Assessing Students' Social Responsibility and Civic Learning

Sylvia Hurtado, Adriana Ruiz, and Hannah Whang

University of California, Los Angeles

Presented at the 2012 Annual Forum of the Association for Institutional Research,

New Orleans, Louisiana

Contact: Sylvia Hurtado, Professor and Director, Higher Education Research Institute, UCLA,

405 Hilgard Ave. 3005 Moore Hall, Los Angeles, CA 90095-1521.

Email: sylvia.hurtado@gmail.com

Assessing Students' Social Responsibility and Civic Learning

Over the last two decades, many campuses have reinvented their commitment to public service through central coordination of community partnership activities, support for curricular-based service learning initiatives, and recognition of civic-minded practice in the evaluation and promotion of faculty work. At the same time, increasing numbers of students have come to college ready to engage in civic learning. The Freshman Survey (TFS) administered through the Cooperative Institutional Research Program (CIRP) has tracked growth trends since 1990 in students reporting community service or volunteer work as part of their experiences in high school. By 2011, expectations for college involvement in volunteer or community service among freshmen entering four-year colleges had doubled to 34%, and nearly 88% had reported engaging in volunteer work while in high school (Hurtado & DeAngelo, 2012). Despite ubiquitous reports of volunteerism and increased institutional activity, many students may lack a deep sense of the personal and social responsibility needed to engage in advancing a nation that is in the top 30% of countries in the world with the highest levels of income inequality (Central Intelligence Agency, 2012). Others report students' disaffection with political involvement in traditional democratic processes and low voter participation (Colby, Beaumont, Erlich, & Corngold, 2007; Sax, 2004). Alarmed by what some have called a "civic recession" (Quigley, 2011), the Association of American Colleges and Universities (AAC&U) released a national call to action in the report, *A Crucible Moment: College Learning & Democracy's Future* (The National Task Force on Civic Learning and Democratic Engagement, 2012). The report provides explicit recommendations to the U.S. Department of Education and calls on the higher education community "to embrace civic learning and democratic engagement as an undisputed educational

priority" (p.2). Colleges and universities are asked to examine their role in civic learning and monitor how they have an impact on students' development.

The outcomes and educational processes associated with civic learning during college may be assuming importance alongside degree attainment and workforce preparation. In response to the national call, the U.S. Department of Education (2012) immediately released its own report with five priorities, among them are: 1) Making civic learning and democratic engagement in both the U.S. and global contexts core expectations for K-12, undergraduate, and graduate students; and 2) Developing robust evidence of student achievement of civic learning outcomes and the impact of educational institutions. The report lays out the federal governments' own roadmap for advancing civic learning as a nation, including the potential for national indicators for college students that would follow up NAEP indicators based on civic knowledge exams. The rationale embedded behind this and other initiatives, such as the Degree Qualifications Profile (Lumina Foundation, 2011), is that civic learning is not only a priority but also a measure of the quality of education that students attain. However, it is important to note that civic knowledge does not capture the multidimensional nature of civic learning, including students' capacities for public action or skills necessary for engagement in a diverse and global society.

While freshmen data indicate that institutions have much to build on in terms of students' initial interests, there is also much assessment work to do in terms of monitoring students' developing civic action, values, and commitments as part of institutional goals to educate responsible citizens. The purpose of this study is to examine multiple measures of civic learning, articulated along dimensions of a framework called the Civic Learning Spiral (Musil, 2009). Detailed rubrics have been developed nationally to help campuses assess essential learning

outcomes, including students' personal and social responsibility (AAC&U, 2007). Using a

variety of national databases that best capture longitudinal assessment of civic learning outcomes

and building on previous studies (see Bowman, 2011), we investigate the relationship between

various measures of students' civic values, skills, and public action that reflect civic learning;

and key campus-facilitated activities and institutional characteristics that are associated with

higher scores on these civic measures. Thus, we examine both the indicators and the aspects of

students' college experiences that advance these civic learning outcomes.

A Typology of Civic Learning Indicators

Our conceptual framework is based on the AAC&U Civic Learning Spiral (Musil, 2009),

which consolidates three contemporary reform movements in higher education: US Diversity,

Global Learning, and Civic Engagement. According to the framework, civic learning should

result in informed citizens and prepare them to engage and lead responsibly in their work and

community roles. At the Spiral's core lies the notion of interwoven learning across six elements,

or "braids" including: Self, Communities & Cultures, Knowledge, Skills, Values, and Public

Action. Thus, each turn of the spiral represents the synthesis and integration of inextricably

linked facets of civic learning. The Spiral depicts a framework for civic learning that is fluid and

continuous—one that can be applied to assess curricular and co-curricular program goals

throughout a student's career. Repetition of learning across these braids promotes a "routine of

integration that can lead to a lifelong disposition of open inquiry, dialogue across differences,

and practice in public activism" (p. 60). Campuses have used the Civic Learning Spiral to form

undergraduate education goals (see Stanford University, 2012), and we demonstrate here how it

can be a useful framework for assessment.

