

ABSTRACT

Title of Thesis: DEVELOPMENTAL OUTCOMES ASSOCIATED WITH
 SERVICE-LEARNING IN UNDERGRADUATE STUDENTS

Britt Skjonsby, Master of Arts, 2004

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Many opportunities for service participation are emerging in educational institutions. While research has found effects of service in multiple developmental domains, variations associated with the context of service, and the students' gender, have not been examined.

The current study examines 612 undergraduates participating in service activities in one of three contexts: service-learning course, co-curricular service, or America Reads America Counts (ARAC). Service-learning students were classified into low and high reflection groups. Self-report questionnaires measured perceived citizenship, leadership, and diversity outcomes.

ARAC students reported higher scores on most items, with ARAC and high reflection curricular scores often significantly higher than low reflection curricular

and co-curricular students. ARAC students likely reported more positive outcomes because of the time commitment required for their employment, and high reflection curricular students presumably reported more positive outcomes because of the integration of the service experience with their coursework. Implications and suggestions for future research are discussed.

DEVELOPMENTAL OUTCOMES ASSOCIATED WITH SERVICE-LEARNING
IN UNDERGRADUATE STUDENTS

by

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DEDICATION

For my mother, who taught me the value of service.

And Gilad, who strengthens my resolve to serve.

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DEVELOPMENTAL OUTCOMES ASSOCIATED WITH SERVICE-LEARNING IN UNDERGRADUATE STUDENTS

INTRODUCTION AND LITERATURE REVIEW

Introduction

In recent years higher education has been challenged to alter structures and curricula to produce graduates who can apply their knowledge and experience to make substantive contributions to society in contrast to students who have technical knowledge but not the skills to apply it (Boyer, 1994; Jones & Hill, 2001). Two experiences that have a potential for significant impact on the acquisition of practical knowledge are participation in community service and the incorporation of this experience with traditional coursework. These experiences can help students comprehend the relevancy and applied implications of course material, enabling them to be more valuable and effective when they join the workforce. Consequently, there have been recent school-based initiatives which promote the acquisition of practical knowledge through community service and service-learning.

Universities currently provide many avenues for participation in community service. There are curricular service opportunities in which students can enroll in courses that have service components. These courses often include reflection and analysis of the service experience, as well as reading and critical thinking about social issues. Undergraduate students can also participate in co-curricular service, sometimes called collegiate sponsored activities, such as community service coordinated by a fraternity, sorority, or service organization. An additional option is the federal work-study program in which students receive stipends for performing

services in their community. Although all of these experiences result in service participation, it is likely that the associated outcomes will vary depending upon the context in which service occurs.

It is important to understand what these outcomes are, and how they vary depending upon both the context and the participant. Is undergraduate participation in community service associated with perceived citizenship, leadership, and diversity outcomes? Do these outcomes vary depending upon the context, specifically a curricular, co-curricular, or work-study environment? Do they vary depending upon the gender of students? Formulating research to promote understanding of the answers to these questions requires a review of the empirical findings of outcomes related to different types of service participation at the university level.

The research discussed in this review was conducted by social scientists and academic scholars studying the benefits of service participation. Some studies examine the outcomes associated with community service, service learning, or service in general, while others compare the two experiences. The studies rely primarily on self-report data from college undergraduates regarding their perceived outcomes and have been conducted in a variety of context. To examine these issues this review will first consider social cognitive theory as a possible framework, followed by a review of the findings on service-learning and associated developmentally relevant outcomes. The review will conclude with a summary and critique of existing findings as well as a statement of the current research problem.

Theoretical Framework

It is important to use a theoretical framework when assessing developmental outcomes to enable the interpretation of findings. Social cognitive theory, which stemmed from social learning theory, is particularly useful because of its focus on the person's active role in their development throughout the lifespan. The social learning theory (SLT) of development, up until the late 1970s, concentrated on the environmental influence on behavior, often discounting cognition as a factor in human development. Albert Bandura, a prominent SLT theorist, proposed adding the missing cognitive component, therefore creating a theory he called social cognitive theory (SCT). SCT builds on the ideas and concepts of SLT, retaining observational learning, but also contributing constructs such as triadic reciprocal causation, forethought, self-regulation, reflection, self-efficacy, and collective efficacy.

Triadic reciprocal causation refers to the reciprocal and dynamic relationship between behavior, personal factors, and the environment (Bandura; 1978, 1989, 1999). These sources of influence affect each other bidirectionally, but they are not necessarily of equal strength, nor do they occur simultaneously (Bandura; 1989, 1997). Behavior is the way a person conducts themselves, or their actions. Personal factors include cognitive, affective, and biological events (Bandura; 1997, 1999) such as expectations, beliefs, self-perceptions, goals, intentions, age, sex, race, and physical attractiveness (Bandura, 1989). The third component in the triad is the environment, of which the three types are: imposed, selected, and constructed. People have little control over an imposed environment, only control over how they react to it. A selected environment is chosen from options and then activated by the

person. Lastly, constructed environments are actively created (Bandura, 1997). The three components involved in triadic reciprocal causation can greatly influence each other, as well as the relationship between the other two.

Personal factors, such as beliefs, goals, and expectations, will contribute to behavior through perception, self-efficacy, and regulation. For example, if someone perceives a situation as threatening they will behave differently than they would in a comfortable situation. In turn, behavior will lead to self-evaluation, therefore influencing the development of new goals and expectations, or the maintenance of old ones (Bandura, 1989).

Personal characteristics also interact with the environment in a reciprocal manner. Beliefs and expectations will not only affect what environment is chosen or created, but also the extent to which the environment can have an effect on the person. In addition to cognition, physical characteristics can influence the chosen environment, as well as the environmental response to the person. The environment, and especially its social aspects, conveys information to the person through modeling (Bandura, 1986), and often causes changes in personal factors. As illustrated here, personal factors influence behavior and environment, but they also mediate the interaction between the two (Bandura, 1978).

The last pathway of influence occurs between an individual's behavior and their environment, including the people and objects surrounding them. One's behavior affects selection and creation of the environment, while the make up of the environment provides various kinds of reinforcement and influences how one behaves. The environment usually exists before the interaction, but it must be

activated by behavior in order for the relationship to occur. For instance, a burner on a stove may be hot, but it will not burn anyone until it is touched (Bandura, 1989). It must also be considered that the burner would not be hot if someone had not turned it on. This bidirectional relationship is indicative of the assertion that “people are both products and producers of their environment” (Bandura, 1989, p.3).

Borrowing from SLT, Bandura (1999) asserts that learning occurs through direct interactions with, or indirect observations of, others’ behavior and the associated consequences. *Observational learning*, also termed modeling or vicarious learning, is an important way to convey social norms, religious beliefs, values, and other thoughts, feelings, and behaviors. Modeling plays an important role in socializing as it can affect attitudes and emotional dispositions towards others (Bandura, 1989).

Even when active observation is not occurring, behavior is often subconsciously internalized and cognitively processed (Bandura, 1999). Once a behavior has been learned it can be unintentionally or deliberately manifested in someone’s behavior. Something that is inadvertently expressed may have been processed without the person’s awareness, while a direct expression is often an intentional behavior that is the result of purposeful cognitive assessment.

There are four processes involved with observational learning: attentional, retention, production, and motivational. *Attentional processes* influence what information is observed or considered by a person. *Retention processes* involve arranging the observations, and the implied rules and conceptions, into symbols in order to remember them. These symbols are then translated into appropriate actions

as part of the *production processes*. Finally, *motivational processes*, such as internal and external incentives, must be present to turn the modeled event into actual behavior (Bandura, 1989). This is significant because it indicates that behaviors do not have to be directly displayed by an individual in order for them to learn the associated consequences, but motivation is necessary for the performance of a behavior.

Forethought takes place during the production processes and regulates behavior through the anticipation of positive and negative consequences of actions. This results in the production of goals and appropriate courses of action (Bandura; 1986, 1993, 1999). Forethought is made possible through symbolic representations of foreseeable future events and expectations regarding anticipated outcomes. These future consequences are then translated to current motivations (Bandura, 1989). Because of the processes involved in vicarious learning, behavior does not have to be displayed by an individual in order to know the resulting consequence. Cognitive processes have already converted observed experiences into symbols, which can be accessed when deciding on current behavior.

Many cognitive processes are involved in *self regulation*, which serves as the internal control over one's thoughts, feelings, and actions (Bandura, 1989) by setting standards and self-mandated consequences (Bandura, 1991). Regulators, such as motivation and expectations, are the driving force behind behavior. These regulating mechanisms, with the assistance of forethought capabilities, provide incentives that can result in action (Bandura, 1986). The capability for self-regulation is important because it represents the transition from external to internal controls of behavior, also

known as personal standards. These standards will then act as the criterion against which one's actions are measured. When there is a discrepancy between behavior and the standard, the person must self-evaluate, which can lead to the regulation of future actions or the development of new standards (Bandura, 1986).

Standards, both social and moral, are developed through multiple influences: direct instruction, reactions to behavior, and modeling of values. Standards are displayed by others, and then internalized at which point the person may criticize the behavior of others' as well as their own, evaluate what is right, and construct their own standards. These standards will then regulate behavior through self-pride or self-criticism for upholding or violating personal standards, with the intention that behavior that upholds the standards will persist so as not to disappoint oneself (Bandura, 1986).

An important component of self-regulation is reflection. *Reflection* is the means by which people analyze their experiences through the consideration of their own thought processes and actions (Bandura; 1986, 1989). Self-reflection enables people to monitor their thoughts and behavior, make judgments about the results of their actions, and alter their thinking based on the consequences of their actions. This leads not only to an understanding of one's beliefs, opinions, and behavior, but an increase in knowledge of one's self and the surrounding world (Bandura, 1986).

One of the most significant constructs in SCT is *self efficacy*, which is the confidence that one has in their ability to control and execute the actions required to deal with current and future situations (Bandura; 1995, 1997). This includes the perceived ability to produce actions that result in desired outcomes and prevent

undesired ones (Bandura, Caprara, Barbaranelli, Pastorelli, & Regalia, 2001). Of all the personal factors, Bandura (1989) believes that self-efficacy has the most significant effect on behavior. It affects the selected course of action, the amount of effort to expend, and perseverance in the face of obstacles. There are four principal sources of efficacy information, which serve as the basis for self-efficacy judgments: performance mastery experiences, judging capabilities in comparison with social models, social influences and persuasion, and physiological and emotional states (Bandura, 1995).

Self-efficacy is vital to the evaluation of one's experiences and abilities, and can continue to influence these components by giving a person confidence, which will motivate and encourage specific behaviors. Self-efficacy is the foundation for what Bandura (1997, 1999, 2002) terms "human agency," which is the capability to actively produce a desired effect. People's lack of confidence in themselves, and their capabilities, will greatly affect their willingness to make a difference, or be agentic. Efficacy directly affects behavior through the belief that one can accomplish something, but it also indirectly influences action through its effect on cognition, motivation, and affect. For instance, self-efficacy will influence whether someone thinks efficiently and optimistically rather than pessimistically (Bandura et al., 2001).

Self-efficacy generally refers to personal efficacy, but it is also related to collective efficacy. *Collective efficacy* is defined as "a group's shared belief in its conjoint capabilities to organize and execute the courses of action required to produce given levels of attainment" (Bandura, 1997, p. 477) and it involves the collective power that person's with similar goals have when they get together to produce desired

results they could not achieve as individuals. Collective efficacy will influence how well the group uses its resources, the amount of effort given to the cause, staying power, and vulnerability to discouragement (Bandura; 2000, 2002). In relation to effecting societal changes, a strong sense of personal self-efficacy plays a very significant role in perceived collective efficacy. This was found by Fernández-Ballesteros, Díez-Nicolás, Caprara, Barbaranelli, and Bandura (2002) in their study of 1,214 Spanish individuals' socioeconomic status and its effect on personal, individual social, and collective social efficacy.

It is important to note that many of SCT's constructs, as illustrated in triadic reciprocal causation, have reciprocal relationships with each other. For example, self-efficacy influences forethought because of the anticipatory scenarios that are constructed. A person with high efficacy beliefs may visualize success in the face of adversity, while someone with low self-efficacy might visualize failure (Bandura, 1995). Forethought can subsequently influence efficacy because when the anticipated results are accurate it will have a positive effect on perceived self-efficacy.

Conceptualization

Social cognitive theory, and the associated constructs, serves as a useful framework when trying to understand and assess the outcomes associated with the various contexts of service participation. The first context examined here includes service-learning courses in which students incorporate their service experience with academic coursework. A second context is co-curricular service, which includes collegiate-sponsored community service that, although sponsored by the university, does not incorporate academic material. Examples of co-curricular service include

service organizations on campus, as well as fraternities and sororities. The third context that will be considered is a federal work study program that provides the opportunity for undergraduate students to mentor children in the community in exchange for federal funds to pay for tuition. The different contexts in which service occurs will likely affect the experience that one has, and the outcomes associated with that experience.

In relation to reciprocal causation, all participants, regardless of the context of participation, will learn something different from the experience because they possess distinctive personal factors. For example, given that universities are often involved with organizations that serve minorities, the relationships that students form with members of the community may be affected by their own race or ethnicity. It has been hypothesized that a white student and an African American student may have very different experiences, even when volunteering at the same location (Green, 2001). Personal factors will have varying effects on the environment, just as disparate environments will provide different opportunities for observational learning.

The construct of modeling can also be used to conceptualize the desire to participate in community service. Models, such as parents, siblings, and peers, exemplify their personal beliefs and norms. If a child grew up in an environment in which no-one modeled participation in community service, he or she may associate little value with service participation. On the other hand, if the child grew up in an environment with people who valued and actively participated in service, and had observed the positive effect it had on everyone involved, he or she would likely participate in the same activity. This idea of vicarious learning has been confirmed

by Wilson (2000) who stated, based on an extensive review of the literature, that teenagers raised by parents who volunteered were more likely to volunteer themselves. Similarly, Keeter, Zukin, Andolina, and Jenkins (2002) found that 33% of participants in a national survey who were raised in a home where family members regularly volunteered also volunteered. In contrast, only 18% of persons raised in a home without volunteering grew up to be volunteering adults. These findings suggest that volunteerism is a value which can be modeled at an early age.

Observational learning, and the four mediating processes involved, will clearly play a role in service involvement. Attentional processes involve the observation of friends or family members participating in community service, and the effect it had on them personally and those whom they helped. Retention processes would include transforming the observations into symbols that represent the actions and their associated consequences. These would have to be organized in a way that would promote memory and recall. Production processes would be thinking about how personal actions could produce similar results if service participation was chosen as a behavior. The last process, which involves motivation, must be present in order for service participation to occur. Motivation is vital for thoughts to be translated into actions, such as moral judgment to moral behavior (Nucci, 2002). These could be internal or external incentives, for example: increased self-perception and self-efficacy, a sense of achievement, increase in experience, recognition, or completion of a course or institution requirement.

Vicarious learning would vary as a function of context, which is primarily attributable to the other students involved in the activity. When examining co-

curricular activities, students who are members of a community service club could possibly model different behaviors and values than students who belong to fraternities and sororities. Since the models, and the subsequent values and standards, would differ, the opportunities for observational learning would be mediated by the context.

The assessment of the effect that one's behavior can have on another person, the community, or society as a whole occurs through forethought. Participants in community service have the ability to anticipate the outcomes associated with their civic and social practices, but expected outcomes would likely vary depending upon the context in which the service occurred. The curricular students may intend to gain knowledge pertaining to the subject they are studying, while the work-study students will likely anticipate that the experience will assist in funding their education. For co-curricular service students, forethought would enable them to anticipate an associated sense of satisfaction with themselves, either for making a valuable contribution or fulfilling an expectation of a social organization that they value.

Similarly, regulating factors, including motivation and expectations, will also vary depending upon context. Curricular students may be motivated to earn college credit and expect to enjoy the service as an applied learning experience. Co-curricular students may have incentives such as organizational requirements, social interactions, or even moral standards. Depending upon the organization of membership, students may only expect to have a good time, while others may anticipate making a difference in people's lives. Work-study students are probably motivated to earn money for college and they may treat the experience like any other type of employment. As with many SCT constructs, motivations and expectations

will not only vary depending upon curricular and non-curricular experience, but also because of the personal factors of the students.

