td>Level 1 Aware</td>
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</tr>
<tr>
<td>Level 1 Efficacy</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
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<td>Level 2 CRS</td>
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<td>4.33 (0.87)</td>
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<td>4.30 (1.09)</td>
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<td>5.14 (0.74)</td>
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<tr>
<td>MEIM</td>
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<td>3.16 (0.39)</td>
<td>3.08 (0.45)</td>
<td>3.23 (0.39)</td>
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</tr>
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<td>2.89 (0.48)</td>
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<td>2.88 (0.55)</td>
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<td>4.94 (1.48)</td>
<td>5.25 (0.96)</td>
<td>4.38 (1.52)</td>
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</table>

Note. CRS = Civic Responsibility Survey total score; Conn. = Connection to Community cluster; Aware = Civic Awareness cluster; Efficacy = Civic Efficacy cluster; MEIM = Multigroup Ethnic Identity Measure total score; Search = Ethnic Identity Search factor; Belong = Affirmation, Belonging, Commitment factor; INS = Inclusion of Nature in Self scale.
### Table 8

Internal Consistencies (Cronbach’s α) for the Civic Responsibility Survey

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<td></td>
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<td>Tot 0.64</td>
<td>Con 0.53</td>
<td>Awa 0.73</td>
<td>Eff 0.55</td>
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<td>Con 0.74</td>
<td>Awa 0.79</td>
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<td>Tot 0.82</td>
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<td>Awa 0.49</td>
<td>Eff 0.65</td>
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<td>Con 0.86</td>
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Note. Tot = Total Civic Responsibility Survey score; Con = Connection to Community cluster score; Awa = Civic Awareness cluster score; Eff = Civic Efficacy cluster score; * = no data available.
Table 9

Internal Consistencies (Cronbach’s α) for the Multigroup Ethnic Identity Measure

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<td>Affirmation, Belonging, Commitment</td>
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<td>.30*</td>
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<td>7. Aware</td>
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<tr>
<td>8. Efficacy</td>
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<td>9. MEIM</td>
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<tr>
<td>10. Search</td>
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<td>11. Belong</td>
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<td>12. INS</td>
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Note. * = p < 0.05; ** = p < 0.01; Econ. = economic status; Father Ed. = father’s educational level; Mother Ed. = mother’s educational level; CRS = Civic Responsibility Survey total score; Conn. = Connection to Community cluster; Aware = Civic Awareness cluster; Efficacy = Civic Efficacy cluster; MEIM = Multigroup Ethnic Identity Measure total score; Search = Ethnic Identity Search factor; Belong = Affirmation, Belonging, Commitment factor; INS = Inclusion of Nature in Self scale.
Table 11

Bivariate Correlations at Posttest

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<th>5</th>
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<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
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<td>-.27</td>
<td>.10</td>
<td>.08</td>
<td>.14</td>
<td>.03</td>
<td>.86**</td>
<td>.51**</td>
<td></td>
</tr>
<tr>
<td>12. INS</td>
<td>-.41**</td>
<td>.35**</td>
<td>.41*</td>
<td>.18</td>
<td>.24</td>
<td>.27*</td>
<td>.15</td>
<td>.29*</td>
<td>.00</td>
<td>.13</td>
<td>-.07</td>
</tr>
</tbody>
</table>

Note. * = p < 0.05; ** = p < 0.01; Econ. = economic status; Father Ed. = father’s educational level; Mother Ed. = mother’s educational level; CRS = Civic Responsibility Survey total score; Conn. = Connection to Community cluster; Aware = Civic Awareness cluster; Efficacy = Civic Efficacy cluster; MEIM = Multigroup Ethnic Identity Measure total score; Search = Ethnic Identity Search factor; Belong = Affirmation, Belonging, Commitment factor; INS = Inclusion of Nature in Self scale.
Table 12