Civic learning outcomes have long been a topic of interest in higher education research (Bowen, 1977). Further, Cooperative Institutional Research Program (CIRP) surveys have historically played a role in measuring those outcomes (Sax, 2004). Pascarella, Ethington, and Smart (1988) used data from CIRP's 1971 Freshman Survey (TFS) to predict nine-year change in students' "humanitarian/civic involvement values"—a six-item measure that included four of the six items that now comprise CIRP's Social Agency construct (CIRP, 2011). Additional civic learning outcomes assessed using CIRP surveys include "Civic Values" (Rhee & Dey, 1996) and "Altruism and Social Activism" (Astin, 1993), "Openness to Diversity," and "Cognitive Development" (Chang, Denson, Sáenz, & Misa, 2006), indices that reflect the Spiral braids of Values, Communities and Cultures, and Skills, respectively. Further, several single-item CIRP measures have been used to demonstrate civic outcomes ten years after college entry, including elements of the Public Action braid of the Spiral, with behaviors such as volunteering in a political organization and expressing an opinion through signing/writing an email petition (Vogelgesang & Astin, 2005).

More recent studies further support the measurability of Spiral type outcomes using CIRP survey items. For example, Lott and Eagan (2011) used confirmatory factor analysis to create a new "civic values" construct—standards and principles that shape one's moral and civic compass and affect one's "disposition towards matters that have implications for a fair and just society" (p. 334). Using five of the six items that comprise CIRP's Social Agency construct, their eight-item construct demonstrated strong internal reliability as well as stability across the four year college career. Rios-Aguilar and Mars (2011) used exploratory factor analysis to develop eight subscales of college student citizenship from CIRP survey items: academic engagement, community action, political orientation, social awareness, political attentiveness, self-awareness,

community engagement, and political action. Additionally, item response theory has been used

to validate several constructs across CIRP surveys (Sharkness, DeAngelo, & Pryor, 2010), five

of which are mapped onto Spiral outcomes in this paper: Social Agency, Pluralistic Orientation,

Civic Awareness, Integration of Learning, and Critical Consciousness and Action (CIRP, 2011).

Thus, consistent research using the surveys has resulted in improvements in civic learning

measures, along with a new instrument—The Diverse Learning Environments (DLE) Survey—

intended to capture student perceptions of the campus climate, participation in campus-facilitated

educational practices, and outcomes associated with retention and civic learning.

Predictors of Civic Learning Outcomes

Previous research has confirmed that several pre-college, demographic, and

predisposition factors influence students' postsecondary civic learning outcomes. Studies have

identified significant demographic differences in outcomes based on race/ethnicity, gender, and

socioeconomic status (Rios-Aguilar & Mars, 2011; Vogelgesang, 2000). Participation in high

school activities such as volunteering and tutoring other students has also been positively linked

to multiple developmental outcomes, such as civic responsibility and life skills (Astin & Sax,

1998). In addition, the positive effects of certain beliefs and values with which students enter

college tend to persist through college; these include self-rated leadership ability (Astin & Sax,

1998) and social activism goals such as promoting racial understanding (Bryant, Gayles, &

Davis, 2011). Thus controls for these students' predispositions and early assessment, or "pre-

tests," are of prime importance in longitudinal assessment of student change.

Once in college, students' participation in curricular-based diversity experiences can

predict civic outcomes above and beyond high school experiences. Students' engagement with

"classroom diversity" through participating in women's or ethnic studies courses has been linked

to democratic outcomes such as citizenship engagement and racial/cultural engagement (Gurin, Dey, Hurtado, & Gurin, 2002), as well as "aspects of self" that include self-confidence, social agency, and disposition to think critically (Nelson Laird, 2005). Diversity courses tend to offer content and pedagogy that challenge assumptions about human differences and encourage critical thinking (Chang, 2002; Nelson Laird, Engberg, & Hurtado, 2005). Thus, participation in such curricular experiences may help students—including those for whom civic responsibility is not intrinsically grounded—to inform their personal values, attitudes, and goals, and subsequently deepen their commitments to social and political concerns (Bryant et al., 2011).

Campus experiences that promote civic outcomes also include co-curricular activities. For example, participation in leadership training, study abroad, or a racial/cultural awareness workshop fosters pluralistic orientation and complex thinking—skills necessary to support a diverse democracy (Engberg & Hurtado, 2011; Hurtado & DeAngelo, 2012). Gurin et al. (2002) posited that the positive civic outcomes associated with certain curricular experiences may be attributable to their provision of opportunities for students' to interact with diverse peers. Thus other campus facilitated activities that encourage and promote interracial interaction, such as intramural sports and contact with campus staff (Luo & Jamieson-Drake, 2009) may also contribute to positive civic outcomes. However, it seems that further work on institutional practices is necessary to understand if such effects hold true across different student cohorts, and if such practices may have more impact at particular timepoints. While the AAC&U (Kuh, 2008) recommends several co-curricular activities as "high-impact" practices for student learning (e.g., study abroad, internships), the claims of effectiveness are made based on students' self-reported change. Further, we do not know if some of these practices share the same or have unique

independent effects on particular outcomes after controlling for predispositions. Thus, better evidence of impact is needed using longitudinal data.