The capacity for self-reflection should also vary for the curricular versus non-curricular students. Since reflection is incorporated into service-learning courses, it is likely that these students will experience an increase in academic knowledge, knowledge of self, and knowledge about the situation in which the service took place. Self-reflection, in addition to reflection with classmates and community members, should be focused on in the classroom to integrate the service experience with academic material for optimal development (Eyler, 2002).

Research indicates that reflection is one of the most important components in the service-learning experience because of its contribution to multiple domains of development, particularly in relation to outcomes related to citizenship (Batchelder & Root, 1994; Boss, 1994; Eyler & Giles, 1999). Eyler (2002) reports that reflection in service-learning courses should contribute to students' pro-social attitudes, self-efficacy, problem solving skills, and deeper understanding of social issues and course content. Yates and Youniss (1998) found that issues discussed during reflective activities progressed in complexity over the span of the semester, indicating that students had an increased comprehension of the issue and sense of social responsibility.

Although reflection is one of the fundamentals of service-learning, it is likely that this component is not constant across all courses, and that this too would have an effect on students' outcomes (Eyler & Giles, 1999). Consequently, reflection will not only play a role in the differential experiences of curricular and co-curricular

students, but within the curricular group as well. Reflection aids in students' deeper understanding of course material and relevancy of the service experience, but a significant amount of intervention, modeling, and response may be necessary to connect classroom learning with the service experience (Anson, 1997). Therefore, students who are in service-learning courses that do not adequately incorporate reflection may have outcomes similar to co-curricular students.

Co-curricular and work-study students may participate in informal reflection activities with their peers, but it is probably not as structured or as prevalent as in a service-learning class. While the deeper understanding achieved through reflection promotes knowledge in multiple domains, it also leads to an increase in self-efficacy. The informal nature of co-curricular reflection, or a lack of reflection in a service-learning course, may not have the same effect on self-efficacy.

People with high efficacy beliefs might be more likely to volunteer because they would have confidence in their ability to make a valuable contribution, while also benefiting from the personal outcomes associated with the experience. High self-efficacy also promotes prosocial attitudes and behavior such as cooperativeness, helpfulness, and sharing (Bandura, 2000) all of which could contribute to the willingness to participate in community service, regardless of context. Studies have confirmed that there is a significant relationship between prosocial attitudes and self-efficacy (Bandura et al., 2001; Smith, Walker, Fields, Brookins, & Seay, 1999).

Fernández-Ballesteros et al. (2002) report, based on their study of a diverse sample of Spaniards, that in regards to bringing about social change, men express higher efficacious beliefs than women, and younger participants express higher

perceived efficacy than older participants. This would affect citizenship and leadership outcomes, because self-efficacy affects many domains of behavior. Perceived social self-efficacy may affect one's ability to act as a leader. Assertive self-efficacy relates to a person's ability to speak their mind and stand up to mistreatment. Social self-efficacy includes the ability to form relationships, work cooperatively, and handle interpersonal conflicts (Bandura et al., 2001). In a study which examined conflict resolution style in parents, Corcoran and Mallinckrodt (2000) found that social self efficacy contributed to conflict management skills. All of these types of personal efficacy contribute to overall collective efficacy.

Collective efficacy may be at the core of participation in community service. In a review of the literature, Bandura (1999) reports that perceived collective political efficacy predicts not only political participation but also social activism. Although perceived collective efficacy is important, reportedly 18 to 24 year-olds who understand the value of collective efficacy still do not necessarily participate in groups which have a common goal (Andolina, Jenkins, Keeter, & Zukin, 2002).

Social cognitive theory is an excellent framework to use when examining participation in community service and service-learning, and the subsequent effect on developmental outcomes. SCT gives some alternative explanations about how socialization into valuing these experiences takes place, how the internalization of the experiences can lead to the development of moral standards, and how outcomes will differ based on the person and the experience.

Service-Learning

Definitions

Personal and environmental characteristics will contribute to one's participation in activities, such as service-learning, community service, and volunteering. Although some researchers use these terms interchangeably, other social scientists propose that it is important to differentiate between them because they result in different experiences. Service-learning has been defined as:

A credit-bearing educational experience in which students participate in an organized service activity that meets identified community needs and reflect on the service activity in such a way as to gain further understanding of course content, a broader appreciation of the discipline, and an enhanced sense of civic responsibility (Bringle & Hatcher, 1996, p.222).

In contrast, community service and volunteerism both refer to providing a service to the community without pay or the integration of reflection on the experience. Community service is defined more generally as being charitable and providing a service for others' benefit (Pritchard, 2002). Kraft (1996) mentions that the term community service often has a negative connotation, pertaining to a court-ordered sentence or mandated requirement of parents or schools. Similarly, volunteering occurs when one devotes their time to benefit another human being, or group of persons, without compensation (Wilson, 2000), and primarily occurs in an organizational setting (Penner, 2002). Service-learning is distinct from the other experiences as it incorporates learning objectives, structured reflection, and integration with the academic curriculum (Kraft, 1996).

Prevalence

Service-learning participation at universities is reportedly increasing. Campus Compact (2003), a national coalition of university leaders dedicated to incorporating civic education and responsibility into higher education, reports that 36% of students at coalition universities participated in either community service or service-learning in 2003. This is up from 33% in 2002 and 28% in 2001. The U.S. Department of Education (2000) found that 34.6% of undergraduate students participated in community service activities. Similarly, in 1999 52% of students in grades 6-12 participated in community service, which is up from 49% in 1996 (U.S. Department of Education, 1999).

Not only is service participation increasing, but the United States also fares well in comparison to other countries. In their study on civic education, Torney-Purta, Lehmann, Oswald, and Schulz (2001) found that 50% of ninth graders reported engagement in a group that involved community service activities. This was the largest extent of participation in the 28 countries examined, with the second highest involvement rate of 34% reported in Colombia and Hong Kong.

Demographic Correlates

In a review of the literature on volunteers of all ages, Wilson (2000) examines contextual effects on service participation. Although there is not a lot of research in this area, reportedly the rate of volunteering on college campuses increases if it is required or encouraged by the school. Of the students who are volunteering, 70% do so as part of a collegiate-sponsored activity, 48% do so independently, and 29% participate as part of a class (these numbers overlap as respondents could select more

than one category). When students were asked why they participated in service, three of the four commonly stated reasons were related to civic responsibility: to help others, to improve the community, and to improve society as a whole (Astin & Sax, 1998). In comparison to non-volunteers, volunteers are more politically active, support societal responsibilities for citizens, and have a stronger desire to serve the public interest (Wilson, 2000).

Wilson (2000) also reports on others' findings regarding demographics associated with service. Volunteering reportedly declines after adolescence and steadily climbs back up, reaching its peak in middle age. Conversely, Keeter et al. (2002) found that 15 to 25 year-olds are volunteering more than any other age group, with 40% of people in this age group volunteering. They report that this rate steadily declines as people age.

Gender correlates vary as a function of age. Among younger people, females volunteer more than males, but among older people males participate in service activities more than females. Overall, volunteers are slightly more likely to be female than male (Keeter et al., 2002). This was also found by the U.S. Department of Education (2000), with 36.8% of female undergraduates volunteering and 31.7% of males. A study on high school students found that females were more than twice as likely to donate food for a school food drive (Aquino & Reed, 2002).

Although it has been reported that volunteers are more likely to be White than any other race (Wilson, 2000; Campus Compact, 2003), the U.S. Department of Education reports the following percentage of undergraduates volunteering (within each race): Native American, 39.2%; White, 35.6%; Multi-racial, 35%; African

American, 33.2%; Asian, 32.3%; Pacific Islander, 31.3%; and Latino, 29.8%. The finding that undergraduate volunteers are more likely to be White may just be a reflection of the overrepresentation of White students on college campuses.

People of different ages, genders, and ethnicities are participating in community service and service-learning at universities across the country. They seem to have different characteristics from the students who are not volunteering, but there will inevitably be variation in personal factors within the group as well. These factors will affect what context for service is selected, and what outcomes occur as a result of the experience.

Developmental Outcomes

General Background

Developmental outcomes are affected when there is a change in achievement or ability in a domain (Hart, Atkins, & Fegley, 2003) that marks a significant, positive movement on a particular trajectory. Roth, Borbely, and Brooks-Gunn (2003) discuss positive youth development in the context of the six Cs of developmental outcomes: *competence* in academic, social, and vocational areas, *confidence* or a positive self-identity, *connections* to community, family, and peers, *character* or positive values, integrity, and moral commitment, *caring* and compassion (Lerner, Fisher, & Weinberg, 2000), and *contribution* to society (Pittman, Irby, Tolman, Yohalem, & Ferber, 2001). These developmental outcomes are comparable to outcome goals expected for service-learning. Competence relates to increased academic achievement, critical thinking, and general intellectual growth, while confidence is associated with improving self-esteem and self-efficacy. Connections can be made

with the community and peers through the pro-social interactions that occur during service-learning. The development of character is consistent with an increase in social responsibility, civic duty, and positive values. Similarly, caring is associated with a sense of altruism and general compassion for others. Finally, contribution is consistent with providing services to those in need and addressing social issues (Roth, Borbely, & Brooks-Gunn, 2003). These categories of developmental outcomes will be used to conceptualize findings regarding outcomes associated with service experience.

Many studies in the field have been interested in the effect of service participation on academic outcomes, which is understandable since administrators and faculty must be convinced that students can benefit academically from the experience. It could be argued that an equally important point is that students can become better citizens and leaders in their school and community. It has been found that service-learning is associated with an increase in grade point average, general knowledge, and academic self-concept (Astin & Sax, 1998), but does it also help students to apply their knowledge—to put their education to good use?

Other developmental outcomes will be examined here, namely citizenship, leadership, and diversity, to see if community service and service-learning can influence other aspects of an undergraduate education. Next will be the consideration of whether these outcomes can vary by the context in which the service occurs, or the gender of the participants.

Although there are findings on the differential extent to which females and males participate in service, there does not appear to be any research on gender-

related outcomes. The most relevant study examined gender differences in anticipated benefits associated with a service-learning experience. It was found that females believed they would gain respect for community members, leadership and problem-solving skills, positive feelings about service, and understanding of social issues. Conversely, males anticipated that they would receive credit towards their degree and gain experience working with a specified population (Nichols & Monard, 2001). While this is certainly interesting, these findings are not as useful as the perceived outcomes reported after the service-learning experience. Similar to the anticipated benefits, the actual perceived benefits related to citizenship, leadership, and diversity would likely differ.

Since there is not an abundance of research on gender differences in service-learning, it will be useful to mention findings in related fields to enable some insight into gender differences. A meta-analysis of 172 studies examining helping behavior concluded that males are more likely than females to display spontaneous helping behavior, although this has been attributed to social norms and roles, and more specifically gender roles (Eagly, 1987). Eagly and Crowley (1986) state that females display more long-term helping behavior than males, primarily in a relational context, but that this type of behavior is more difficult to measure than a short-term encounter. This is relevant to examining the effects of participation in service because a helping behavior that lasts for an entire semester may have more of an effect on a female's outcomes than on a male's.

There has also been much research on gender differences in the field of moral development. Moral development, identity, and action should play a role in outcomes

associated with participation in community service or service-learning. There have been conflicting findings as to whether or not gender differences exist in moral reasoning and development, as some believe that males and females have different perspectives on morality, and therefore are capable of differential moral reasoning (Belenky et al., 1986; Gilligan, 1982). Most researchers contradict this claim and conclude that findings in support of gender differences can actually be attributed to level of education (Al-Ansari, 2002; Colby & Damon, 1995; Walker, 1984), culture, or race (Daniels, D'Andrea, & Heck, 1995). Colby and Damon (1992, 1995) also found, when examining moral exemplars, that moral commitment and behavior was not necessarily correlated with level of moral development. Similarly, Hart and Fegley (1995) found no differences in stage of moral judgments for altruistic and non-altruistic adolescents, but altruistic students did make more references to moral personality traits and moral goals. Although not explicitly measured in this study, it will be interesting to see if moral behavior, such as commitment to helping others through community service, will be associated with other civic related items.

There are many different definitions of citizenship or civic responsibility. Boyte and Farr (1997) quote other researchers whose definitions of citizen vary from “rights-bearing member[s] of a political system...who work together in public ways...as caring members of a moral community” (p.37) to “workers, collectively trying to solve problems and to create civic products” (p.43). Regardless of the definition, many studies report that as civic duties, community service and service-learning are an important component of civic education (Astin & Sax, 1998; Astin,

Sax, & Avalos, 1999; Giles & Eyler, 1994; Moely, McFarland, Miron, Mercer, & Ilustre, 2002; Nnakwe, 1999; Steinke, Fitch, Johnson, & Waldstein, 2002).

Research Findings

Giles and Eyler (1994) examined the effect that a short term service-learning experience had on 72 undergraduate students. They used pre- and post-test data from a questionnaire that was distributed before the service started, 5 weeks into the service, and again at 13 weeks when the service portion of the course was concluded. The questionnaire, derived from measures used in prior studies (Astin, 1992; Markus, Howard, & King, 1993; Pascarella, Ethington, & Smart, 1988), was designed to assess personal, social, and cognitive outcomes through scales and open-ended questions.

When comparing pre- and post-test scores there was a significant increase in the value placed on community involvement, donating time, becoming a community leader, influencing politics, involvement in political processes, stereotype reductions, and impacting the world. Giles and Eyler (1994) point out that students became more interested in politics even when the government's agencies and policies were not part of the curriculum. Other outcomes that were not as strongly correlated, but related nonetheless, were the students' desire to work towards equal opportunity, and the belief that people's misfortunes were not due to indolence. Eyler (2002) later states, in a review of the literature, that service-learning contributes to engaged citizenship through the development of a deeper understanding of social issues, skills for community action, and positive attitudes toward community involvement.

In a similar study, Nnakwe (1999) examined 34 undergraduate students in a nutrition course in which community needs were integrated into the course. Pre- and post-test surveys were used to measure skills and understanding of community issues before and after the experience. The survey was taken from prior research (Plous & White, 1995) and it measured students' attitudes and knowledge regarding world hunger and homelessness. The course reportedly resulted in increased concern, intended activism, and interest in contributing, volunteering, and resolving social problems.

Steinke et al. (2002) also examined the effect of service-learning on various outcomes including civic engagement, community impact, and ethical development. They assessed 153 undergraduates involved in 12 service-learning courses at 3 institutions. Pre- and post-test surveys were administered. Both tested the outcome variables using closed-ended scales, but the post-test also contained a qualitative portion in which students' intellectual, spiritual, and ethical development were assessed. This was measured by the Measure of Intellectual Development (MID), which is an instrument designed for coding open-ended essays. Finally, representatives from the organizations filled out a survey so that the students' community impact could be measured.

Participation in service-learning was associated with a positive change in civic engagement and ethical development. Civic engagement included general interaction with community members, while ethical development involved the interaction with diverse groups of people who were unlike the participant. Surprisingly, diversity was

a negative predictor of civic engagement denoting that the diversity within the placement actually had a negative effect on civic engagement (Steinke et al., 2002).

In an effort to discern the difference in outcomes between service-learning courses and courses with the same curriculum but no service-learning component, Batchelder and Root (1994) compared 96 undergraduates, 48 per group, to see if their cognitive, prosocial, and identity outcomes varied at the end of the semester. All participants were given the Responses to Situations (RS) in which they wrote what kind of action they would take if presented with specific social problems. Service-learning students also completed journal entries and an Evaluation of Service-Learning (ESL), which is a 7-item Likert-scale survey examining the service-learning experience. There were significant differences between the experimental and control group on pro-social reasoning, decision making, and self-reflective empathy, with the service-learning group reflecting significantly higher gains on these dimensions.

In a similar study, Boss (1994) compared a group of undergraduate students enrolled in a service-learning portion of an ethics class with a traditional ethics class with no service component. A total of 71 participants were given the Defining Issues Test (DIT) at the beginning and end of the course to determine whether the integration of community service with coursework had a different effect on moral reasoning than the regular ethics curriculum. The DIT, designed by Rest (1987), measures the stage of moral reasoning that the student has achieved. Demographic information was also reported to see if there was a relationship between DIT scores and variables such as age, gender, and previous community service experience.