ANOVA Comparing CRS Cluster Scores

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of squares</th>
<th>df</th>
<th>Mean square</th>
<th>F</th>
<th>Partial $\eta^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pretest</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cluster</td>
<td>27.337</td>
<td>2</td>
<td>13.669</td>
<td>39.296**</td>
<td>0.360</td>
</tr>
<tr>
<td>Error</td>
<td>48.697</td>
<td>140</td>
<td>0.348</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Posttest|               |     |             |        |                 |
| Cluster | 20.568        | 2   | 10.284      | 38.582** | 0.404           |
| Error   | 30.387        | 114 | 0.267       |        |                 |

Note. ** = $p < 0.00$
Table 13
Bonferroni Comparison for CRS Clusters

<table>
<thead>
<tr>
<th>Comparisons</th>
<th>Mean Difference</th>
<th>Std. Error</th>
<th>Lower Bound</th>
<th>Upper Bound</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>95% CI</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conn. vs. Aware</td>
<td>-0.827**</td>
<td>0.116</td>
<td>-1.111</td>
<td>-0.544</td>
</tr>
<tr>
<td>Pretest Conn. vs. Efficacy</td>
<td>-0.160</td>
<td>0.090</td>
<td>-0.380</td>
<td>0.060</td>
</tr>
<tr>
<td>Aware vs. Efficacy</td>
<td>0.667**</td>
<td>0.089</td>
<td>0.448</td>
<td>0.886</td>
</tr>
<tr>
<td>Conn. vs. Aware</td>
<td>-0.819**</td>
<td>0.114</td>
<td>-1.097</td>
<td>-0.541</td>
</tr>
<tr>
<td>Posttest Conn. vs. Efficacy</td>
<td>-0.239*</td>
<td>0.086</td>
<td>-0.452</td>
<td>-0.025</td>
</tr>
<tr>
<td>Aware vs. Efficacy</td>
<td>0.580**</td>
<td>0.086</td>
<td>0.368</td>
<td>0.792</td>
</tr>
</tbody>
</table>

Note. * p < 0.05, ** p < 0.001; Conn. = Connection to Community cluster; Aware = Civic Awareness cluster; Efficacy = Civic Efficacy cluster.
Table 14

Ethnicity by Gender ANOVA for CRS Scores at Pretest

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of squares</th>
<th>df</th>
<th>Mean square</th>
<th>F</th>
<th>Partial $\eta^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethnicity</td>
<td>0.288</td>
<td>1</td>
<td>0.288</td>
<td>0.517</td>
<td>0.008</td>
</tr>
<tr>
<td>Gender</td>
<td>0.270</td>
<td>1</td>
<td>.270</td>
<td>0.484</td>
<td>0.008</td>
</tr>
<tr>
<td>Ethnicity X</td>
<td>0.001</td>
<td>1</td>
<td>0.001</td>
<td>0.972</td>
<td>0.000</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Error</td>
<td>35.660</td>
<td>64</td>
<td>0.557</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. All p-values > 0.05
Table 15

Ethnicity ANOVA for MEIM Scores at Pretest

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of squares</th>
<th>df</th>
<th>Mean square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethnicity</td>
<td>0.019</td>
<td>1</td>
<td>0.019</td>
<td>0.119</td>
</tr>
<tr>
<td>Error</td>
<td>11.021</td>
<td>70</td>
<td>0.157</td>
<td></td>
</tr>
</tbody>
</table>

Note. All p-values > 0.05
Figure Caption

*Figure 1.* R&S learning model.

*Figure 2.* Mean CRS scores at pre and posttest.

*Figure 3.* Mean MEIM scores at pre and posttest.

*Figure 4.* Mean INS scores at pre and posttest.
Data Collection Point

Mean CRS Scores

4.45
4.5
4.55
4.6
4.65
4.7
4.75

Pretest
Posttest

Data Collection Point
Mean MEIM Scores

Data Collection Point

Pretest

Posttest
Appendix
Roots & Shoots and Youth Development

Weingart Youth Survey

Please read the form on the next page carefully. If you agree to take part in this research project, which has the support of the Jane Goodall Institute, please sign at the bottom of the next page.