Scholarship has also addressed the role of students' informal college experiences in promoting civic outcomes. Astin and Sax (1998) found that student volunteerism positively predicts longitudinal outcomes across the categories of civic responsibility, educational attainment, and life skills. Notably, they determined that college students' participation in service was positively associated with all thirty-five of their outcome measures, and that more time devoted to service generally translated to stronger positive effects. Similarly, Cress, Astin, Zimmerman-Oster, and Burkhardt (2001) found that the number of hours per week that college students spent volunteering predicted each of five civic outcomes. The more hours students spent performing volunteer work, the more likely they were to show growth in these developmental areas, such as awareness of multicultural and community issues.

While volunteer work is commonly associated with positive civic outcomes, the types of service involvement are highly intercorrelated; participation may thus be predictive of civic learning for the types of students who self-select into service activities (Berger & Milem, 2002). Further, based on results from their cross-sectional analysis, Berger and Milem (2002) suggested that the quality of service involvement may matter more than the quantity. Similarly, Vogelgesang and Astin (2000) concluded that service learning positively affects civic values and cognitive outcomes above and beyond generic community service. Thus, content and pedagogical strategies may play a vital role in enhancing civic-related outcomes. Building on this claim, we present models that identify the unique contributions of volunteer work in high school, informal volunteer work in college, and campus-facilitated activities like service learning

courses—courses that provide experiences to serve communities in need, diversity content, and opportunities for intensive dialogue with students from different backgrounds and beliefs.

More recent focus on students' informal experiences with diversity, and the creation of tools with which to measure those experiences, has shed light on additional pathways to civic learning outcomes. Multiple studies (see Bowman, 2011) have determined that interpersonal interactions with racial diversity are more effective in promoting civic engagement than are curricular and co-curricular diversity experiences. Gurin et al. (2002) found that informal interactional diversity significantly predicted citizenship engagement for white, African American, Latino, and Asian students. In contrast, curricular experiences with diversity were significant for only white and Latino students. Chang, Astin, and Kim (2004) concluded that cross-racial interaction (CRI) positively predicted intellectual, social, and civic development, particularly among white students. Their suggestions based on these results included enrolling larger proportions of students of color—increasing compositional diversity—and offering students more opportunities to live and work part-time on campus.

Continuing in the vein of diversity research, scholars have called for more specific attention to the *quality*, rather than quantity, of cross-racial interactions as part of the behavioral dimension of the campus climate (Hurtado, Griffin, Arellano, & Cuellar, 2009). Having a diverse campus is a necessary but not sufficient condition for producing educational outcomes; the quality of students' interactions is important (Chang et al., 2006; Gurin et al., 2002). Positive cross-racial interactions are characterized by opportunities for meaningful engagement with other-race peers, and include experiences such as sharing personal feelings or problems, and having intellectual discussions outside of class (CIRP, 2011). They have been linked to changes in pluralistic orientation skills in the early years of college (Engberg, 2007; Engberg & Hurtado,

2011; Hurtado & DeAngelo, 2012). After two years, positive cross-racial interactions in college predict changes in cognitive and socio-cognitive outcomes, as well as democratic sensibilities such as interest in poverty issues and concern for the public good (Hurtado, 2005). Further, the quality of interactions is more widely predictive of these outcomes than the general frequency of interactions. Sáenz (2010) found that positive interactions in college can even mediate or interrupt the perpetuation effects of students' segregated precollege environments and experiences. Negative interactions on the other hand, which include guarded, cautious, and tense interactions across race, or feeling insulted or threatened because of one's race/ethnicity, may diminish students' ability to work cooperatively with diverse people and reinforce differences between groups (Engberg & Hurtado, 2011; Hurtado, 2005).

Institution level factors, such as campus culture, are also important influences on students' civic learning. This is perhaps unsurprising in considering an institution's peer culture a reflection of its students' behaviors and values. Bryant et al. (2011) found that college culture—a measure of campuses' average social activism and charitable involvement—had direct effects on individual students' co-curricular engagement, social activism, and charitable involvement. Additionally, aspects of culture such as campus religious context (Jayakumar, 2009) and prevalence of cross-racial interaction (Chang et al., 2004) can affect students' perceptions of and openness to diverse others. However, he peer context is perhaps only as effective in influencing students' civic outcomes as students are willing to internalize it (Bryant et al., 2011). "Social interest" and perceived investment and membership in the campus community may encourage students to develop pro-social behaviors and values that are in line with their peers' (Swaner, 2005). Thus we also look at sense of belonging as a predictor of civic outcomes that may moderate a peer level contextual effect. An institution's culture is arguably also shaped by the

behaviors and values of its faculty, which have demonstrated significant impact on student learning (Umbach & Wawrzynski, 2005). Further, it stands to reason that more exposure to and interaction with faculty increases students' likelihood of being influenced by them. In this study, we use the proportion of part-time faculty to understand institutional-level impact on civic learning outcomes (Umbach, 2008). Additionally, because institutional characteristics may influence faculty involvement in civic-minded practice, we also assess the effects of factors such as institutional control, size, and selectivity (Antonio, Astin, & Cress, 2000; Umbach, 2008; Vogelgesang, Denson, & Jayakumar, 2010).