The service-learning students had greater gains in moral reasoning. More specifically, the service-learning group had a mean gain on the DIT of 8.61 (standard deviation of 12.39), while the control group had a mean gain of 1.74 (standard deviation of 10.04). Boss (1994) also found that the experience had a greater effect on male participants, meaning that their moral reasoning increased more than the females. However, there was no association between prior service experience and DIT score.

Moely et al. (2002) also examined the effect of service-learning on civic outcomes. A control group of 324 students who did not participate in service-learning was compared with a group of 217 students who participated in service-learning as part of the course requirement. The participants were students in 26 different courses, all of which offered an optional service-learning component. The students completed a Likert-scale questionnaire that measured knowledge gained and a general course evaluation. The questionnaire, which was completed at the onset and conclusion of the course, was comprised of questions from the Civic Attitudes and Skills Questionnaire (CASQ), a Course Satisfaction measure, and a Social Desirability measure. There are 6 scales in the CASQ: civic action, political awareness, leadership skills, social justice attitudes, diversity attitudes, and interpersonal and problem-solving skills, all of which were incorporated into the aforementioned survey. The Course Satisfaction measure included questions pertaining to the value of the course, expected or reported understanding of course content and community issues, and (for service-learning students only) their perception of the contribution made to the community. The last measure, Social

Desirability, attempted to assess the extent to which the students gave answers that were socially acceptable.

The service-learning students reported an increase on all of the CASQ and Course Satisfaction variables except diversity attitudes. Significant changes were found in interpersonal and problem-solving skills, leadership skills, social justice attitudes, and civic action. The mean scores on all post-tests were higher for the service-learning students than for those not participating in service. Service-learning students also reported learning more about the academic field and the community, as well as gave the course an overall higher rating (Moely et al., 2002).

Although previous studies did not always find support for the contribution of service experience to diversity outcomes, Jones and Hill (2001) tried to discern why service-learning participation can lead to an increase in the understanding and appreciation of diversity. The researchers conducted a qualitative study which consisted of in-depth interviews of 6 undergraduate students and 8 people who were involved, either as employees or clients, in the organization in which the student volunteered. It was discovered that an understanding of diversity developed through multiple avenues that primarily involved exposure and relationship building. The student first needed to become aware of their stereotypes, this often happened when they actually met people who belonged to a group of which the student held stereotypical beliefs. This exposure to different life situations led to new knowledge of the needs of the community and the underlying social issues. Bandura (1989) asserts that the emotional states of others can be appreciated and understood by

imagining one self in that same situation. Exposure to these situations and environments is necessary for this understanding to develop.

Another study which examined the effect of service-learning through qualitative data was conducted by Yates and Youniss (1998). The data collected in a prior case study (Youniss & Yates, 1997) were used to examine the effects of service participation on political identity development in 160 urban adolescents. Data collection occurred through questionnaires, essays, group discussions, and observations of the students. Questionnaires were distributed at the beginning and end of the semester and contained questions regarding extracurricular activities, participation in community service, and religious background. The students wrote structured essays and participated in discussion groups after each quarterly visit to the community site. Groups were student-led, but they were encouraged to discuss their service experience. Finally, researchers observed students in the classroom, at their service site, and on field trips.

Yates and Youniss (1998) found that participation in service promoted thinking about one's role in societal and political change, and therefore contributed to political identity development. They also found that level of reflectivity was associated with intentions for future participation in service.

In a longitudinal study Astin and Sax (1998) examined the effect of service experience on 35 outcomes within 3 developmental domains: civic responsibility, educational attainment, and life skills. They employed an impressive sample of 3,450 undergraduates at 42 universities. Students who had participated in service were compared with nonparticipants at the same institution. Multiple measures were

employed including the Cooperative Institutional Research Program (CIRP) Freshman Survey (1990-1994), 1995 College Student Survey (CSS), SAT scores, and American College Testing Program scores. Both surveys contained demographic information, service propensity variables, characteristics of the institutions, and questions pertaining to civic responsibilities, educational attainment, and life skills. The CSS was a follow-up survey for students who had filled out the Freshman Survey in previous years.

All 35 outcomes that Astin and Sax (1998) examined were associated with general service participation. Related to civic responsibility, there was an increase in commitment to generally help others, serve the community through volunteer work or a community action program, and influence social values and the political structure. Other associated outcomes were leadership ability, social self-confidence, interpersonal skills, conflict resolution skills, and cooperative ability. Students who had participated in community service were more likely to have knowledge of different races and cultures, and the desire to promote racial understanding. It was also found that females were more likely than males to participate in community service.

Astin et al. (1999) ran another longitudinal multi-institutional study with 12,376 undergraduates from 209 universities in order to examine the long-term effects of community service participation in the final year of college. The researchers employed a Student Information Form (SIF), 1989 Follow-up Survey, and the Nine-Year Follow-up Survey. The SIF was given to first-year students and contained demographic information, college expectations, values, and life goals. The

1989 Follow-up Survey was given four years later. It contained many items that were on the SIF, along with questions related to the college experience. The final survey was distributed in 1994. Again, it contained much of the same information as well as information on graduate school and career choice

Long term effects were found for 13 of the 18 examined outcomes including: the understanding of problems in the community, commitment to serve the community, amount of hours spent volunteering, interaction with people of other races and ethnicities, promotion of racial understanding, social values, empowerment, the development of a meaningful philosophy of life, and an increase in educational degree goals. This indicates that service participation indeed has long term effects that are related to citizenship and diversity. The 5 outcomes that the researchers did not find associations with were political leanings, income, preparation for graduate school, and satisfaction with graduate school and employment (Astin et al., 1999).

The findings discussed prior to this point indicate that community service and service-learning are associated with an increase in civic behaviors, leadership abilities, and the acceptance of diverse groups of people. The next step is to examine the similarities and differences between the community service and service-learning experience. If there is variation between the service experiences then they should have differing effects on developmental outcomes.

In their extensive study Astin and Sax (1998) examined outcomes for students who engaged in service in one of three contexts: independently, part of a collegiate organization, or in a service-learning course. They found much overlap in the outcomes associated with the experiences, but there were some noteworthy

differences. Independent service participants reported higher intentions to participate in volunteer work in the following years. Students involved in service through a collegiate organization were not surprisingly more satisfied with community service and leadership opportunities on campus. Service-learning students had an increased understanding of the nation's problems.

Vogelgesang and Astin (2000) compared the community service experience to the service-learning experience in a recent study which contained 22,236 participants. They compared the two service groups (service-learning versus community service), and also combined the two groups to compare general service participation to students who did not participate in service. This longitudinal study also compared the Student Information Form (SIF) with a survey administered four years later, the College Student Survey (CSS). The researchers looked at multiple outcomes related to values and beliefs, academic skills, leadership, and future plans.

All examined outcomes were positively correlated with general service participation, but when broken down it varied for service-learning and community service. Participation in service-learning had a stronger influence on commitment to activism, promoting racial understanding, writing skills, and grade point average. However, there did not appear to be any additional influence, in comparison to general service participation, on leadership or future plans (Vogelgesang & Astin, 2000).

Not all research in the service-learning field reports significant differences in outcomes for service-learning students. With the use of a control and experimental group, Waskiewicz (2002) compared 69 students that had been divided into service-

learning and non service-learning classes. Measurements included a pre- and post-test survey including a series of semantic differentials (SD) and the Community Service Involvement Preference Inventory (CSIPI). The SD is an assessment of attitudes, values, and concepts. The CSIPI measures the level of involvement and civic values and responsibility. Analyses of the quantitative data from these surveys revealed no difference between the two groups. However, journal entries were also completed and their qualitative analyses revealed differences in commitment to and responsibility felt towards the community. There was no indication of who coded the measures, or if they were coded blind to condition.

Summary and Critique

The field of service-learning research is in its early development, but significant findings are emerging regarding outcomes associated with service. Service-learning and community service have been found to have a positive influence on development in many different ways. Both experiences contribute to the development of competencies in multiple domains, including academic and social, which results in an increase in confidence and self-efficacy. Students are provided with a context that encourages connections with their professors, peers, and the community. Service engagement also facilitates character development, which includes producing caring and compassionate individuals that have a desire to make a contribution to society.

Findings regarding outcomes have been enhanced by advancements in methodology, including sample, design, and measure. Recent studies have employed impressive samples (Astin & Sax, 1998; Astin et al., 1999; Vogelgesang & Astin,

2000) and the pre- and post-test control group design is gaining momentum (Batchelder & Root, 1994; Boss, 1994; Moely et al., 2002; Waskiewicz, 2002). Multiple measures have been used to assess various outcomes, which provides a variety of findings in the field. In general, great strides have been made in a short amount of time regarding sample and design issues in the field of service-learning. Having said that, service-learning is a relatively new field so there is still a need for an increased standard of methodology.

There are methodological issues, related to sample, design, and measure, in the field that need to be addressed. Sample size in most of the studies is fairly small, usually under 100, although recent studies have made great advancements on this issue. Astin and Sax (1998) examined 3,450 undergraduate students at 42 universities, Astin et al. (1999) had an impressive sample of 12,376 undergraduates from 209 universities, and Vogelgesang and Astin (2000) examined an astounding 22,236 students from 177 institutions. All of the studies with large samples lack control groups, however the use of longitudinal data is encouraging and their analyses are explained with great detail. These samples contained students from universities across the country, which provides for a diverse sample representative of college undergraduates.

Design difficulties lie in the reliance on undergraduate participation in community service and registration for service-learning courses. Since it is unethical to force a student to register for a particular class or participate in community service, most of the studies in this field are exploratory (Astin & Sax, 1998; Astin et al., 1999; Gles & Eyler, 1994; Nnakwe, 1999 ; Steinke et al., 2002; Vogelgesang & Astin,

2000), while the remaining are quasi-experimental (Batchelder & Root, 1994; Boss, 1994; Moely et al., 2002; Waskiewicz, 2002). The quasi-experimental studies utilize a control group to compare the experiences of service-learning and non service-learning students, but without employing random assignment. While design issues can be problematic, measuring student outcomes is also a challenge. Therefore, researchers rely primarily on self-report.

Most of the data on service-learning outcomes is collected from self-report questionnaires, and many are responded to by mail. Self-report data are inherently biased, because of their subjective nature, and are susceptible to reactive effects including deception and misinterpretation. Mail surveys add an additional bias because people who participate in community service will probably be more willing to take the time to return the survey, resulting in a sample that has an overrepresentation of service volunteers. Response rates vary from 21% (Astin & Sax, 1998) to 29% and 51% in a multi-phase study (Astin et al., 1999). Again, this is a difficult issue to address because it is important to measure students' perceptions and intentions after a service-learning experience and the best way to measure this is through self-report. One study that addressed this issue was a qualitative study in which members of the community were interviewed, in addition to the students, to include other perspectives in the analyses (Jones & Hill, 2001). In related fields studies have combined qualitative and quantitative data, namely from questionnaires, essays, discussion groups, and observations, to examine the effect of community service on civic identity and social responsibility (Yates & Youniss, 1998; Youniss &

Yates, 1997). This case study could be used as a model for service-learning research to expand beyond the current methodological standard.

Many different self-report measures have been employed in this field, but the design, coding, and scaling of the questionnaires are not always clear. It is often difficult to discern whether or not there is content or construct validity because either the measure is not thoroughly explained, or an entire outcome is assessed by a single item on one questionnaire (Astin & Sax, 1998; Giles & Eyler, 1994). Many fields of research have one or two standard measures that are used to assess outcomes; there is a need for greater uniformity of self-report measures in the field of service-learning. Other limitations in the field include correlational variables and operational definitions.

Although some researchers have examined correlational variables such as personality differences (Batchelder & Root, 1994) prior experiences (Astin et al., 1999), and factors which predict service participation, such as gender and religion, (Vogelgesang & Astin, 2000) this issue is not investigated as often as it should be. In addition to the inattention given to correlational variables, there are not distinct operational definitions for researchers to work with.

While there is no mention of operational definitions, it is clear that researchers use many terms interchangeably, often labeling similar outcomes with various names. There is no agreement on what citizenship entails, or what classifies as leadership skills. This makes comparisons between studies difficult. A similar problem occurs with the various measures that are employed. A recent study (Moely et al., 2002) addressed this issue by comparing the scales in their measure to service-learning

goals described by Stukas, Clary, and Snyder (1999) in a review of the literature. It is important for studies to incorporate prior research, albeit definitions, measures, or findings, into current research in order to contribute the most information to the field.

Topics in the service-learning field that are just beginning to be explored are the importance of the context in which the service takes place, specifically the comparison of the service-learning and community service experience, and the variation of developmental outcomes associated with females and males. Although characteristics of courses and organizations that promote community service participation vary, there are few studies that compare these experiences (Vogelgesang & Astin, 2000). Although the end result is service participation, the environment in which the experience is implemented and discussed would differ, allowing differing opportunities for observational learning and reflection. Similarly, experiences and perceived outcomes may also vary as a function of gender.

Research Problem

There is a substantial amount of evidence that service-learning and community service are associated with outcomes related to citizenship, leadership, and diversity. What must be discerned now is the contribution of service-learning versus community service. Do they indeed produce similar outcomes, or does one have a different influence than the other? Similarly, is there a differential effect of service on females and males? The purpose of this study is to address these questions by examining whether developmental outcomes are moderated by context of service or gender. The following research questions are addressed:

1. Is undergraduate participation in community service associated with perceived citizenship, leadership, and diversity outcomes?
2. Do the outcomes vary depending upon the context, specifically a curricular, co-curricular, or work-study environment?
3. Do the outcomes vary depending upon the gender of students?

I will be looking at survey data from 634 undergraduate students who participated in community service in one of the following contexts: curricular in a service-learning class, co-curricular through involvement with a collegiate sponsored activity, and federal work-study through the America Reads America Counts (ARAC) program. Service-learning classes are offered through every college at the University of Maryland, College Park, all of which were contacted to participate in this study. Collegiate sponsored activities include Greek and service organizations, such as Kappa Alpha Theta and Habitat for Humanity. ARAC is a program that provides federal funds for undergraduate students who tutor children in either English or math. These service programs are similar to programs offered by other higher education institutions. Students participating in one of these service activities in the spring or fall semester of 2003 were recruited to participate in this study.

Citizenship outcomes have already been established as associated with service participation, but there are inconclusive findings on leadership and diversity. First I will assess the effect of context on students' perceptions of these three developmental outcomes to see if there is variation between the service groups. Next, I will look within the groups to examine gender differences. Finally, I plan to examine the

influence of additional secondary variables such as race, major, and prior service experience.

Based on my review of the literature I expect that there will be a significant effect of context on developmental outcomes. The three contexts examined should theoretically be very different experiences, associated with a variety of motivations, and therefore various outcomes. I anticipate that students who participate in service-learning will score higher on citizenship and diversity outcomes, but that the three groups will have similar scores related to leadership. Collegiate sponsored organizations provide opportunities for the development of leadership skills, as does the tutor-pupil relationship which is present at ARAC. I expect that there will also be some variation in the curricular group due to the variation in course quality and encouragement of reflection. Finally, I anticipate that females will score higher on all three developmental outcomes.

METHOD

This exploratory study employed a between-group design, and compared perceived developmental outcomes associated with three different service experiences: curricular, co-curricular, and ARAC. I will be examining pre-existing data that was collected by the Commuter Affairs and Community Service Office (CACS), a department within the Division of Student Affairs at the University of Maryland. IRB approval was not requested before the data were collected because the initial intent was for internal assessment and program improvement only. However, I obtained IRB approval prior to using the data for research purposes.

Participants

The study involved 634 undergraduate students who attended the University of Maryland, College Park in the spring or fall 2003 semester. All of the participants were involved in one of the following activities: one of fourteen service-learning courses, many of which contain multiple sections (340 students), one of thirty-one campus organizations which have a service component (161 students), or America Reads America Counts (133 students). Please see Table 1 for demographic information on the participants.

The service-learning students volunteered at 81 different locations varying from primary and secondary schools to organizations that address issues regarding youth and family services, civil rights, poverty, and the environment. Although the service component is a requirement of the course, the specific amount of hours completed, as well as the incorporation of reflection on the service experience, will vary between classes.