Thank you for your help with this important project!

Laura Johnson, Ph.D.

University of Mississippi
Dear Roots & Shoots members,

I would like you to help with a research project. The purpose is to learn more about your experiences with Roots & Shoots (R&S).

No one will see your answers except the researchers. Your name will not be used in any reports. The results will be shared with the Jane Goodall Institute (JGI) and with other professionals. However, you will not be identified.

If you decide to participate, you will answer questions about your R&S activities, your beliefs about your self and your community. It will take about twenty minutes to finish. In the spring we will be asking you these questions again, after you have completed the year with R&S.

You will not receive any payment for your help.

You can quit this research at any time and we won’t be upset with you. If you have any questions, please ask now. You can also contact Laura Johnson by phone (662-915-5185) or e-mail (ljohnson@olemiss.edu).

I agree to help with this research project. ☐ YES ☐ NO

Signature: _______________________________________________________________________

Date: Month ____________ Day ____________ Year ______________
**Background Questions**

**Please circle the correct choice or fill in the blank.**

1. Are you female or male? □ female □ male

2. How old are you? ________________

3. What grade are you in? ______

4. In what Country were you born? __________________

5. What Country have you lived in the longest? ____________________

6. What Language(s) do you speak? ____________________________

7. How would you describe your family’s economic situation?
   □ We do not have enough money to meet basic needs (food, clothing, and shelter)
   □ We usually have enough money to meet basic needs (food, clothing, and shelter)
   □ We always have enough money to meet basic needs (food, clothing, and shelter)
   □ We have more than enough money to afford entertainment and leisure activities

8. What is the highest level of education reached by your father?
   □ None
   □ Elementary / primary / grade school (1-8)
   □ High school / secondary school (9-12)
   □ Some college or technical school
   □ College graduate
   □ Graduate degree
   □ Do not know
9. What is the highest level of education reached by your mother?

- None
- Elementary / primary / grade school (1-8)
- High school / secondary school (9-12)
- Some college or technical school
- College graduate
- Graduate degree
- Do not know

11. Have you participated in a Roots & Shoots project before?

- Yes
- No
**CIVIC RESPONSIBILITY SCALE (LEVEL 1)**

Please indicate how strongly you disagree or agree with each statement. Circle the number that best describes your response (1=strongly disagree, 2=disagree, 3=slightly disagree, 4=slightly agree, 5=agree, 6=strongly agree).

<table>
<thead>
<tr>
<th></th>
<th>strongly disagree</th>
<th>disagree</th>
<th>slightly disagree</th>
<th>slightly agree</th>
<th>agree</th>
<th>strongly agree</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I have a strong and personal attachment to a particular community.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>2. I often discuss and think about how political, social, local or national issues affect the community.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>3. I participate in political or social causes in order to improve the community.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>4. It is my responsibility to help improve the community.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>5. I benefit emotionally from contributing to the community, even if it is hard and challenging work.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>6. I am aware of the important needs in the community.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>7. I feel a personal obligation to contribute in some way to the community.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>8. I am aware of what can be done to meet the important needs in the community.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>9. Providing service to the community is something I prefer to let others do.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>10. I have a lot of personal contact with people in the community.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>11. Helping other people is something that I am personally responsible for.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>12. I feel I have the power to make a difference in the community.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>
13. I often try to act on solutions that address political, social, local or national problems in the community.  
14. It is easy for me to put aside my self-interest in favor of a greater good.  
15. I participate in activities that help to improve the community, even if I am new to them.  
16. I try to encourage others to participate in community service.  
17. Becoming involved in political or social issues is a good way to improve the community.  
18. I believe that I can personally make a difference in the community.  
19. I believe that I can have enough influence to impact community decisions.  
20. I am or plan to become actively involved in issues that positively affect the community.  
21. Being concerned about state and local issues is an important responsibility for everybody.  
22. Being actively involved in community issues is everyone's responsibility, including mine.  
23. I try to find time or a way to make a positive difference in the community.  
24. I understand how political and social policies or issues affect members in the community.
**Inclusion of Nature in Self Scale**

Please circle the picture below that best describes your relationship with the natural environment. How interconnected are you with nature?