The Civic Learning Spiral provides a useful framework for conceptualizing higher education's role in educating a diverse and democratic citizenry. Moreover, previous research demonstrates that this role is indeed significant. Students develop civic skills and values through their engagement in curricular, co-curricular, and informal experiences throughout their college careers. Further, the development of these skills and values is measurable—both individual institutions and scholars have been gathering data on civic learning for many years. Our study further builds on previous research by introducing conceptually and statistically sound measures of civic learning across multiple cohorts of students, and capturing their development at multiple timepoints. Additionally, it provides summative analyses across cohorts that can be replicated by individual campuses. The next section describes our approach.

Methodology

Data Source and Sample

Our data was drawn primarily from the Cooperative Institutional Research Program (CIRP), which has been collecting data on college students for more than 45 years. Three longitudinal datasets were utilized for this study, allowing us to compare the impact of particular

behaviors and experiences across different cohorts of students at different stages in their college trajectories. The data used in our analyses came from the CIRP 2008 administration of the Your First College Year (YFCY) survey, the 2010 administration of the College Senior Survey (CSS), the 2011 administration of the Diverse Learning Environments (DLE) survey, and the respective freshman data matches for those same students from the 2006 through 2010 administrations of the Freshman Survey (TFS). The TFS is the nation's oldest college student survey instrument and captures student backgrounds, high school experiences, and predispositions at college entry since it is typically administered at orientation. The YFCY is administered at the end of the first year of college, the CSS is administered at the end of the senior year, and the DLE targets sophomores and juniors transitioning into their majors. It was designed to provide insight into students' academic and campus life experiences by assessing campus climate, practices, and a set of outcomes focused on citizenship in a multicultural society.

The samples from the administrations of the DLE and CSS capture a diverse set of students at a diverse set of institutions, while our sample from the 2008 administration of the YFCY is representative of the national population of students at 4-year institutions who complete the first year of college. Data from the Integrated Postsecondary Education Data System (IPEDS) on fall-to-fall first-time, full-time retention rates for first-year students were used to represent the national population and the YFCY dataset was weighted using a technique that adjusts the sample upward to the population, taking into account individual as well as institutional response bias (Babbie, 2001). To supplement the institutional characteristics available in our three datasets, additional measures were obtained from IPEDS. A full description of all three samples is included in Table 1.

-----Insert Table 1 Here-----

Measures

Dependent Variables. Using items from across all four of the CIRP student surveys, we mapped nine civic outcome measures onto the six coexisting braids of the Civic Learning Spiral. Five of the nine measures were previously validated CIRP constructs that were scored using Item Response Theory (IRT), which uses maximum likelihood estimations to predict scores based on response patterns (Sharkness et al., 2010). Three measures were new factors, based on a conceptual match to the spiral framework and created using principal axis factoring with varimax rotation. A final outcome measure was a single survey item, which captures students' two-year and four-year self-rated change in knowledge about people from different races and cultures. Seven of the nine outcome measures were available on more than one of our three datasets, resulting in a total of 19 models for this study. See Table 2 for complete list of outcome measures, mapping, factor loadings, and alpha reliability scores.

-----Insert Table 2 Here-----

The eight existing constructs and new factors utilized as outcomes in this study are described in relation to each spiral framework component. *Understanding self and others* is a three-item scale that captures students' self-understanding and ability to work with others, and maps onto the Self component of the spiral. The Knowledge component of the spiral was represented by two outcomes: *Civic awareness* is a three-item scale that measures self-rated changes in students' understanding of the issues facing their community, nation, and the world; *Integration of learning* is a three-item scale that measures student behavior in integrating, connecting, and applying concepts and ideas. The Skills component is represented by two socio-cognitive measures: *Pluralistic orientation* is a five-item scale that measures students' skills and dispositions appropriate for living and working in a diverse society, and *Critical consciousness*

and action is a six-item scale that measures how often students critically examine and challenge their own and others' biases. The Values component of the spiral is represented by *Social agency,* a six-item scale that measures the extent to which students value political and social involvement as a personal goal. Two outcomes were mapped onto the Public Action component of the spiral framework: *Civic engagement in public forums* is a three-item scale that measures students' public demonstrations of civic values, and *Political engagement* is a three-item scale that measures students' political behaviors and goals.