Table 1: Demographic characteristics of students

	<i>Curricular</i>	<i>Co-curricular</i>	<i>ARAC</i>
Racial Background			
African American	42	2	36
Asian American	48	7	19
Caucasian	195	141	46
Latino	9	4	5
Native American	-	-	1
Bi/Multi-racial	14	1	10
Other	10	1	6
Gender			
Female	194	104	101
Male	141	54	30
Transgender	3	1	1
Age			
17 or less	6	-	1
18-19	215	49	39
20-21	71	94	66
22-23	33	15	19
24 or older	11	-	7
Major			
Agriculture	7	1	2
Architecture	1	2	4
Arts and Humanities	25	19	28
Business	40	31	11
Behavioral Sciences	62	46	40
Physical Sciences	28	1	4
Education	19	14	15
Engineering	40	10	1
Health	18	9	6
Journalism	8	5	1
Life Sciences	55	9	9
Undecided	32	10	8
Total	340	161	133

Similarly, the co-curricular students volunteered at 24 different locations ranging from a rape crisis center to the Ronald McDonald House. The average amount of hours that the co-curricular students spent on service activities during the previous year can be seen in Table 2.

Table 2: Amount of hours that co-curricular students participate in service activities during the year

	1-25 hours	26-50 hours	51-75 hours	76-100 hours	More than 100
Hours of service completed on own	138	8	3	1	1
Hours of service completed with student group	130	13	6	2	5

The America Reads America Counts program is the result of a national initiative to ensure that elementary school children achieve in reading and mathematics at an appropriate developmental level. This national service program involves mentors at 1,897 universities in the United States (U.S. Department of Education, 2000). The America Reads mentors work individually with first and second grade children two to five days a week, for two to three hours a day. Individual sessions are typically thirty minutes long and follow a set lesson plan. America Counts mentors work in small groups with two to three fourth grade students three days a week. These sessions are two hours long. All ARAC students undergo ongoing training and development sessions, participate in weekly meetings with their site supervisor, and receive compensation for their time (America Reads America Counts, 2003). The average amount of service hours ARAC students complete each week can be seen in Table 3¹.

It is difficult to compare the amount of service hours completed by students in the curricular, co-curricular, and ARAC service groups because that information is

¹ Note that there are approximately 32 weeks in an academic year.

Table 3: Amount of hours that ARAC students tutor children during the average week

	None	1-10 hours	11-20 hours	21-30 hours	31-40 hours	More than 40
Hours of service completed with ARAC	1	110	10	-	1	-

Table 4: Where students participated in service activities

	Curricular	Co-curricular	ARAC
Baltimore	23	3	-
Washington D.C.	61	21	-
Montgomery County	32	12	-
Prince George's County	103	54	133
On campus	90	53	-
Other	15	14	-

not consistently assessed across the measures. However, information on the geographical location of service sites is available for each service group (see Table 4).

Students on campus participating in these activities were recruited to complete the survey by student leaders and faculty members during the last two weeks of each semester. The students were encouraged to return the surveys on a voluntary basis.

Measures

Those who developed the questionnaire included items adapted from other instruments in order to assess self-perception of the contribution of the service experience to citizenship, leadership, and diversity outcomes. Since the instrument was originally designed to provide information to be used for program improvement, the developers were interested more in the contribution of the service experience to perceived outcomes rather than the students' actual developmental outcomes.

Citizenship questions were taken from the Index of Civic Engagement (Andolina, Keeter, Zukin, & Jenkins, 2003), of which questions pertain to three domains of engagement: civic, electoral, and political. Seven items were incorporated, all of which were related to civic engagement. Andolina et al. (2003) report that the indices have good construct validity, but that inter-item correlation is relatively low. When I examined the correlation between the 7 citizenship items they were all significantly correlated ($p < .01$), with correlations ranging from .423 to .754. The citizenship scale is comprised of the following items:

- To what extent has your community service experience contributed to your
- Ability to learn from the community what its needs are
 - Ability to examine social problems in order to address root causes as well as immediate needs
 - Interest in addressing national or global social problems
 - Commitment to lifelong involvement in the community to address social problems
 - Belief that individuals or groups doing community service can solve social problems
 - Belief that individuals or groups taking political action can solve social problems
 - Belief that it is your responsibility as someone who lives in the community to be involved in solving the community's social problems

Similarly, the leadership questions on the survey were taken from a previously developed instrument. The Socially Responsible Leadership Scale (Tyree, 1998) was comprised of 8 sections relating to leadership: consciousness of self, congruence, commitment, collaboration, common purpose, controversy with civility, citizenship, and change. At least one question was taken from each subscale, with the exception of citizenship so as not to overlap with the citizenship scale, for a total of 9 items. Tyree (1998) reported that the instrument is internally consistent and has content and construct validity. The reliability analysis on the 9 items summed across all levels

reported that they were significantly correlated ($p < .01$), with correlations ranging from .441 to .774. The leadership scale is comprised of the following items:

To what extent has your community service experience contributed to your

- Knowing/articulating your priorities in life
- Acting in ways consistent with your values
- Committing to activities that are important to you
- Ability to work well with others
- Ability to foster a shared vision when working with others
- Respecting opinions other than your own
- Comfort level with conflict
- Ability to work in changing environments
- Openness to new ideas

The final scale in the instrument is the diversity scale. Items were incorporated from the National Survey of Student Engagement (NSEE, 2000), which was designed to assess what undergraduate students gain from their college experience and the extent to which they have desirable learning and personal developmental outcomes. Psychometric analyses revealed that the instrument was both reliable and valid (Kuh, 2002). Seven diversity related items were adapted from the NSEE, all of which were significantly correlated ($p < .01$), with correlations ranging from .440 to .808. These 7 items comprise the diversity scale:

To what extent has your community service experience contributed to your

- Interacting with students of a race or ethnicity different than your own
- Interacting with students of different religious or political backgrounds
- Understanding of people from races/ethnicities different than your own
- Understanding how your race(s) shape your identity
- Understanding diverse cultural, political and intellectual views
- Willingness to seek out new experiences
- Awareness that systems can disadvantage groups of people

These three scales, in addition to prior service experience, program evaluation and reflection items, and demographic information, comprise the instrument used in this study. The format for the questions was slightly different for each section. For

the questions on perceived developmental outcomes responses were based on a 4-point Likert scale. Prior service, program evaluation, and reflection questions were responded to with a 5-point Likert scale, and there were three yes or no questions regarding experience with the CACS office. Lastly, the participants could choose from categorical options for demographic information. All questions on the survey were closed-ended.

There were three versions of the instrument used in this study, as questions were modified slightly to pertain to each service group. Please see Appendix A for the curricular service-learning survey, Appendix B for the co-curricular survey, and Appendix C for the ARAC survey. Questions pertaining to perceived developmental outcomes, prior service experience, and most demographic information were common across all three surveys, and were therefore the focus of the analysis. Other demographic questions, in addition to program evaluation and reflection items, varied between the groups. For a map of similarities and differences between the surveys please see Appendix D.

Procedure

The procedure for collecting data was slightly different for each group, although all surveys were completely anonymous. Administering the survey to the service-learning students involved mailing packets, which contained cover letters and surveys, to faculty members teaching service-learning courses. All service-learning courses were recruited for participation, although some professors declined. For those that agreed to participate, the response rate was near 100%. Faculty members were asked to distribute the surveys in class, request that the students fill them out,

collect the surveys, and return them via campus mail. It was requested that students be told that participation was not mandatory and would in no way impact their course grade or completion credit. Most faculty members gave out surveys in the second to last class of the semester.

The surveys for the co-curricular group were sent out electronically to leaders of all relevant groups on campus (those that had a community service component). It was requested that the survey be forwarded to members of the organization to complete and return electronically. Students were given two weeks to respond. There is no information on how many surveys were actually distributed to organization members, but as depicted by the small number of participants in the co-curricular group, the response rate was likely very low.

The ARAC survey was distributed by the director of the program to all participating members at the end of the semester meeting, which all students were required to attend. Since it was a required meeting the response rate was near 100%. The survey was completed on the spot and returned to the director.

RESULTS

In order to examine the association of developmental outcomes with service participation, analyses were conducted on five independent variables and five dependent variables. The primary independent variable used in this study is the context of the service participation, and secondary independent variables are gender, race, prior service experience, and major. During the early stages of analysis it became clear that the extent of reflection or connection between class and service should be considered, which added a fourth group to the context variable by splitting the curricular group. The dependent variables consist of scores on five scales. The items comprising the citizenship, leadership, and diversity scales have already been described, and future service participation and reflection scales were added at an early stage of analysis. Descriptive data will be provided for the primary independent variable (for all scales) and ANOVAs will be used to analyze the effects of each independent variable on each dependent variable. Two-way ANOVAs will then examine the interactions between independent variables.

Twenty-two students will be excluded from analysis because of the desire to be able to generalize findings to traditional college students. Eighteen of these students reported their age as “24 or older,” which has a range that is noticeably distinct from the other age options (e.g., 22-23), and may include participants who are possibly in their 30s, 40s, or 50s. Non-traditional students would understandably differ from traditional students in their perceptions of experiences. Five other students reported that they were transgender (including one from the 24 or older

group), too small a group to analyze separately. Therefore, analyses were conducted on data from 612 participants.

Scale Development

A reliability analysis was conducted on all five scales. The citizenship scale has a mean inter-item correlation of .61, contains seven variables, and has a Cronbach alpha = .92. The leadership scale has a mean inter-item correlation of .60 for its nine variables and a Cronbach alpha = .93. The diversity scale has a mean inter-item correlation of .58, contains seven variables, and has a Cronbach alpha = .91. The developmental outcome scales were described in the methods section of this paper.

The future service and reflection scales were added to clarify the effect that independent variables would have on additional outcomes. Future service consists of two items:

Please indicate your level of agreement with each statement about your participation in service aside from this course and this semester.

- Before I graduate from UM, I anticipate participating in community service activities again.
- After graduation from UM, I anticipate participating in community service activities.

Unlike the three developmental outcome scales, which used a 4-point response format, these items' responses were based on a 5-point Likert scale. For analysis, the individual scores were combined to form two groups in order to compare participants who expected to participate in service in the future with those who did not. Students whose means indicated an average response of 1, 2 or 3 (strongly disagree, disagree, or neutral) were grouped together to represent students who either did not anticipate participating in service or were ambiguous. Students whose means indicated an average response of 4 or 5 (agree or strongly agree) were grouped

together as students who planned to participate in service activities in the future. The future service scale has a correlation of .70 for its two items, and a Cronbach alpha = .82.

The reflection scale is comprised of eight items that measure the extent to which the students believed that they were able to apply their experience by making connections to the coursework. Although the questions were initially intended for program evaluation, they inquire about a student's ability to relate the service to the academic material, and to understand applied implications, both of which indicate the degree to which they were involved in processes similar to reflection. Reflection is a process that has been found to be crucial to the service-learning experience (Eyler & Giles, 1999; Yates & Youniss, 1998; Youniss & Yates, 1999). Because of findings on the importance of reflection, and the inconsistencies of its inclusion in service-learning courses, it was important to establish low and high reflection groups within the curricular service group. The reflection scale used a 5-point response format, so students whose means indicated an average response of 1, 2, or 3 on the questionnaire (strongly disagree, disagree, or neutral) were classified in the low reflection group. Students whose responses indicated a mean of 4 or 5 (agree or strongly agree) were classified as high reflection. The following eight reflection items were asked only of curricular students (eleven questions were actually asked, but three items were not included in the scale because they did not pertain to reflection):

Please indicate your level of agreement with each statement about your service-learning course.

- The community service component of this course helped me to see how the subject matter I learned can be applied to the real world.
- The community work I did through this course helped me to better understand course content (e.g., lectures and readings).

- The community work I did through this course helped me to develop my academic writing skills.
- The community work I did through this course helped me to develop my critical thinking skills.
- The course instructor helped me to make connections between the service activity and the course content.
- The course readings helped me to make connections between the service activity and the course content.
- The agency supervisor helped me to make connections between the service activity and the course content.
- The community service component of this course helped me to clarify my professional goals.

The reflection scale has a mean inter-item correlation of .47, contains 8 items, and has a Cronbach alpha = .88. The relatively high alpha scores on all five scales indicate that the items in each scale are internally consistent. Although reliability is high, there is no information on the validity of the scales.

Context of Service Participation

The first purpose of the study was to look descriptively at indicated item responses to see which students were reporting higher perceived outcomes, and on what items. The effect of context of service was examined using four context groups: low reflection curricular, high reflection curricular, co-curricular, and ARAC. Table 5 examines mean scores for these groups on items in the citizenship scale. Using the scale score, based on 7 items, context of service had a significant effect on mean scores of citizenship outcome items ($F(3, 602) = 34.00, p < .0001$). ARAC students consistently reported higher scores than the other three groups, and significantly higher than low reflection curricular and co-curricular (testing the Tukey's significant, $p < .05$), but not significantly higher than the high reflection curricular group. The mean differences between the low reflection curricular, high reflection curricular, and co-curricular were all significant (using Tukey's test, $p < .05$).

Table 5: Means and standard deviations on citizenship outcome items for undergraduates involved in different contexts of service participation

Item	Curricular				Co-curricular		ARAC	
	Low reflection		Highreflection					
	n = 148		n = 173		n = 160		n = 125	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
To what extent has your community service experience contributed to your:								
1. Ability to learn from the community what its needs are	2.32	.94	2.97	.80	2.63	.81	3.12	.76
2. Ability to examine social problems in order to address root causes as well as immediate needs	2.15	1.01	2.71	.85	2.55	.83	2.94	.87
3. Interest in addressing national or global social problems	1.96	.94	2.45	.92	2.32	.92	2.69	.96
4. Commitment to lifelong involvement in the community to address social problems	2.01	.90	2.61	.92	2.28	.87	2.86	.84
5. Belief that individuals or groups doing community service can solve social problems	2.17	.91	2.84	.79	2.48	.80	2.99	.80
6. Belief that individuals or groups taking political action can solve social problems	1.99	.95	2.57	.87	2.37	.83	2.74	.86
7. Belief that it is your responsibility to be involved in solving the community's social problems	2.27	.94	2.88	.86	2.58	.84	3.02	.78
Scale (averaging items)	2.12	.77	2.72	.68	2.46	.68	2.91	.68

Citizenship items were then ranked in order of students' agreement with the question, based on mean scores, in order to explore the findings in more detail (see Table 6). There is a great deal of similarity in how students believed that they were affected by the service experience. Students generally responded more positively to

Table 6: Rank order of the contribution of the experience to citizenship outcome items

Item	Curricular		Co-curricular	ARAC
	Low reflection	High reflection		
1. Ability to learn from the community what its needs are	1	1	1	1
7. Belief that it is your responsibility to be involved in solving the community's social problems	2	2	2	2
5. Belief that individuals or groups doing community service can solve social problems	3	3	4	3
2. Ability to examine social problems in order to address root causes as well as immediate needs	4	4	3	4
6. Belief that individuals or groups taking political action can solve social problems	6	6	5	6
4. Commitment to lifelong involvement in the community to address social problems	5	5	7	5
3. Interest in addressing national or global social problems	7	7	6	7

the more concrete questions, such as learning from, and responsibility to, the community (items 1 and 7). The more abstract questions, such as addressing national social problems (item 3), received lower levels of agreement. Students in all four groups reported that the experience contributed more to the belief that community service could solve social problems than political action (comparing items 5 and 6).