![Diagram of circles representing self and nature]

**MEIM Scale**

In this world, people come from many different countries and cultures, and there are many different words to describe the different backgrounds or ethnic groups that people come from. Your ethnic group could be related to your nationality, religious group, or tribal affiliation. As an example, some names of ethnic groups in the United States are Hispanic or Latino, Black or African American, Asian American, Chinese, Filipino, American Indian, Mexican American, Caucasian or White, Italian American, and many others. These questions are about your ethnicity or your ethnic group and how you feel about it or react to it.

Use the numbers below to indicate how much you agree or disagree with each statement.

1- I have spent time trying to find out more about my ethnic group, such as its history, traditions, and customs.

   (1) Strongly disagree   (2) Disagree   (3) Agree   (4) Strongly agree

2- I am active in organizations or social groups that include mostly members of my own ethnic group.

   (1) Strongly disagree   (2) Disagree   (3) Agree   (4) Strongly agree
3- I have a clear sense of my ethnic background and what it means for me.
(1) Strongly disagree        (2) Disagree            (3) Agree            (4) Strongly agree

4- I think a lot about how my life will be affected by my ethnic group membership.
(1) Strongly disagree        (2) Disagree            (3) Agree            (4) Strongly agree

5- I am happy that I am a member of the ethnic/cultural group I belong to.
(1) Strongly disagree        (2) Disagree            (3) Agree            (4) Strongly agree

6- I have a strong sense of belonging to my own ethnic group.
(1) Strongly disagree        (2) Disagree            (3) Agree            (4) Strongly agree

7- I understand pretty well what my ethnic group membership means to me.
(1) Strongly disagree        (2) Disagree            (3) Agree            (4) Strongly agree

8- In order to learn more about my ethnic background, I have often talked to other people about my ethnic group.
(1) Strongly disagree        (2) Disagree            (3) Agree            (4) Strongly agree

9- I have a lot of pride in my ethnic group.
(1) Strongly disagree        (2) Disagree            (3) Agree            (4) Strongly agree

10- I participate in cultural practices of my own (ethnic/cultural) group, such as special food, music, or customs.
(1) Strongly disagree        (2) Disagree            (3) Agree            (4) Strongly agree
11- I feel a strong attachment towards my own ethnic group.

(1) Strongly disagree  (2) Disagree  (3) Agree  (4) Strongly agree

12- I feel good about my cultural or ethnic background.

(1) Strongly disagree  (2) Disagree  (3) Agree  (4) Strongly agree

13- My ethnicity is: ______________________ (write in)

14- For U. S. Americans, choose below

(1) Asian or Asian American, including Chinese, Japanese, and others

(2) Black or African American

(3) Hispanic or Latino, including Mexican American, Central American, and others

(4) White, Caucasian, Anglo, European American; not Hispanic

(5) American Indian/Native American

(6) Mixed; Parents are from two different groups

(7) Other (write in): ________________________________

15- My father's ethnicity is (use numbers or write in)____________________

16- My mother's ethnicity is (use numbers above or write in) ______________
Information about Study

Thank you for your participation in this research on the impact of involvement with the R&S Program on youth development. During this research, you were asked to fill out a survey that asked questions about your involvement with the R&S program, your attitudes and beliefs about the program, and your attitudes and beliefs about yourself. We want to learn how being an R&S member could help youth develop in positive ways. In particular, we think that R&S, through service and reflection, might help youth develop in areas such as self-esteem and civic and environmental responsibility. In this research, we are hoping to learn more about how R&S develops these characteristics and how R&S inspires youth to make a difference in their communities, and beyond. If you have questions now, please ask. If you have additional questions later, you may ask your group leaders, coordinators, or contact Laura Johnson at (662) 915-5185 or by email (ljohnson@olemiss.edu). You may keep this document for your records. Thank you and best of luck in your R&S activities.