Independent Student-Level Variables. Utilizing measures that were available across all three of the CIRP college experience surveys (YFCY, DLE, CSS), we created a common model with 18 student-level variables that reflect key predictors of civic outcomes in prior research. These variables include controls for student background characteristics, academic preparation/ability, high school socialization experiences, political orientation, and predispositions for the outcomes in order to determine the impact of particular behaviors and experiences during college. Direct pre-tests were available on the TFS for three out of the nine outcome measures (Self, Social Agency, Political Engagement). For the remaining outcomes, we included proxy controls for related predispositions at college entry. For instance, for Civic Engagement in Public Forms we included the single-item measure capturing whether students had participated in organized demonstrations in the past year in high school, and for Civic Awareness we included freshmen reported measures for frequency of reading the newspaper for local, national, or global news. In short, we used the freshmen survey to its greatest advantage, capturing students' inclinations before significant exposure to college programs, practices and curricula.

College measures included several intentional co-curricular and curricular educational

practices, including participation in leadership training and curricular opportunities to study and serve communities in need (e.g., service learning) as such experiences have been previously linked with civic skills and values (Hurtado & DeAngelo, 2012; Vogelgesang & Astin, 2000). Informal academic and social experiences such as discussing course content with other students outside of class, volunteering, participating in a sorority or fraternity, and positive cross-racial interactions were also included. In our study, positive cross-racial interactions are operationalized as a CIRP construct that was created using IRT (Sharkness et al, 2010), based on previous studies that have used these items at large public institutions (Hurtado, 2005; Michigan Student Study, 2002; Sáenz, 2010), and that captures interactions such as studying together and having meaningful discussions about race.

To understand whether the focus on civic learning is associated with other learning priorities on campus, we included students' scores on the CIRP construct Habits of Mind for Lifelong Learning—a measure of student behaviors associated with academic success. This construct includes items measuring frequency of asking questions in class, revising papers, evaluating sources of information, and other behaviors and traits that are considered to be the foundation for lifelong learning. The final two student-level variables that we used across our three samples reflect perceptions of the campus climate. The first, sense of belonging, is another CIRP construct based on previous research in sociology (Bollen & Hoyle, 1990) and higher education (Hurtado & Carter, 1997; Locks, Hurtado, Bowman, & Oseguera, 2008; Nuñez, 2009) that measures students' psychological sense of integration in the college community. The second is a single-item measure capturing students' level of satisfaction with their campus' respect for the expression of diverse beliefs.

Eight additional measures that were only available for two of the three longitudinal

samples were also utilized in order to examine the effect of a larger array of campus practices on

our civic outcomes. The measures available on the YFCY for our first-year sample were self-

rated change in problem-solving skills, frequency of communicating with professors, voting in a

student election, and working on a local, state, or national political campaign. The measures

available on the DLE were taking an ethnic studies course, taking a women's studies course,

participating in a study-abroad program, and participating in a racial/ethnic student organization.

All eight measures were available on the CSS for the longitudinal four-year sample. In total, our

final model for seniors included 26 measures; the final model for end-of-first-year students

included 22 measures; and the final model for students who took the DLE (mostly sophomores

and juniors) included 22 student-level variables that were common across at least two of the

three samples. This means that specific measures were included in the models for all 19 of the

outcomes that were common across the three samples, forming a common model to compare

effects for predictors, while all other predictors were only included in the models for the 13

outcomes that were common across two samples. This nested model approach allows us to

compare coefficients in similar models, and in extended models with the addition of measures

specific to a survey. See Appendix A for the full model and coding schemes.

Independent Institutional-Level Variables. Seven institutional characteristics were

controlled for in the common model, including institutional control (private versus public),

selectivity, percent of the faculty that are part-time employees, and percent of the student body

comprising Students of Color. We also aggregated two measures from our freshmen data to

capture the levels of peer participation in service learning while in high school and the average

amount of value that peers placed on improving their understanding of different countries and

cultures. Peer climate has been found to influence student persistence and a variety of outcomes

(Astin, 1993; Oseguera & Rhee, 2009; Titus, 2004) and we wanted to explore its role in the development of civic outcomes. Whether an institution is officially a member of Campus Compact was also controlled. Campus Compact is a national higher education association dedicated to campus-based civic engagement (Campus Compact, 2012) and reflects institutional commitment to developing citizens.

Analysis

To begin, we ran frequencies on all variables of interest to examine missing data for all three of our samples. Because the proportion of cases with missing values was small, the expectation maximization (EM) algorithm was used to impute values for missing cases on all continuous variables with the exception of the dependent variables and any measures utilized as direct or proxy pretests. EM uses maximum likelihood techniques to provide a more robust method than other missing value techniques such as listwise deletion or mean replacement (McLachlan & Krishnan, 1997). For the main analysis, a series of models was run utilizing hierarchical linear modeling (HLM) to examine the individual and institutional characteristics related to our outcomes of interest. HLM is appropriate when data has a nested structure, as in this case where students were nested within institutions in each of our three samples. By accounting for the nested structure of the data and the homogeneity of errors within groups, HLM helps to avoid Type-I statistical error. HLM also simultaneously estimates equations for both the individual and the institutional effects, allowing the variance to be partitioned at each level of the data (Raudenbush & Bryk, 2002).