A similar pattern can be seen in the leadership scale, which was based on 9 items, where context had a significant effect on mean scores of the leadership outcome items ($F(3, 602) = 40.29, p < .0001$). Although the assumption of homogeneity of variance was not met for this test, the statistic is robust to the violation because of the comparable sizes of the four context groups (Hendrickson, 2003). Again, ARAC students consistently reported higher scores than the other three groups, and significantly higher than low reflection curricular and co-curricular

Table 7: Means and standard deviations on leadership outcome items for undergraduates involved in different contexts of service participation

Item	Curricular				Co-curricular		ARAC	
	Low reflection		Highreflection					
	n = 148		n = 173		n = 160		n = 125	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
To what extent has your community service experience contributed to your:								
1. Knowing/articulating your priorities in life	2.03	.99	2.64	.88	2.58	.88	2.88	.96
2. Acting in ways consistent with your values	2.26	.95	2.85	.85	2.76	.80	3.02	.81
3. Committing to activities that are important to you	2.22	1.00	2.88	.81	2.79	.82	3.21	.78
4. Ability to work well with others	2.46	.90	3.08	.80	2.94	.80	3.22	.74
5. Ability to foster a shared vision when working with others	2.30	.97	2.94	.83	2.76	.81	3.06	.84
6. Respecting opinions other than your own	2.16	.97	2.98	.83	2.91	.81	3.14	.86
7. Comfort level with conflict	2.00	.98	2.73	.87	2.31	.85	2.66	.76
8. Ability to work in a changing environment	2.21	.97	2.84	.87	2.41	.81	3.06	.74
9. Openness to new ideas	2.33	.96	2.91	.80	2.69	.74	3.13	.79
Scale (averaging items)	2.22	.76	2.87	.66	2.68	.62	3.04	.73

(testing the Tukey's significant, $p < .05$), but not significantly higher than the high reflection curricular group. The mean differences between the low reflection curricular, high reflection curricular, and co-curricular were significant at the .05 level. Mean scores are summarized in Table 7, and items are ranked in order of the students' level of agreement, based on the mean scores, in Table 8. There is some consistency in ranking, but the low reflection curricular group rated the effect of the experience on respecting others' opinions (item 6) lower than the other service

Table 8: Rank order of the contribution of the experience to leadership outcome items

Item	Curricular		Co-curricular	ARAC
	Low reflection	High reflection		
4. Ability to work well with others	1	1	1	1
6. Respecting opinions other than your own	7	2	2	3
3. Committing to activities that are important to you	5.5	5	3	2
9. Openness to new ideas	2	4	6	4
5. Ability to foster a shared vision when working with others	3	3	4.5	5.5
2. Acting in ways consistent with your values	4	6.5	4.5	7
8. Ability to work in a changing environment	5.5	6.5	8	5.5
1. Knowing/articulating your priorities in life	8	9	7	8
7. Comfort level with conflict	9	8	9	9

Note: Values that were equal or within .01 of each other received the same rating.

groups. Curricular students were more likely to believe that the service experience contributed to their ability to foster a shared vision (item 5), while co-curricular and ARAC students believed that there was a greater effect on their commitment to activities (item 3). Very few students believed that the experience helped them articulate their priorities or become comfortable with conflict (items 1 and 7).

Context of service also had a significant effect on the scale of the 7 diversity items ($F(3, 602) = 50.14, p < .0001$), where again homogeneity of variance could not be assumed, but was not problematic. Group differences were significant between all groups (using Tukey's test, $p < .05$), with ARAC students reporting more positive outcomes, followed by high reflection curricular, co-curricular, and low reflection curricular, respectively. Mean scores on diversity items are summarized in Table 9. The diversity items were then ranked in order of level of agreement, which can be seen in Table 10. Co-curricular students were more likely to report that the service

Table 9: Means and standard deviations on diversity outcome items for undergraduates involved in different contexts of service participation

Item	Curricular				Co-curricular		ARAC	
	Low reflection		Highreflection					
	n = 148		n = 173		n = 160		n = 125	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
To what extent has your community service experience contributed to your:								
1. Interacting with students of a different race or ethnicity	2.03	.90	2.82	1.03	2.23	.91	3.17	.85
2. Interacting with students of different religious or political backgrounds	1.91	.90	2.58	.97	2.40	.90	2.82	.98
3. Understanding of people from different races/ethnicities	1.94	.92	2.71	1.03	2.28	.92	3.08	.87
4. Understanding how your race(s) shape your identity	1.68	.87	2.39	1.00	2.06	.94	2.81	1.00
5. Understanding diverse cultural, political and intellectual views	1.80	.84	2.54	.95	2.24	.87	2.78	.99
6. Willingness to seek out new experiences	2.39	.93	3.02	.79	2.68	.79	3.16	.85
7. Awareness that systems can disadvantage groups of people	2.27	1.01	2.76	.93	2.56	.97	3.12	.88
Scale (averaging items)	2.00	.67	2.69	.77	2.35	.68	2.99	.72

experience had an effect on their interactions with students from different religious beliefs (item 2), but less likely to agree that it contributed to their interacting with students of different ethnicities (item 1). Rankings of other items were fairly consistent across groups.

The scores for students' intentions to participate in future community service activities can be seen in Table 11 (note that these items were responded to on a

Table 10: Rank order of the contribution of the experience to diversity outcome items

Item	Curricular		Co-curricular	ARAC
	Low reflection	High reflection		
6. Willingness to seek out new experiences	1	1	1	1.5
7. Awareness that systems can disadvantage groups of people	2	3	2	3
1. Interacting with students of a race or ethnicity different than your own	3	2	5.5	1.5
3. Understanding of people from races/ethnicities different than your own	4	4	4	4
2. Interacting with students of different religious or political backgrounds	5	5	3	5
5. Understanding diverse cultural, political and intellectual views	6	6	5.5	7
4. Understanding how your race(s) shape your identity	7	7	7	6

Note: Values that were equal or within .01 of each other received the same rating.

Table 11: Means and standard deviations on plans for future participation in community service activities for undergraduates involved in three types of service participation

Item	Curricular				Co-curricular		ARAC	
	Low reflection		High reflection					
	n = 148		n = 173		n = 160		n = 125	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Please indicate your level of agreement with each statement about your participation in service aside from this course and this semester:								
1. Before I graduate, I anticipate participating in community service activities again	4.12	1.04	4.16	.92	4.19	.81	4.11	.96
2. After graduation, I anticipate participating in community service activities	3.96	1.09	4.20	.76	3.89	.94	4.14	.85
Scale (averaging items)	4.04	1.02	4.18	.77	4.04	.76	4.13	.85

5-point scale rather than a 4-point scale). Differences between mean scores were not significant between any of the groups.

The next step in the analyses involved dividing the curricular group in terms of the subject matter of the service-learning courses. Students participated in fourteen classes on campus, although many of these classes were divided into multiple sections. These classes were combined into six different course groups: College Park Scholars, Education, Gemstone, Health, Honors, and University Courses.

College Park Scholars, Gemstone, and Honors are the three honors programs on campus. College Park Scholars is experience based, Gemstone is research based, and Honors is academically based. Education and Health are self-explanatory, and University Courses are orientation courses taken by freshman to help them get acclimated to college life. Table 12 illustrates mean scores on reflection items, as well as the total scale, for each of the groups. Course group did have a significant effect on mean scores of reflection ($F(5, 314) = 34.87, p < .0001$). Generally, College Park Scholars students gave the highest ratings, while Honors students gave the lowest ratings. Each groups' ranking of the items can be seen in Table 13.

The remaining dependent variables were examined to see if the type of service-learning course had an effect on additional outcomes. Using scale scores, course group had a significant effect on citizenship ($F(5, 320) = 6.61, p < .0001$), leadership ($F(5, 320) = 12.54, p < .0001$), diversity ($F(5, 320) = 8.71, p < .0001$), and future service ($F(5, 320) = 3.15, p < .01$). These findings suggest that the type of service-learning course, in addition to general service context, has a significant effect on outcome variables.

Table 12: Means and standard deviations on reflection items for groups of service-learning courses

Item	College Park Scholars		Education		Gemstone		Health		Honors		University Course	
	n = 32		n = 16		n = 144		n = 89		n = 34		n = 11	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Please indicate your level of agreement with each statement about your service-learning course.												
1. No participation in community service if not for this course	3.28	1.17	3.31	1.54	3.39	1.29	3.47	1.35	3.70	1.26	3.36	1.36
2. Helped me to apply subject matter to real world	4.19	.59	3.75	1.13	3.03	1.01	4.17	.76	2.88	.91	3.55	.69
3. Helped me to better understand course content	4.06	.63	3.50	1.03	2.78	.99	4.11	.75	2.62	.82	2.64	.50
4. Helped me to develop academic writing skills	3.50	.98	3.06	1.29	1.89	.92	2.87	1.04	2.18	.94	2.73	.65
5. Helped me to develop critical thinking skills	3.78	.91	3.50	.97	2.33	1.13	3.76	.83	2.24	.99	3.09	.94
6. More time should have been spent in the classroom ^a	1.84	.52	2.71	.99	2.37	1.06	2.19	1.02	2.44	.82	1.91	.54
7. The instructor was helpful in making connections	4.28	.58	3.75	1.06	3.67	1.01	3.90	.85	3.53	.96	3.91	.83
8. The readings were helpful in making connections	4.09	.73	3.69	.87	3.16	1.02	3.70	.87	3.12	.98	2.55	.93
9. The agency supervisor was helpful in making connections	3.50	1.05	2.81	1.05	2.69	1.08	3.67	.92	2.62	.92	2.55	.93
10. There should be more service-learning courses on campus	3.91	.78	3.81	1.05	3.32	1.20	4.02	1.01	3.29	1.17	3.72	.65
11. Helped clarify professional goals	3.34	.83	3.56	1.03	2.31	1.14	3.22	1.07	2.09	.75	3.55	.82
Scale (averaging items)	3.82	.48	3.45	.57	2.74	.70	3.67	.63	2.66	.61	3.07	.36

Note: The scale score excludes items 1, 6, and 10 because they did not specifically pertain to what was learned in class.

^a Reverse scored

Table 13: Rank order of the contribution of the service-learning course

Item	College Park Scholars	Education	Gemstone	Health	Honors	University Course
7. The instructor was helpful in making connections	1	1.5	1	3	1	1
2. Apply subject matter to real world	2	1.5	3	1	3	2.5
8. The readings were helpful in making connections	3	3	2	5	2	7.5
3. Better understand course content	4	5.5	4	2	4.5	6
5. Develop critical thinking skills	5	5.5	6	4	6	4
11. Helped clarify professional goals	8	4	7	7	8	2.5
9. The agency supervisor was helpful in making connections	6.5	8	5	6	4.5	7.5
4. Develop academic writing skills	6.5	7	8	8	7	5

Note: Values that were equal or within .01 of each other received the same rating.

Note: Ranking excludes items 1, 6, and 10.

In summary, there was an effect of service context on four of the five dependent variables. ARAC students consistently gave higher ratings than the other groups, followed closely by the high reflection curricular students. Low reflection curricular and co-curricular students alternated as to who gave the lowest ratings.

The hypothesis that the service-learning students would perceive a greater contribution of the service experience to citizenship and diversity outcomes was partially supported. The service-learning students who engaged in high reflection scored higher than the low reflection students as well as the co-curricular students, but not the ARAC students. The groups also had significantly different scores on the leadership scale, with the exception of the high reflection curricular and ARAC groups. Although ARAC students consistently gave higher ratings than the high

reflection curricular group, the mean difference was only significant on the diversity scale. The hypothesis that there would be variation within the curricular group was certainly supported. The high reflection group gave higher ratings than the low reflection group on all three developmental outcome scales, as well as on plans for future service participation.

Gender Differences

Similar descriptive statistics were established to compare outcomes of female and male participants (see Appendix E for tables). As indicated by the means, females gave more positive responses than males on every item in every scale. Using scale scores, gender had a significant effect on means of items related to citizenship ($F(1, 605) = 30.81, p < .0001$), leadership ($F(1, 605) = 26.54, p < .0001$), diversity ($F(1, 605) = 12.65, p < .0001$), future service ($F(1, 605) = 18.33, p < .0001$), and reflection ($F(1, 317) = 13.42, p < .0001$). These findings support the hypothesis that females would score higher than males on outcome scales.

Both genders tended to rank items similarly in terms of level of agreement, with a couple noteworthy differences. Females were more likely to believe that service participation contributed to their commitment to activities that were important to them, while males believed it had more of an influence on their being open to new ideas and acting in ways consistent with their values (relative to other items in the scale, not in comparison with each other).

Secondary Variables

Other independent variables that were examined were race, prior service experience, and major. Two groups were established for the race variable to compare

what has traditionally been viewed as racial minority and majority groups. The first group consisted of students who were African American, Asian Americans, Latino, Native American, Multi-racial, and Other. The second group consisted of Caucasian students. The racial minority group scored significantly higher than the majority group on mean scores of items related to citizenship ($F(1, 601) = 34.92, p < .0001$), leadership ($F(1, 601) = 29.33, p < .0001$), future service ($F(1, 601) = 6.87, p < .01$), and reflection ($F(1, 316) = 15.19, p < .0001$). A significant effect was also found for diversity ($F(1, 601) = 48.76, p < .0001$), but since the homogeneity of variance assumption was not met and the sample sizes do not appear to be similar enough, it is possible that the finding regarding the diversity scale is misleading.

Two groups were also established for the past service variable. Students whose means indicated an average response of 1, 2, or 3 on the questionnaire (strongly disagree, disagree, or neutral) were classified as low past service participation. Students whose means indicated an average of 4 or 5 on the questionnaire (agree and strongly agree) were classified as high past service participation. The students who reported higher levels of prior service experience were more likely to plan to participate in future service activities ($F(1, 610) = 38.76, p < .0001$). However, since the homogeneity of variance assumption was not met and the sample sizes are not similar enough, it is possible that this finding is misleading.

The final variable to be examined was student major, where again two groups were established to enhance comparisons. The first group was comprised of majors which awarded a B.A. or both a B.A. and a B.S. to their students (for clarity, this group will be referred to as the B.A. group). These majors were Arts and Humanities,

Education, Journalism, and Social Sciences. The second group was comprised of colleges that offered only a B. S., which included Agriculture, Architecture, Business, Engineering, Health, Letters and Sciences², Life Sciences, and Physical Sciences. The B.A. students rated items higher than the B.S. students, resulting in a significant effect of major on mean scores of citizenship ($F(1, 598) = 15.00, p < .0001$) and diversity items ($F(1, 598) = 8.19, p < .01$). There was also a significant effect on leadership items ($F(1, 598) = 13.72, p < .0001$), where homogeneity of variance could not be assumed, but it was not problematic.

Context and Secondary Variables

It has already been reported that context and gender both had a significant main effect on the majority of the outcome scales. Next, two way ANOVAs were run to examine the interaction of these two independent variables. There was a significant interaction between context and gender on mean scores of items related to citizenship ($F(3, 593) = 3.33, p < .05$), leadership ($F(3, 593) = 3.06, p < .05$), diversity ($F(3, 593) = 2.98, p < .05$), and reflection ($F(1, 315) = 4.23, p < .05$). The mean scores and standard deviations on context, gender, and the five dependent variables are summarized in Table 14. For females, the ARAC experience was consistently associated with the highest mean outcomes. For males, high reflection curricular students received the highest means for the citizenship and leadership outcomes. Within each context, ARAC shows the largest difference between mean

²At the University of Maryland Letters and Sciences is the equivalent of an undecided major. Although there are some students who truly have not selected a major, the majority of students in Letters and Sciences have been denied acceptance to Limited Enrollment Programs (LEPs). LEPs have prerequisites, such as GPA or SAT requirements, and when students do not meet the criteria they are automatically placed into Letters and Sciences. Most of the LEPs are B.S. programs, such as Business and Engineering, therefore Letters and Sciences was classified with the B.S. majors.

Table 14: Means and standard deviations on dependent variables by context and gender

Variable	Curricular				Co-curricular		ARAC	
	Low reflection		High reflection					
	n = 78 females n = 70 males		n = 106 females n = 65 males		n = 104 females n = 54 males		n = 95 females n = 29 males	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Citizenship	2.12	.77	2.72	.68	2.46	.68	2.91	.68
Female	2.26	.70	2.81	.64	2.47	.67	3.05	.66
Male	1.96	.81	2.57	.72	2.43	.72	2.43	.52
Leadership	2.22	.76	2.87	.66	2.68	.62	3.04	.64
Female	2.34	.71	2.95	.66	2.70	.61	3.18	.58
Male	2.08	.80	2.77	.64	2.65	.64	2.59	.62
Diversity	2.00	.67	2.69	.77	2.35	.68	2.99	.72
Female	2.13	.66	2.72	.77	2.32	.65	3.09	.73
Male	1.86	.66	2.66	.78	2.42	.75	2.69	.57
Future Service	4.04	1.02	4.18	.77	4.04	.76	4.13	.85
Female	4.26	.89	4.32	.70	4.13	.75	4.14	.92
Male	3.80	1.11	3.95	.84	3.84	.76	4.12	.58
Reflection	2.44	.52	3.71	.46				
Female	2.59	.39	3.74	.46				
Male	2.27	.59	3.64	.45				

Note: Citizenship, leadership, and diversity scales were scored on a 4-point scale while future service and reflection were scored on a 5-point scale.

scores by gender, while the co-curricular group has rather small differences. When examining the three developmental outcomes, the biggest difference between scores occurs for citizenship, followed by leadership and diversity, respectively.