THANK YOU FOR YOUR PARTICIPATION!
VITA

Christopher Fox Drescher

University of Mississippi
Department of Psychology
University, MS 38677

EDUCATION

3rd Year Graduate Student
Clinical Psychology Ph.D. Program
University of Mississippi
Oxford, Mississippi
Current GPA: 4.0

B.A. in Psychology
West Virginia University
Degree Awarded: May 2009, Summa Cum Laude

Honors Thesis: Depression and Performance on a Go/no-go Task in College Students.
Committee: Tracy L. Morris, Ph.D. (Chair)
Michael Perone, Ph.D.
Chad S. Brice, M.A.

RESEARCH POSITIONS

University of Mississippi:
October 2010 – Present. Research assistant with the University of Mississippi Disaster Research Collaborative. Duties included selecting and designing assessment instruments to measure psychosocial adjustment in response to the Gulf Oil Spill.

August 2009 – August 2010. Assisted Laura Johnson, PhD. with her research concerning positive youth development. Duties included data analysis and project development.

West Virginia University:
January 2008 – May 2009. Assisted Chad Brice with his master’s thesis, under the supervision of Tracy L. Morris, PhD. Duties included data entry and explaining consent forms to participants.

CLINICAL POSITIONS

Delta Autumn Consulting:
September 2011 – Present. Conducted social security and disability assessments including intellectual assessments, mental status exams and clinical interviews.

**Cultural Connections:**
August 2011 – Present. Co-facilitator of support group for international students

**The University of Mississippi Department of Psychology’s Psychological Services Center:**

**Region IV Community Mental Health Center:**

**PUBLICATIONS**

**In Press:**

**Under Review:**

**In Development:**
Drescher, C. F., Chin, E. G., Johnson, L. R., & Johnson-Pynn, J. S. (in development). Exploring developmental assets in Ugandan Youth.


Campbell, S. W., Walter, A. B., Baczwaski, B. J., Schulenberg, S. E., Drescher, C. F., & Smith, C. V. (in development). Disaster-related research and consultation: Lessons learned from two events.

**POSTER PRESENTATIONS**

Submitted for presentation at the 45th annual meeting of the Association for Behavioral and Cognitive Therapies, Toronto, Canada.


annual NIH Conference on the Science of Dissemination and Implementation, Bethesda, MY.


**MEMBERSHIP IN PROFESSIONAL ASSOCIATIONS**
Association for Behavioral and Cognitive Therapies (2009-present)
American Psychological Association (2009-present)

**RESEARCH PROJECTS IN PROGRESS**

*University of Mississippi Disaster Research Collaborative*
Investigation of the effectiveness of 14 behavioral health programs funded through the Mississippi Department of Mental Health (DMH) in response to the Gulf Oil Spill. Involves coordination with DMH as well as local organizations that provide mental health services, so that data can be collected for multiple projects in a standardized and scientifically valid manner.

*Mental Health Screening in Mississippi’s Schools: Behavioral Vital Signs*
Wide effort to provide basic behavioral health screening for conditions of anxiety, mood disturbances, loneliness/social dysfunction, and externalizing behavior in Mississippi’s schools. Involves coordination at multiple levels with state agencies such that procedures can become standard practice in attending schools, and data collected can be utilized to reform/improve mental health services offered to youth in these contexts.

*Novel Methods for Disseminating Evidence-Based Practice*
Investigation of the effectiveness of a short animated video to change college students’ perceptions of and attitudes towards evidenced-based practice in psychology. Involves study design, data collection, data analysis, and interpretation of results.