The multilevel analyses for this study were conducted in several steps. First, a null model with no predictor variables was created for each of the 19 outcomes to determine their intraclass correlation coefficients (ICC). The ICC measures the proportion of the variance in the outcome

that is between level-2 units (Raudenbush & Bryk, 2002), in this case between institutions. In this study, the proportion of variance between institutions ranges from 1.1% for Social Agency on the DLE to 6.3% for Change in Knowledge of Different Races and Cultures on the YFCY. Because the variation in our outcomes between groups was statistically significant (p<.001), we decided to proceed with HLM. Additionally, given the call to action for colleges and universities to examine their role in students' civic learning and development, it is conceptually important to understand the role that context plays in promoting the six dimensions of the Civic Learning Spiral (Musil, 2009). The final step in the multilevel analysis was to run the full common model for each of the 19 civic outcomes across the three longitudinal samples.

Limitations

In comparing the impact of measures on outcomes using different samples and at different time points, we were limited to the items that were available on at least two of the CIRP college experience surveys and did not fully capture the extent of campus practices that might promote civic outcomes. There are several good measures that are only available on one of the CIRP surveys, and future refinements of the surveys will allow exploration of their relationships in the development of civic outcomes. Additionally, two of the outcomes (Civic Engagement in Public Forums and Political Engagement) that we examined across different samples have different scales because the items composing the factors were similarly worded but had slightly different response options, which limits our ability to compare coefficients across models on those outcomes.

<div align="center">Results</div>

Most important among the findings are those associated with campus-facilitated experiences as well as student informal activities that become the basis of programs and

practices. Table 3 shows the effect of campus-facilitated practices on all 19 of the civic learning

outcomes, controlling for student background, pre-tests, high school service experiences, and a

range of curricular, co-curricular, and informal college behaviors and experiences. Perhaps one

of the most interesting of the multi-level model findings related to campus practices has to do

with the content and pedagogy in the curriculum, as classroom experiences are indeed tied to

civic learning outcomes. Student participation in service learning, for instance, was a unique

predictor (p<.01) of 13 out of the 19 outcomes. Among those 13 outcomes, service learning

positively contributed to change in knowledge about other countries and cultures, civic

awareness, social agency, and civic engagement in public forums at each of the multiple time

points in the college trajectory and for each of the different cohorts of students for which these

outcomes were examined. As an example, the civic values component of the Spiral represented

by the social agency construct is influenced by participation in service learning for all three of

the longitudinal student samples, demonstrating that the impact of this curricular opportunity is

not limited to a specific year in college and that such opportunities should be widely available for

all cohorts of students at an institution because of its impact.

<div align="center">-----Insert Table 3 Here-----</div>

Student experiences with an inclusive curriculum that encourages students to learn about

difference are significantly associated with multiple dimensions of civic learning. Having taken a

women's studies course, a measure available on the DLE and CSS, is significantly (p<.01)

related to nine out of the 13 outcomes in the HLM models. Students' civic and political

engagements are both positively tied to enrollment in a women's studies course, indicating that

the content and pedagogy of such a course helps to foster a desire to take public action. Being

exposed to course content and discussions about gender also significantly predicts critical

consciousness and action, and integration of learning, two outcomes that were measured on the DLE. Students who took an ethnic studies course also reported higher scores on eight out of the 13 outcomes that included ethnic studies as a predictor. In fact, enrollment in a course that included content about race and ethnicity is the only campus-facilitated practice that significantly predicted students' change in understanding of self and others self-ratings from freshman to senior year. It is also positively related to six out of the seven civic learning measures that were modeled in the senior longitudinal sample.

In terms of co-curricular campus-facilitated practices, eight out of a possible 13 outcomes are positively related ($p<.01$) to participation in study abroad programs. Change in knowledge about people from different communities and cultures is tied to taking courses abroad, which is unsurprising, but it is interesting to note that civic awareness is also tied to spending a term in another country. This finding across outcomes implies that students who go abroad not only increase their awareness of issues facing the global community due to their time outside of the country, but that their awareness of their local and national community also increases after they return. Another co-curricular campus practice of interest, leadership training, is positively associated with social agency and civic engagement in public forums for each of the cohorts in which these outcomes was examined. Leadership training is also the only campus practice that is positively related to change in understanding of self and others for first-year college students. It is important to note that each of these five campus-facilitated practices mentioned here has a unique effect over and above the others. In our analyses, all five are uniquely and positively associated with change in knowledge of people from different communities and cultures and social agency by the end of senior year. Campuses should be aware of the broad range of civic learning outcomes that are fostered by both coursework and intentional educational experiences

that encourage students to adopt different perspectives.