Although context and race both had significant main effects on most of the dependent variables, there was no interaction between them on any of the five scales. Significant interactions occurred between context and major on mean scores for citizenship ($F(3, 586) = 2.79, p < .05$) and diversity items ($F(3, 586) = 3.00, p < .05$). The means and standard deviations for each group can be seen in Table 15. The low reflection curricular and co-curricular students in B.A. majors rated items higher than the students in B.S. majors. In the high reflection curricular group, the B.S. students had higher ratings than the B.A. students. There was barely a difference

Table 15: Means and standard deviations on dependent variables by context and major

Variable	n	Curricular				Co-curricular		ARAC	
		Low reflection		High reflection					
		n = 148		n = 173		n = 160		n = 122	
		Mean	SD	Mean	SD	Mean	SD	Mean	SD
Citizenship		2.12	.77	2.72	.68	2.45	.68	2.90	.68
B.A. ^a	267	2.33	.86	2.69	.68	2.60	.68	2.90	.72
B.S.	327	2.04	.72	2.74	.68	2.28	.64	2.90	.59
Diversity		2.00	.67	2.69	.76	2.35	.69	2.99	.72
B.A.	267	2.18	.82	2.56	.71	2.44	.69	2.98	.73
B.S.	327	1.94	.60	2.77	.78	2.25	.68	3.00	.69

^a Majors were divided into two groups based on the degrees awarded to students. Group 1 consisted of programs which awarded either a B.A. or a B.A. and a B.S. (Arts and Humanities, Education, Journalism, and Social Sciences). Group 2 consisted of majors which only offered a B.S. (Agriculture, Architecture, Business, Engineering, Health, Life Sciences, Physical Sciences, and Undecided).

in mean scores for the ARAC students. Overall, the difference between the B.A. and B.S. scores was largest in the low reflection and co-curricular groups. It appears that the reflection component of service-learning classes may be especially valuable to B.S. students, as the high reflection B.S. students scored much higher than the low reflection B.S. students on both outcome variables.

Since there was a significant interaction between context and gender on most of the dependent variables, and not as many between context and the other variables, two-way ANOVAs were run to examine the interaction between gender and the other secondary variables. Although main effects were significant, no significant interactions were found between gender and race, gender and prior service, or gender and major. A summary of the ANOVA findings regarding all of the independent and dependent variables can be found in Appendix F.

DISCUSSION

Synthesis and Analysis

The purpose of this study has been to investigate whether participation in service activities is associated with perceptions of developmental outcomes, and if these outcomes are influenced by either the context of the service or the gender of the participants. Significant effects of both context and gender were found for citizenship, leadership, and diversity outcomes, as well as other examined variables. Although not of primary interest in this particular study, it is important to note that ARAC students consistently reported higher scores than curricular and co-curricular students, particularly among the female students. These findings will briefly be discussed. However, because of its connections to previous research, the findings on the curricular and co-curricular students will be the focus of this discussion.

ARAC students' higher ratings may be a reflection of the type of students that are involved in ARAC in comparison to the service-learning or co-curricular activities. Unfortunately, there is no pre-test data to enable comparison but it is possible that the ARAC students would have reported higher scores on the developmental outcome scales prior to the service experience. A more plausible explanation is that ARAC students spent more time in the community, which contributed to the experience having a greater effect on perceived outcomes. One of the requirements of the ARAC program, because these students are receiving stipends for their involvement in the community, is that the undergraduates tutor children in elementary schools approximately two hours a day, two to five times a week. Although there are no exact numbers to compare, it is likely that the ARAC students

spent more time in the community than the curricular and co-curricular students. It should also be considered that ARAC students are provided compensation for their service oriented work in the community, and should therefore be classified as employees rather than volunteers.

The difference in scores by gender was most evident in the ARAC group. Although differences between the female and male reported scores were surprisingly large, this finding is consistent with prior research on gender differences in helping behavior. Eagly et al. (1986) reported that males were more likely to display short-term or chivalrous behavior, while females were expected to display long-term, or relational, helping behavior. The ARAC students spent a significant amount of time in the elementary schools. This commitment of time and energy, including building a relationship with the tutee, relates more to the kind of helping behaviors that females are likely to display. The amount of time spent in the schools may have exacerbated gender differences that were present in the other service contexts, but were not as strong. An additional explanation for the gender difference in outcome scores is that employees in elementary schools, such as teachers and administrators, are predominately female. Female undergraduates may have felt more comfortable while males may have been apprehensive because of the lack of male figures to relate to in the elementary school setting. These findings regarding ARAC students' high reported scores on outcomes, and gender differences within the group, are certainly deserving of further research.

Returning to the primary groups of interest, in order to get a better understanding of the service-learning experience in relation to co-curricular service, it

was important to look within the curricular group to compare the low reflection students with the high reflection students. The assumption that reflection plays an integral part in service-learning courses was supported by the high reflection students' higher level of positive outcomes on citizenship, leadership, diversity, and reflection scales. In addition to reporting higher scores than the low reflection students, the high reflection students also gave significantly higher ratings than the co-curricular students. These findings indicate that high reflection curricular students believe that they gain more from their service experience than students in the other service groups. The amount and degree of reflection appears to have contributed to students' perceived achievement of developmental outcomes, which is consistent with prior research by Eyler and Giles (1999) and Youniss and Yates (1997). A more detailed discussion of reflection, in terms of social cognitive theory, will be found in the next section.

It is important to note some key differences between the low reflection curricular, high reflection curricular, and co-curricular students, and specifically the ranking of items that were important to them on the various scales. Relative to their mean scores on other items, low reflection curricular students did not believe that the experience contributed to their respecting others' opinions, but it did make them open to new ideas. This may indicate that low reflection students were exposed to others' ideas and opinions, but not the discussion and critical analysis that encourage the understanding and appreciation of those ideas.

High reflection curricular students did not think that the experience helped them to act in ways consistent with their values, but it did contribute to their

committing to activities that were important to them. This may mean that these students were already acting in ways consistent with their values. Their values were then further validated, which promoted regulation and encouraged them to continue participating in such activities.

In contrast, co-curricular students reported that the service experience made them want to participate in more service activities on campus (with a mean score higher than the two curricular groups), but not to participate in service after graduation (with a mean score lower than the other groups). This implies that the co-curricular students were more interested in the social and personal aspects of service rather than other intrinsic or extrinsic motivators.

Co-curricular students also did not think that the experience helped foster interactions with students of different races or ethnicities, but reported that they were more likely to interact with students from different religions or political beliefs. The interaction with the other volunteers, rather than with the community members they were helping, may be involved in this finding.

Gender differences were also found on all scales, with females consistently reporting higher scores than males, as were interactions between gender and context on four of the five scales. The finding that females gave significantly higher ratings than males on all dependent variables supports Eagly's (1987) theory on gender differences in helping behavior and may indicate that the two genders are taking something different from their service experiences. Females reported that the experience contributed to their commitment to activities that are important to them, while males believed that the experience helped them to be open to new ideas and act

in ways consistent with their values. Overall, females and males tended to rank items and their contributions in a similar manner even though means for females were always higher.

Using Social Cognitive Theory to Interpret Findings

The current findings, in addition to other findings in the service-learning field, can be examined within the framework of SCT. The reciprocal relationship between the environment, behavior, and personal factors can be used to interpret the developmental outcomes that result from service participation. These outcomes indicate that the experience of changing, or expanding, one's environment positively influences behavior and personal factors. Service participation can actually change personal factors such as values, beliefs, opinions, and intentions, also known as one's character. These cognitive changes can be expected to affect behavior, such as reactions to diverse groups of people, attention given to social issues, and future civic engagement. Prior research that has employed a pre- and post-test design has found that service participation has an effect on numerous outcomes. The current study does not have pre-test data, however, students' perceptions of their beliefs and intentions indicate that the experience had an effect on their cognition and intended actions. Personal factors and behavior can also influence the environment through the effect that volunteers have on the people they are serving. The effect of service on the community is beyond the scope of this study, but based on reciprocal causation, changes in cognition and behavior will subsequently have an effect on the environment.

Not only is service participation expected to have a positive effect on people in the surrounding environment, but it is also beneficial to the volunteer, as depicted by the reported scores on developmental outcomes. Mean scores indicate that students believed that the service experience contributed to their development in multiple domains. These outcomes are the result of the cognitive evaluation of the direct behavioral experience and indirect observations of teachers, peers, and community members modeling prosocial behavior. Observational learning enables students to gain knowledge and experience from the direct interactions with the community members they are serving. They also observe their teachers' and peers' interactions, which enables them to experience the positive results of others' actions in addition to their own.

Once the attentional processes of observational learning have occurred, the positive outcomes associated with service participation are cognitively processed and turned into symbols. These symbols are vital to the transition from observing a behavior to displaying a behavior, as they enable the retention of the positive experience and lead to production processes such as forethought. Forethought refers to the expectation that positive outcomes, for self and others, are associated with participation in community service and service-learning, as indicated by students' (in all contexts) belief that participation in community service can solve social problems. The confidence that one can generate positive outcomes in the future can serve as a current motivator for the development of standards that value service participation.

The development of higher personal standards signifies an increase in self-regulation, and possibly in moral reasoning. The students expect more of themselves

because they know that their actions can produce positive results. However, moral judgment is not translated into moral behavior without motivation, either internal or external (Nucci, 2002). Motivational reinforcers, such as a sense of accomplishment, caring for and helping people, or making a general contribution to society, provide the incentive to display a behavior as well as encourage self-regulation through the evaluation of actions. An important contributing factor in self-regulation, especially in the case of service-learning, is reflection.

Reflection in service-learning courses contributes to developmental outcomes because the analysis of the service experience enables students to think critically about their thoughts and behavior, interpret the significance of the service experience, and understand what the implications are for their surrounding world (Killen & Horn, 2000). Prior research shows that students in service-learning courses report greater increases in outcomes, in comparison to students in traditional courses, indicating that competence is facilitated by the incorporation of community service and coursework through reflection. Structured reflection employs critical analysis of experiences and issues, which leads to an increase in knowledge of the self, community, and society. Researchers have found that reflective processes, such as essay writing and group discussions, when combined with a service activity contributed to political and moral identity formation, and that reflective capabilities and compassion increased throughout the service-learning experience (Yates & Youniss, 1998; Youniss & Yates, 1999).

However, participation in a service-learning course does not necessarily mean that students are provided the guidance that may be required for meaningful

reflection. When examining the effect of program characteristics on student outcomes, Eyler and Giles (1999) found that a high level of reflection was vital to the learning process and that extensive discussion and writing about their service experience fostered students' understanding of community problems. The present study strengthens the assertion that reflection is a critical component of service-learning as there is a clear distinction between reported scores for the low and high reflection groups. When the service component of the course was not well-integrated with the classroom material, students' did not gain the same complex understanding. This comprehension may be necessary for the experience to contribute to an increase in efficacy beliefs.

Many of the research findings in the service-learning field indicate that engagement in service does have a positive effect on self-efficacy. Doing things for other people has the potential to make students feel good about the contribution they have made and their ability to produce desired outcomes for themselves and others. This results in a sense of empowerment and social confidence, which is indicated by students' affirmative responses to citizenship items regarding intent to practice volunteerism and activism in the future.

The constructs associated with SCT have contributed to the understanding of how and why undergraduate students are positively influenced by service engagement, and particularly by service-learning courses that incorporate reflection. Community service and service-learning both promote development in areas that are not always stressed in higher education. In this study the experiences have been found to have a significant effect on citizenship, leadership, and diversity outcomes.

Context of Findings

There is little research on the relevance of service context, which is why these findings are potentially beneficial to the service-learning field. Astin and Sax (1998) reported that students involved in co-curricular service were more satisfied with community service and leadership opportunities on campus. This was supported in the present study in that co-curricular students reported the highest rate of intentions to continue to participate in service activities while on campus. Astin and Sax (1998) also found that service-learning students had an increased understanding of the nation's problems. This was somewhat supported because high reflection curricular students did report higher scores than low reflection and co-curricular students on interest in addressing national social problems. However, in comparison to the contribution of the service experience to other outcomes, students ranked it as the least contributed factor in the citizenship scale.

When examining different service activities Vogelgesang and Astin (2000) found that the service-learning experience, in contrast with co-curricular service, had a stronger influence on racial understanding and intended activism. They found no increased benefit in leadership or future plans. Findings from the current study are both consistent and inconsistent with their research in that high reflection curricular service was associated with higher scores on diversity and activism outcomes, but also on leadership items. There was no differential effect of context, or prior service experience, on intended future service, which both supports and contradicts previous findings. The finding that prior service participation is not associated with future

service participation is somewhat surprising and should be explored further because of the implications for service requirements in primary and secondary education.

The findings in this study are generally consistent with research on service-learning and community service in that participation in service is associated with citizenship, leadership, and diversity outcomes. However, this study has gone a step further to examine the differential experiences based on the context of service. It is important to compare the curricular with the co-curricular service experience, but just as significant are the differences between the low reflection and high reflection curricular groups. Current findings indicate that not all service-learning classes should be considered equal.

This study also contributes much needed information on gender differences in outcomes associated with service participation. There is an inadequate amount of information in this area, while reports of demographic correlates of service participation abound. Therefore, it is still useful to look at related fields for their findings on gender differences. Concerning pro-social behavior, although males are more likely to display short term helping behavior, it is believed that females will be more likely to display long-term helping behavior (Eagly & Crowley, 1986). This assertion was supported in this study because females reported significantly higher scores than males on intentions to participate in long-term helping behaviors such as commitment to lifelong involvement in the community. In addition, the group that participated in constant service throughout the semester (ARAC) had females reporting more positive outcomes than males. This indicates that females' service experience had a greater contribution to their moral commitment and behavior.

However, this contradicts previous findings that service participation resulted in greater gains in moral reasoning for males than females (Boss, 1994). It is not clear specifically how service experience is related to moral reasoning and development, but this complex topic certainly warrants further investigation.

Although the findings on gender differences in reported outcomes may be supported by research on long term helping behavior, there are other variables that could influence gender differences in ratings of the contribution of the service experience. For instance, males may have given lower ratings because of gender norms and social expectations that females are more nurturing and relational, and therefore would be more affected by this type of service experience. The findings could also indicate that males do not respond to certain types of service activities (e.g. tutoring children), but may benefit more from hands on physical activities such as coaching a sports team.

Implications

There are a few noteworthy findings that can improve our understanding of the service experience and its effect on undergraduate students. First, reflection is vital to the service-learning experience and can have a significant effect on developmental outcomes in comparison with co-curricular service. Instructors' efforts to connect service activities to course content are especially vital. Second, the context of the course itself, such as the department in which it is offered or the subject matter, also plays an important role in the effect of the experience. Third, it is clear that service experiences have differing effects on females and males (especially for ARAC students) which should be taken into consideration when planning programs.

Lastly, participation in community service, regardless of context, appears to lead to students applying the experience to their world in a concrete, rather than a highly conceptual, manner.

Participation in service is a tangible experience, and therefore it should be expected that students would relate their experience to concrete concepts such as learning from the community and working well with others. Abstract notions, such as articulating life priorities, are not focused on and not directly relevant to the service experience. This finding is not surprising or disappointing; rather it is encouraging because it indicates that these students are learning what they are being taught. If students are to be expected to conceptualize the experience into a broader context this will need to be incorporated into the curriculum and reflection activities.

Reflection is possibly the most integral component of a service-learning course. Students can participate in service through various organizations and programs, but they are not often provided with the opportunity to think critically about the experience and its relevance to their lives. The reflection component is what leads to an understanding of one's own cognition and behavior, as well as an increase in knowledge of the surrounding world (Bandura, 1986). Students who are encouraged to participate in multiple aspects of reflection are able to achieve a deeper understanding of what they have experienced through exchanging views and opinions with other students, faculty, and community members. This enables students to generally process their service experience and make connections they may not have otherwise. The importance of reflection was evidenced by the contrasting reported scores of high reflection and low reflection students. More findings which support

this assertion may be necessary to encourage universities to implement training for faculty members who teach service-learning courses. Instructors need to know how to properly guide and support reflection in the classroom to maximize development.

It seems evident that program changes and policies regarding service-learning courses should not be universal to every course department, or university. For instance, on the University of Maryland campus, students who participate in the Honors program likely have very different personal factors and prior experiences than students involved in College Park Scholars. Since the Honors students are typically more academically oriented, service-learning classes should focus more heavily on the coursework while still integrating the service component. Conversely, service-learning classes that are primarily comprised of College Park Scholars students can focus more on the service as these students are typically more experience oriented. These two groups should have varying opportunities as far as service placement and reflection activities to enable them to gain the most from their experience.

Just as students in different academic programs have different personal factors, it seems that the personal factor of gender can affect the outcomes associated with service participation. Programs that include female and male students need to understand what approaches are beneficial for both genders so that all students can benefit from service programs. The same can be said for the personal factor of race. It seems that students of different races are achieving varied developmental outcomes, and therefore experiencing service in different ways. Again, it is important to understand what approaches are beneficial to whom in order to ensure that all

students gain the most from their service experience. Clearly, more research is needed on the differential effects of gender, as well as race

Limitations

Although this study provides support for the significant effects of context and gender on outcomes associated with service participation, it is an exploratory study and not without limitations. If I had been involved in the development and distribution of the measure I would have implemented a few changes. Currently, the study uses post-test (rather, post-experience) self-report data on perceived outcomes, and has no pre-test for comparison. I would have preferred to employ pre- and post-test measures in order to observe the change in perceived, or actual, outcomes rather than just asking participants to assess perceived change after the experience. Unfortunately, self-report questionnaires cannot measure actual outcomes, although researchers often report it as such, so additional measures would have to be employed to examine actual developmental outcomes.

The measure employed in this study has insufficient reliability and validity information on the entire instrument, although it was clear that the individual scales were very reliable. Given more time I would have conducted pilot studies to test these psychometric properties. I also would have utilized more equivalent questions across the three variations of the measure to enable comparison of other variables, such as the number of service hours completed in each group. There is also the possibility of a social desirability bias with this measure as all of the questions were positive and reflected attributes that are encouraged in our society, and certainly at the university level. However, students were asked to report how the service experience

contributed to these factors, not necessarily how they assessed themselves on these factors. Participants may have been less likely to report what was socially acceptable since it is not a direct reflection of who they are as a person. Further, this may have been seen as similar to a course evaluation on which students are used to making critical comments of their courses and instructors.

Regarding the sample, females are overrepresented although in this age group females typically participate in service activities more than males. There were also too few minority students to make clear comparisons across all races. This is also a difficult issue to address because White students are generally overrepresented on college campuses. The final limitation of the sample is that the curricular group was larger than the other service groups, although this problem was resolved when the group was divided into low and high reflection.

The primary statistical limitation of the present study is that the data did not always meet the ANOVA assumption of homogeneity of variance. This was problematic in a couple cases where the sample sizes were too dissimilar, but in general the analyzed groups (particularly context) were robust to this violation of assumptions.

The methodology, and consequently the limitations, involved in this study are fairly representative of the service-learning field. Because of these recurring shortcomings it might be useful to mention what an ideal study could look like in this area of research. The incorporation of quantitative and qualitative measures, similar to those employed by Youniss and Yates (1997), would be useful to measure actual developmental outcomes, and also to further examine the effect of reflection on the

service-learning experience. First, pre- and post-test questionnaires would be distributed to allow students to assess their own beliefs, goals, and abilities. Although there is the possibility of a social desirability bias, it would still be useful to see the change in reported outcomes as a possible result of the service rather than just a report of perceived change after the experience. It would be important to employ qualitative measures, such as essays, journals, group discussions, and observation, to get a deeper understanding of the processes associated with developmental change. Observational data may also enable the evaluation of actual outcomes, such as a students' increase in leadership ability during class discussions. Finally, these data could provide more precise information regarding the level of reflection, especially if a control group was employed, and the subsequent effect on student outcomes. It would be incredibly valuable if a study with this design was utilized in the service-learning field to not only adhere to a higher methodological standard, but also to provide findings that are not merely suggestive.

Future Research

It is important for more studies to look at the variation in long-term outcomes associated with different contexts of service to see if indeed curricular, and specifically high reflection curricular, service is more beneficial to students. Incorporation of reflection should have immediate effects on self-regulation, and possibly long-term effects on moral standards and self-efficacy. Longitudinal studies will have to be employed to examine these long-term effects.

The service experience will also vary as a function of context, as has been exemplified in this study. Different service contexts taking place in various

environments should affect who the students interact with, including peers and community members. Diverse environments will provide different opportunities for observational learning. This explanation for the significant effect of context on developmental domains warrants further research.

Future research should also look at gender differences as there was an apparent effect of gender on all examined outcomes. Gender may be one of the most significant personal factors that someone can bring to a situation, therefore having a differential effect on the environment, as well as varying capacities for regulation and reflection. Research on the actual experience of service, in addition to outcomes, would be useful when examining gender differences.

Other independent variables that need closer examination are major and course topic. Not only do the students who take service-learning classes likely differ in terms of personal factors, but the actual service experience will vary because of the inherently different subject matter and therefore placement of service.

Lastly, there is always room for methodological improvements in the social sciences. In the service-learning field there is still a need for uniformity of measures and operational definitions so that researchers can be confident that they are examining the same variables. There have been some improvements in design, such as observational or longitudinal studies, but these are just beginning to be implemented. It is important to examine variables qualitatively, in addition to quantitatively, as this may be the best way to get to the foundation of human interaction and development.

Conclusion

If one thing is evident it is that regardless of context, undergraduate students believe that participation in service activities is contributing to their development in multiple domains. These findings contribute to a body of evidence that supports and encourages service based programs on college campuses because of their contribution to development. Research on the effect of these experiences, and ways to optimize it, should be a focus of academic scholars and university administrators. Participation in service, and in particular service-learning courses which thoroughly integrate reflection, is a way for higher education institutions to contribute to the multi-faceted development of their students, and to play a part in the betterment of society.

Appendix A:

Curricular Service-Learning Survey: Spring 2003

The University of Maryland would like to better understand the impact that service-learning has on students, particularly how this experience has influenced your perspective on learning, your view of service, and your perspective of working in a diverse community. For each question, check the box indicating your response.

Name of the service-learning course in which you are enrolled:	The course code and number (e.g., EDCP 317):
Name of agency with which you worked:	

1. Please indicate your level of agreement with each statement about your service-learning course.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I would not have done community service work this semester if I had not done it through <u>this course</u> .	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The community service component of this course helped me to see how the subject matter I learned can be applied in the real world.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The community work I did through this course helped me to better understand the course content (e.g., lectures and readings).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The community work I did in this course helped me to develop my academic writing skills.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The community work I did in this course helped me to develop my critical thinking skills.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel I would have learned more from this course if more time was spent in the classroom instead of doing community work.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The <u>course instructor</u> helped me make connections between the service activity and the course content.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The <u>course readings</u> helped me make connections between the service activity and the course content.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The <u>agency supervisor</u> helped me make connections between the service activity and the course content.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The idea of combining service in the community with University coursework should be practiced in more classes at the University of Maryland.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The community service component of this course helped me clarify my professional goals.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Please indicate your level of agreement with each statement about your participation in service aside from this course and this semester.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Before I came to UM, I participated in community service activities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I participated in community service at UM prior to this experience.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Before I graduate from UM, I anticipate participating in community service activities again.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
After graduation from UM, I anticipate participating in community service activities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Yes	No	
I have used the Community Service Office website (www.umd.edu/CSP).	<input type="checkbox"/>	<input type="checkbox"/>	
I have visited the on-campus Community Service Office (1150 Stamp Student Union).	<input type="checkbox"/>	<input type="checkbox"/>	
My high school had a community service requirement for graduation.	<input type="checkbox"/>	<input type="checkbox"/>	If yes, how many hours were required:

3. To what extent has your community service experience contributed to your:

	Very Little	Some	Quite A Bit	Very Much
interacting with students of a race or ethnicity different than your own	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
interacting with students of different religious or political backgrounds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
understanding of people from races/ethnicities different than your own	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
understanding how your race(s) shape your identity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
understanding diverse cultural, political and intellectual views	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
willingness to seek out new experiences	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
awareness that systems can disadvantage groups of people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
knowing/articulating your priorities in life	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
acting in ways consistent with your values	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
committing to activities that are important to you	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ability to work well with others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ability to foster a shared vision when working with others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

respecting opinions other than your own	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
comfort level with conflict	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ability to work in changing environments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
openness to new ideas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ability to learn from the community what its needs are	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ability to examine social problems in order to address root causes as well as immediate needs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
interest in addressing national or global social problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
commitment to lifelong involvement in the community to address social problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
belief that individuals or groups doing community service can solve social problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
belief that individuals or groups taking political action can solve social problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
belief that it is your responsibility as someone who lives in the community to be involved in solving the community's social problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

What is your racial background (check all that apply)?

- ☐ African/African American
☐ Asian/Asian American
☐ Caucasian/White
☐ Latino/a
☐ Native American
☐ Bi/Multi-racial
☐ Other

What is your current college(s)?

- ☐ AGNR ☐ EDUC
☐ ARCH ☐ ENGR
☐ ARHU ☐ HLHP
☐ BMGT ☐ JOUR
☐ BSOS ☐ LFSC
☐ CMPS ☐ L & S

What is your gender?

- ☐ Male
☐ Female
☐ Transgender

How many hours/week do you work?

- ☐ None
☐ 1-10
☐ 11-20
☐ 21-30
☐ 31-40
☐ more than 40

What is your age?

- ☐ 17 or less
☐ 18-19
☐ 20-21
☐ 22-23
☐ 24 or older

What is your place of residence this semester?

- ☐ Residence hall
☐ Commons/Courtyard
☐ Fraternity/sorority
☐ Your family's home
☐ Other off-campus housing

How many college credits have you earned?

- ☐ 1-29 (freshman)
☐ 30-59 (sophomore)
☐ 60-89 (junior)
☐ 90-120 (senior)
☐ more than 120

Where did you do most of your service for this class?

- ☐ On Campus
☐ Prince George's County
☐ Montgomery County
☐ Washington, DC
☐ In or near Baltimore
☐ Other

Appendix B:

C6 Curricular Service-Learning Survey: Spring 2003

The University of Maryland would like to better understand the impact that service-learning has on students, particularly how this experience has influenced your perspective on learning, your view of service, and your perspective of working in a diverse community. For each question, check the box indicating your response.

1. Please indicate your level of agreement with each statement about your community service experience in a student organization.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I would not have done community service work this semester if I had not done it through a student organization.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I chose to join a student organization because of the community service opportunities it offered.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Through our community service, the members of our group got to know each other better.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Doing service with a student organization allowed our group to develop teamwork skills.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Because of the community service I did, I feel more engaged <u>ON</u> campus.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Because of the community service I did, I feel more engaged <u>OFF</u> campus.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
This community service experience helped me clarify my professional goals.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Please indicate your level of agreement with each statement about your participation in service aside from this course and this semester.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Before I came to UM, I participated in community service activities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I participated in community service at UM prior to this experience.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Before I graduate from UM, I anticipate participating in community service activities again.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
After graduation from UM, I anticipate participating in community service activities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Yes	No	
I have used the Community Service Office website (www.umd.edu/CSP).	<input type="checkbox"/>	<input type="checkbox"/>	
I have visited the on-campus Community Service Office (1150 Stamp Student Union).	<input type="checkbox"/>	<input type="checkbox"/>	
My high school had a community service requirement for graduation.	<input type="checkbox"/>	<input type="checkbox"/>	If yes, how many hours were required:

3. To what extent has your community service experience contributed to your:

	Very Little	Some	Quite A Bit	Very Much
interacting with students of a race or ethnicity different than your own	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
interacting with students of different religious or political backgrounds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
understanding of people from races/ethnicities different than your own	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
understanding how your race(s) shape your identity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
understanding diverse cultural, political and intellectual views	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
willingness to seek out new experiences	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
awareness that systems can disadvantage groups of people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
knowing/articulating your priorities in life	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
acting in ways consistent with your values	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
committing to activities that are important to you	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ability to work well with others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ability to foster a shared vision when working with others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
respecting opinions other than your own	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
comfort level with conflict	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ability to work in changing environments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
openness to new ideas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ability to learn from the community what its needs are	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ability to examine social problems in order to address root causes as well as immediate needs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
interest in addressing national or global social problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
commitment to lifelong involvement in the community to address social problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
belief that individuals or groups doing community service can solve social problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
belief that individuals or groups taking political action can solve social problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
belief that it is your responsibility as someone who lives in the community to be involved in solving the community's social problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

What is your racial background (check all that apply)?

- ☐ African/African American
- ☐ Asian/Asian American
- ☐ Caucasian/White
- ☐ Latino/a
- ☐ Native American
- ☐ Bi/Multi-racial
- ☐ Other

What is your gender?

- ☐ Male
- ☐ Female
- ☐ Transgender

What is your age?

- ☐ 17 or less
- ☐ 18-19
- ☐ 20-21
- ☐ 22-23
- ☐ 24 or older

How many college credits have you earned?

- ☐ 1-29 (freshman)
- ☐ 30-59 (sophomore)
- ☐ 60-89 (junior)
- ☐ 90-120 (senior)
- ☐ more than 120

Approximately how many hours of community service have you completed with your student group this year?

- ☐ 1-25 hours
- ☐ 26-50 hours
- ☐ 51-75 hours
- ☐ 76-100 hours
- ☐ more than 100 hours

Name of student group(s) you do most of your service with:

What is your current college(s)?

- | | |
|-------------------------------|--------------------------------|
| <input type="checkbox"/> AGNR | <input type="checkbox"/> EDUC |
| <input type="checkbox"/> ARCH | <input type="checkbox"/> ENGR |
| <input type="checkbox"/> ARHU | <input type="checkbox"/> HLHP |
| <input type="checkbox"/> BMGT | <input type="checkbox"/> JOUR |
| <input type="checkbox"/> BSOS | <input type="checkbox"/> LFSC |
| <input type="checkbox"/> CMPS | <input type="checkbox"/> L & S |

How many hours/week do you work?

- ☐ None
- ☐ 1-10
- ☐ 11-20
- ☐ 21-30
- ☐ 31-40
- ☐ more than 40

What is your place of residence this semester?

- ☐ Residence hall
- ☐ Commons/Courtyard
- ☐ Fraternity/sorority
- ☐ Your family's home
- ☐ Other off-campus housing

Where did you do most of your service?

- ☐ On Campus
- ☐ Prince George's County
- ☐ Montgomery County
- ☐ Washington, DC
- ☐ In or near Baltimore
- ☐ Other

Approximately how many hours of community service have you completed on your own this year?

- ☐ 1-25 hours
- ☐ 26-50 hours
- ☐ 51-75 hours
- ☐ 76-100 hours
- ☐ more than 100 hours

Name of primary community agency you worked with (if applicable):

Appendix C:

AR*AC Service-Learning Survey: Spring 2003

The University of Maryland would like to better understand the impact that service-learning has on students, particularly how this experience has influenced your perspective on learning, your view of service, and your perspective of working in a diverse community. For each question, check the box indicating your response.