Student participation in racial/ethnic student organizations is also significantly related to more than half of the civic learning outcomes. Of particular interest is that by the end of the senior year, being involved in a racial/ethnic student organization positively influenced students' understanding of self and others, change in knowledge of people from different races/cultures, civic awareness, pluralistic orientation, social agency, civic engagement in public forums, and political engagement. That is, despite the critiques of self-segregation that are at times associated with racial/ethnic student organizations, participation actually promotes all of the civic learning outcomes after four years of college. In contrast, participation in a sorority or fraternity was negatively related to several outcomes. In the first year of college, students who were involved in Greek life reported lower scores on understanding of self and others, civic awareness, and changes on pluralistic orientation. Throughout different cohorts, Greeks also reported lower scores on critical consciousness and action as well as social agency. They did, however, report significantly higher scores on civic engagement in public forums both in the college senior sample and in the DLE sample of students with different class standings. This suggests it is important to continue to work with Greek life and support staff to foster many more dimensions of civic learning in preparation for a diverse democracy.

-----Insert Table 4 Here-----

Table 4 shows the effects of students' informal experiences on the development of civic outcomes. Previous research has well established that positive cross-racial interaction in college is associated with a wide range of civic gains (see Bowman, 2011; Hurtado, 2005). Our analyses confirm that the more students reported engaging with others of different racial/ethnic groups, the higher students' scores on every single one of the civic learning outcomes. The fact that

positive cross-racial interaction is the measure that is positively related to all the civic learning outcomes speaks to the role that a healthy campus climate can play in developing engaged citizens, and supports maintaining a diverse campus where students can learn about differences from peers on a personal/informal level. Indeed, modeling an inclusive environment may be key: Student satisfaction with the campus environment's respect for the expression of diverse beliefs is positively associated with all of the civic learning outcomes in the first year of college, and with higher scores on change in knowledge about different cultures, civic awareness, and pluralistic orientation in the fourth year of college.

Two other informal college experiences related to a wide range of civic gains were voting in a student election and volunteering. Voting in a student election is significant in eight out of the 13 models in which the measure was available, including two of the time points in which political engagement was measured. This finding implies that an early interest in politics even at the campus-level can carry over to other broader politically-related behaviors and goals. Volunteering is positively related ($p<.01$) to 13 out of the 19 possible outcomes. Though this is a positive finding in light of increasing reports of volunteerism, it is also important to note that the measure of volunteering does not clarify whether volunteer work was done as part of a curricular or co-curricular experience, or if it was simply initiated by the student. Keeping this in mind, campus-facilitated curricular and co-curricular activities can encourage behaviors such as volunteering and voting.

Another result to highlight is the association between civic learning and other learning priorities on campus. In all of the models, we included students' scores on the habits of mind construct (behaviors of successful students). After positive cross-racial interactions, students' habits of mind scores is the measure that is significantly related to change on the highest number

of civic outcomes (17 out of 19), including all six of the outcomes on the DLE. These findings

hold true even after controlling for student background, ability (high school GPA and SAT

scores), and other college experiences. Although students' problem-solving abilities are not

significantly related to the Public Action measures of the framework in the first year or in the

fourth year of college, they are significantly related to each of the other dimensions of the Civic

Learning Spiral in the fourth year of college (and all with the exception of pluralistic orientation

in the first year of college). These results begin to suggest that civic learning is enhanced by

activities that empower students as learners, and that the same mechanisms for cognitive

development may also promote civic learning. Overall, results show specific practices and

student experiences that, no matter when measured, are likely to demonstrate impact on a variety

of civic learning outcomes.

Institution-level effects indicate minor contextual differences when it comes to civic

learning outcomes, suggesting there is much more variation within colleges than between them.

This is actually relatively good news, meaning with few exceptions, that improving civic

learning at various stages of a students' career is within the reach of most institutions. Some

exceptions, however, are important to note. Public institutions are more likely than private

institutions to foster political engagement, civic awareness, and social agency by the fourth year

of college, and civic awareness and pluralistic orientation by the second year of college—

evidence perhaps of institutional commitment to the landgrant mission. Civic awareness and

political engagement changes by the fourth year of college are less evident on campuses that

have a relatively larger percentage of part-time faculty. Minor peer culture effects are evident on

a few outcomes but only at p< .05 levels of significance.

Conclusion

National attention is shifting towards the quality of education students receive at the postsecondary level, with civic learning as one key indicator of quality. Many campuses have already made civic learning a high priority in undergraduate education goals, and are now urged to begin systematic assessment of the impact of their educational opportunities and experiences on the next generation of engaged and responsible citizens. Fortunately for institutions, there has been a significant amount of scholarship using student surveys on college campuses, an established framework and rubrics for understanding a range of civil competencies, and also evidence of how campuses have an impact at various stages of a students' career.

This study makes several significant contributions to the study of civic learning outcomes. First, it establishes that there are multiple dimensions of civic learning, and that there are fairly reliable measures that are available to institutions with nationally comparative information. These can be readily accessed in the institutional researchers' tool kit as a participant in CIRP surveys. Institutional researchers can also replicate the models in this study to understand whether their institutional contexts yield similar results across the first, second or third, or fourth year of college. The second important contribution is that this study establishes that many types of curricular and co-curricular initiatives that expose students to different perspectives on and off campus have substantial impact on civic learning. The new evidence here provides a strong rationale for improving connections across campus for staff and faculty involved in diversity work, civic engagement programs, global learning, and across women's and ethnic studies. Each can contribute significantly to various dimensions of civic learning. The study also confirms previous research that indicates that interactions with diverse peers and learning about diversity enhances civic learning. A third important contribution is that there is a

link between habits associated with student learning and civic learning outcomes. This makes sense from both a practical and theoretical standpoint: More complex social problems will require cognitive development, effortful thinking, as well as the acquisition of socio-cognitive skills to identify and negotiate solutions in a diverse democracy. It is in our best interests to nurture the development of new visionaries who not only have the knowledge but also values, skills, and capacities for local and global engagement and leadership.