1. Please indicate your level of agreement with each statement about your experience in America Reads* America Counts.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I would not have done community service work this semester if I had not done it through a Federal Work-Study position.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In choosing my future career, I would prefer positions that allow my work to benefit the community.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
This experience influenced my decision to explore education as a possible career major.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
This experience helped me clarify my professional goals.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Please answer the following two questions if you are an EDUCATION MAJOR ONLY</i>					
This experience confirmed my decision to major in education.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
This experience influenced my decision to change my major from education to another field.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Please indicate your level of agreement with each statement about your participation in service aside from this course and this semester.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Before I came to UM, I participated in community service activities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I participated in community service at UM prior to this experience.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Before I graduate from UM, I anticipate participating in community service activities again.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
After graduation from UM, I anticipate participating in community service activities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Yes	No	
I have used the Community Service Office website (www.umd.edu/CSP).	<input type="checkbox"/>	<input type="checkbox"/>	
I have visited the on-campus Community Service Office (1150 Stamp Student Union).	<input type="checkbox"/>	<input type="checkbox"/>	
My high school had a community service requirement for graduation.	<input type="checkbox"/>	<input type="checkbox"/>	If yes, how many hours were required:

3. To what extent has your community service experience contributed to your:

	Very Little	Some	Quite A Bit	Very Much
interacting with students of a race or ethnicity different than your own	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
interacting with students of different religious or political backgrounds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
understanding of people from races/ethnicities different than your own	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
understanding how your race(s) shape your identity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
understanding diverse cultural, political and intellectual views	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
willingness to seek out new experiences	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
awareness that systems can disadvantage groups of people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
knowing/articulating your priorities in life	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
acting in ways consistent with your values	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
committing to activities that are important to you	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ability to work well with others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ability to foster a shared vision when working with others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
respecting opinions other than your own	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
comfort level with conflict	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ability to work in changing environments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
openness to new ideas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ability to learn from the community what its needs are	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ability to examine social problems in order to address root causes as well as immediate needs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
interest in addressing national or global social problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
commitment to lifelong involvement in the community to address social problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
belief that individuals or groups doing community service can solve social problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
belief that individuals or groups taking political action can solve social problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
belief that it is your responsibility as someone who lives in the community to be involved in solving the community's social problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

What is your racial background (check all that apply)?

- ☐ African/African American
- ☐ Asian/Asian American
- ☐ Caucasian/White
- ☐ Latino/a
- ☐ Native American
- ☐ Bi/Multi-racial
- ☐ Other

What is your gender?

- ☐ Male
- ☐ Female
- ☐ Transgender

What is your age?

- ☐ 17 or less
- ☐ 18-19
- ☐ 20-21
- ☐ 22-23
- ☐ 24 or older

How many college credits have you earned?

- ☐ 1-29 (freshman)
- ☐ 30-59 (sophomore)
- ☐ 60-89 (junior)
- ☐ 90-120 (senior)
- ☐ more than 120

What is your current college(s)?

- | | |
|-------------------------------|--------------------------------|
| <input type="checkbox"/> AGNR | <input type="checkbox"/> EDUC |
| <input type="checkbox"/> ARCH | <input type="checkbox"/> ENGR |
| <input type="checkbox"/> ARHU | <input type="checkbox"/> HLHP |
| <input type="checkbox"/> BMGT | <input type="checkbox"/> JOUR |
| <input type="checkbox"/> BSOS | <input type="checkbox"/> LFSC |
| <input type="checkbox"/> CMPS | <input type="checkbox"/> L & S |

How many hours/week do you work for AR*AC?

- ☐ None
- ☐ 1-10
- ☐ 11-20
- ☐ 21-30
- ☐ 31-40
- ☐ more than 40

What is your place of residence this semester?

- ☐ Residence hall
- ☐ Commons/Courtyard
- ☐ Fraternity/sorority
- ☐ Your family's home
- ☐ Other off-campus housing

How many semesters have you participated in AR*AC?

- ☐ 1 semester
- ☐ 2 semesters
- ☐ 3 semesters
- ☐ 4 semesters
- ☐ 5 or more semesters

Appendix D:

Map of the Instrument

Items which are common across all three surveys (listed by section):

1. Please indicate your level of agreement with each statement about your experience in _____.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I would not have done community service work this semester if I had not done it through.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

2. Please indicate your level of agreement with each statement about your participation in service aside from this course and this semester.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Before I came to UM, I participated in community service activities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I participated in community service at UM prior to this experience.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Before I graduate from UM, I anticipate participating in community service activities again.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
After graduation from UM, I anticipate participating in community service activities.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Yes	No	
I have used the Community Service Office website (www.umd.edu/CSP).	<input type="checkbox"/>	<input type="checkbox"/>	
I have visited the on-campus Community Service Office (1150 Stamp Student Union).	<input type="checkbox"/>	<input type="checkbox"/>	
My high school had a community service requirement for graduation.	<input type="checkbox"/>	<input type="checkbox"/>	If yes, how many hours were required:

3. To what extent has your community service experience contributed to your:

	Very Little	Some	Quite A Bit	Very Much
interacting with students of a race or ethnicity different than your own	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
interacting with students of different religious or political backgrounds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
understanding of people from races/ethnicities different than your own	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

understanding how your race(s) shape your identity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
understanding diverse cultural, political and intellectual views	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
willingness to seek out new experiences	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
awareness that systems can disadvantage groups of people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
knowing/articulating your priorities in life	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
acting in ways consistent with your values	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
committing to activities that are important to you	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ability to work well with others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ability to foster a shared vision when working with others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
respecting opinions other than your own	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
comfort level with conflict	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ability to work in changing environments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
openness to new ideas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ability to learn from the community what its needs are	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ability to examine social problems in order to address root causes as well as immediate needs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
interest in addressing national or global social problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
commitment to lifelong involvement in the community to address social problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
belief that individuals or groups doing community service can solve social problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
belief that individuals or groups taking political action can solve social problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
belief that it is your responsibility as someone who lives in the community to be involved in solving the community's social problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Demographic Information

What is your racial background (check all that apply)?

- ☐ African/African American
- ☐ Asian/Asian American
- ☐ Caucasian/White
- ☐ Latino/a
- ☐ Native American
- ☐ Bi/Multi-racial
- ☐ Other

What is your gender?

- ☐ Male
- ☐ Female
- ☐ Transgender

What is your age?

- ☐ 17 or less
- ☐ 18-19
- ☐ 20-21
- ☐ 22-23
- ☐ 24 or older

What is your current college(s)?

- | | |
|-------------------------------|--------------------------------|
| <input type="checkbox"/> AGNR | <input type="checkbox"/> EDUC |
| <input type="checkbox"/> ARCH | <input type="checkbox"/> ENGR |
| <input type="checkbox"/> ARHU | <input type="checkbox"/> HLHP |
| <input type="checkbox"/> BMGT | <input type="checkbox"/> JOUR |
| <input type="checkbox"/> BSOS | <input type="checkbox"/> LFSC |
| <input type="checkbox"/> CMPS | <input type="checkbox"/> L & S |

How many hours/week do you work?

- ☐ None
- ☐ 1-10
- ☐ 11-20
- ☐ 21-30
- ☐ 31-40
- ☐ more than 40

What is your place of residence this semester?

- ☐ Residence hall
- ☐ Commons/Courtyard
- ☐ Fraternity/sorority
- ☐ Your family's home
- ☐ Other off-campus housing

How many college credits have you earned?

- ☐ 1-29 (freshman)
☐ 30-59 (sophomore)
☐ 60-89 (junior)
☐ 90-120 (senior)
☐ more than 120

In addition, service-learning students answered the following questions:

Name of the service-learning course in which you are enrolled:

The course code and number (e.g., EDCP 317):

Name of agency with which you worked:

1. Please indicate your level of agreement with each statement about your service-learning course.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
The community work I did through this course helped me to better understand the course content (e.g., lectures and readings).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The community work I did in this course helped me to develop my academic writing skills.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The community work I did in this course helped me to develop my critical thinking skills.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel I would have learned more from this course if more time was spent in the classroom instead of doing community work.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The <u>course instructor</u> helped me make connections between the service activity and the course content.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The <u>course readings</u> helped me make connections between the service activity and the course content.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The <u>agency supervisor</u> helped me make connections between the service activity and the course content.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The idea of combining service in the community with University coursework should be practiced in more classes at the University of Maryland.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The community service component of this course helped me clarify my professional goals.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Demographic Information

Where did you do most of your service for this class?

- ☐ On Campus
☐ Prince George's County
☐ Montgomery County
☐ Washington, DC
☐ In or near Baltimore
☐ Other

In addition, co-curricular students answered the following questions:

1. Please indicate your level of agreement with each statement about your community service experience in a student organization.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
I chose to join a student organization because of the community service opportunities it offered.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Through our community service, the members of our group got to know each other better.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Doing service with a student organization allowed our group to develop teamwork skills.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Because of the community service I did, I feel more engaged <u>ON</u> campus.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Because of the community service I did, I feel more engaged <u>OFF</u> campus.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
This community service experience helped me clarify my professional goals.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Demographic Information

Approximately how many hours of community service have you completed with your student group this year?

- ☐ 1-25 hours
☐ 26-50 hours
☐ 51-75 hours
☐ 76-100 hours
☐ more than 100 hours

Approximately how many hours of community service have you completed on your own this year?

- ☐ 1-25 hours
☐ 26-50 hours
☐ 51-75 hours
☐ 76-100 hours
☐ more than 100 hours

Where did you do most of your service?

- ☐ On Campus
☐ Prince George's County
☐ Montgomery County
☐ Washington, DC
☐ In or near Baltimore
☐ Other

Name of student group(s) you do most of your service with:

Name of primary community agency you worked with (if applicable):

In addition, ARAC students answered the following questions:

1. Please indicate your level of agreement with each statement about your experience in America Reads* America Counts.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
In choosing my future career, I would prefer positions that allow my work to benefit the community.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
This experience influenced my decision to explore education as a possible career major.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
This experience helped me clarify my professional goals.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Please answer the following two questions if you are an EDUCATION MAJOR ONLY</i>					
This experience confirmed my decision to major in education.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
This experience influenced my decision to change my major from education to another field.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Demographic Information

How many semesters have you participated in AR*AC?

- ☐ 1 semester
- ☐ 2 semesters
- ☐ 3 semesters
- ☐ 4 semesters
- ☐ 5 or more semesters

Appendix E:**Scale Scores by Gender**

Table 16: Means and standard deviations on citizenship outcome items for undergraduate females and males

Item	Female n = 386		Male n = 221	
	Mean	SD	Mean	SD
To what extent has your community service experience contributed to your:				
1. Ability to learn from the community what its needs are	2.86	.85	2.55	.92
2. Ability to examine social problems in order to address root causes as well as immediate needs	2.69	.92	2.35	.94
3. Interest in addressing national or global social problems	2.47	.95	2.14	.97
4. Commitment to lifelong involvement in the community to address social problems	2.57	.92	2.18	.92
5. Belief that individuals or groups doing community service can solve social problems	2.74	.86	2.39	.87
6. Belief that individuals or groups taking political action can solve social problems	2.54	.89	2.19	.93
7. Belief that it is your responsibility to be involved in solving the community's social problems	2.81	.87	2.45	.92
Scale (averaging items)	2.67	.73	2.32	.76

Table 17: Rank order of the contribution of the experience to citizenship outcome items

Item	Female	Male
1. Ability to learn from the community what its needs are	1	1
7. Belief that it is your responsibility to be involved in solving the community's social problems	2	2
5. Belief that individuals or groups doing community service can solve social problems	3	3
2. Ability to examine social problems in order to address root causes as well as immediate needs	4	4
4. Commitment to lifelong involvement in the community to address social problems	5	5.5
6. Belief that individuals or groups taking political action can solve social problems	6	5.5
3. Interest in addressing national or global social problems	7	7

Note: Values that were equal or within .01 of each other received the same rating.

Table 18: Means and standard deviations on leadership outcome items for undergraduate females and males

Item	Female n = 386		Male n = 221	
	Mean	SD	Mean	SD
To what extent has your community service experience contributed to your:				
1. Knowing/articulating your priorities in life	2.66	.94	2.32	.99
2. Acting in ways consistent with your values	2.82	.87	2.53	.91
3. Committing to activities that are important to you	2.91	.89	2.52	.93
4. Ability to work well with others	3.03	.82	2.72	.89
5. Ability to foster a shared vision when working with others	2.89	.88	2.53	.92
6. Respecting opinions other than your own	2.92	.89	2.59	.98
7. Comfort level with conflict	2.49	.91	2.33	.94
8. Ability to work in a changing environment	2.73	.90	2.43	.93
9. Openness to new ideas	2.88	.85	2.54	.88
Scale (averaging items)	2.82	.71	2.50	.75

Table 19: Rank order of the contribution of the experience to leadership outcome items

Item	Female	Male
4. Ability to work well with others	1	1
6. Respecting opinions other than your own	2.5	2
9. Openness to new ideas	4.5	3
3. Committing to activities that are important to you	2.5	6
5. Ability to foster a shared vision when working with others	4.5	4.5
2. Acting in ways consistent with your values	6	4.5
8. Ability to work in a changing environment	7	7
1. Knowing/articulating your priorities in life	8	8.5
7. Comfort level with conflict	9	8.5

Note: Values that were equal or within .01 of each other received the same rating.

Table 20: Means and standard deviations on diversity outcome items for undergraduate females and males

Item	Female n = 386		Male n = 221	
	Mean	SD	Mean	SD
To what extent has your community service experience contributed to your:				
1. Interacting with students of a different race or ethnicity	2.59	1.03	2.45	1.03
2. Interacting with students of different religious or political backgrounds	2.46	.99	2.35	.99
3. Understanding of people from different races/ethnicities	2.57	1.04	2.35	.98
4. Understanding how your race(s) shape your identity	2.31	1.06	2.07	.95
5. Understanding diverse cultural, political and intellectual views	2.42	1.00	2.17	.91
6. Willingness to seek out new experiences	2.95	.83	2.56	.93
7. Awareness that systems can disadvantage groups of people	2.77	.97	2.48	1.01
Scale (averaging items)	2.58	.79	2.35	.77

Table 21: Rank order of the contribution of the experience to diversity outcome items

Item	Female	Male
6. Willingness to seek out new experiences	1	1
7. Awareness that systems can disadvantage groups of people	2	2
1. Interacting with students of a different race or ethnicity	3	3
3. Understanding of people from different races/ethnicities	4	4.5
2. Interacting with students of different religious or political backgrounds	5	4.5
5. Understanding diverse cultural, political and intellectual views	6	6
4. Understanding how your race(s) shape your identity	7	7

Note: Values that were equal or within .01 of each other received the same rating.

Table 22: Means and standard deviations on plans for future participation in community service activities for undergraduate females and males

Item	Female n = 386		Male n = 221	
	Mean	SD	Mean	SD
Please indicate your level of agreement with each statement about your participation in service aside from this course and this semester:				
1. Before I graduate, I anticipate participating in community service activities again	4.27	.85	3.95	1.02
2. After graduation, I anticipate participating in community service activities	4.15	.91	3.86	.92
Scale (averaging items)	4.21	.81	3.91	.89

Appendix F:

Summary ANOVA results

Table 23: Summary of ANOVA results for independent and dependent variables^a

DV	Primary IV	Secondary IVs			
	Context	Gender	Race ^b	Prior Service	Major ^c
Citizenship	34.00****	30.81****	34.92****	3.30	15.00****
Leadership	40.29 ^d ****	26.54****	29.33****	3.62****	13.72 ^d ****
Diversity	50.14 ^d ****	12.65****	48.76	2.00*	8.19**
Future	1.01	18.33****	6.87**	17.45	.17
Service					
Reflection	542.82****	13.42 ^d ****	15.19****	2.92	2.35

^a Fisher's F values are reported.

^b Racial groups were divided into two groups. Group 1 consisted of African Americans, Asian Americans, Latinos, Native Americans, Multi-racial and Other. Group 2 consisted of Caucasians.

^c Majors were divided into two groups based on the degrees awarded to students. Group 1 consisted of programs which awarded either a B.A. or a B.A. and a B.S. (Arts and Humanities, Education, Journalism, and Social Sciences). Group 2 consisted of majors which only offered a B.S. (Agriculture, Architecture, Business, Engineering, Health, Letters and Sciences, Life Sciences, and Physical Sciences).

^d Although the assumption of homogeneity of variance is not met, the statistic is robust to the violation because the sample sizes are within a factor of 1.5 of each other and differences in variance are not substantial (Hendrickson, 2003).

* $p < .05$, ** $p < .01$, *** $p < .001$, **** $p < .0001$

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