The next steps in research should include further work in understanding the interrelationships among the civic learning outcomes, particularly if the U.S. Department of Education moves forward in assessing civic knowledge on NAEP. It will be important to examine whether students make use of this knowledge and its relationship to other dimensions of the Civic Learning Spiral. Extending the research into graduate education and post-baccalaureate experiences will also be important if institutions are to fulfill expectations made explicit in the "roadmap" for civic learning (U.S. Department of Education, 2012). One area of research that emerged from this study is the notion of when and how disaffection with the political system occurs among youth. We found that service learning was not significantly related to political engagement in the fourth year of college but that there is a relationship in the early years of college. Another important area for development is investigating link between civic learning outcomes and faculty involvement in civic-minded practices in research, teaching and service. It has taken significant personal investment among educators to launch the programs and practices that have impact. We have only begun to scratch the surface here in providing more evidence for the critical role that both faculty and staff play in advancing civic learning through engaged practice.

References

Antonio, A.L, Astin, H.S., & Cress, C.M. (2000). Community service in higher education: A look at the nation's faculty. *Review of Higher Education*, 23(4), 373-398.

Association of American Colleges and Universities. (2007). College learning for the new global century: A report from the National Leadership Council for Liberal Education and America's Promise. Retrieved June 26, 2012, from

http://www.aacu.org/leap/documents/GlobalCentury_final.pdf.

Astin, A. W. (1993). *What matters in college? Four critical years revisited*. San Francisco: Jossey Bass.

Astin, A. W. & Sax, L.J. (1998). How undergraduates are affected by service participation. *Journal of College Student Development*, *39*(3), 251-263.

Babbie, E. (2001). *The Practice of Social Research*. Belmont, CA: Wadsworth.

Berger, J.B., & Milem, J.F. (2002). The impact of community service involvement on three measures of undergraduate self-concept. *NASPA Journal*, *40*(1), 85-103.

Bollen, K. A., and Hoyle, R. H. (1990). Perceived cohesion: A conceptual and empirical examination. *Social Forces*, *69*(2), 479-504.

Bowen, H.R. (1977). *Investing in learning: The individual and social value of American higher education.* San Francisco: Jossey-Bass.

Bowman, N.A. (2011). Promoting participation in a diverse democracy: A meta-analysis of college diversity experiences and civic engagement. *Review of Educational Research*, *81*(1), 29-68.

Bryant, A.N., Gayles, J.G., & Davis, H.A. (2011). The relationship between civic behavior and civic values: A conceptual model. *Research in Higher Education, 53*(1), 76-93.

Campus Compact (2012). Campus Compact – Who we are. Retrieved June 15, 2012, from

    http://www.compact.org/about/history-mission-vision.

Central Intelligence Agency. (2012). *The world factbook, 2012*. Washington, DC: Central

    Intelligence Agency.

Chang, M.J. (2002). The impact of an undergraduate diversity course requirement on students'

    racial views and attitudes. *The Journal of General Education, 51*(1), 21-42.

Chang, M.J., Astin, A.W., & Kim, D. (2004). Cross-racial interaction among undergraduates:

    Some consequences, causes, and patterns. *Research in Higher Education, 45*(5), 529-553.

Chang, M.J., Denson, N., Sáenz, V., & Misa, K. (2006). The educational benefits of sustaining

    cross-racial interaction among undergraduates. *The Journal of Higher Education, 77*(3), 430-

    455.

Colby, A., Beaumont, E., Erlich, T., & Corngold, J. (2007). *Educating for democracy: Preparing*

    undergraduates for responsible political engagement. San Francisco: Jossey-Bass.

Cooperative Institutional Research Program. (2011). CIRP construct technical report, 2011

    appendix: Construct parameters. Retrieved June 21, 2012, from

    http://www.heri.ucla.edu/PDFs/constructs/Appendix2011.pdf.

Cress, C.M., Astin, H.S., Zimmerman-Oster, K., & Burkhardt, J.C. (2001). Developmental

    outcomes of college students' involvement in leadership activities. *Journal of College*

    Student Development, *41*(1), 15-27.

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

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

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

Engberg, M.E., & Hurtado, S. (2011). Developing pluralistic skills and dispositions in college: Examining racial/ethnic group differences. *The Journal of Higher Education, 82*(4), 416-443.

Gurin, P., Dey, E.L., Hurtado, S., & Gurin, G. (2002). Diversity and higher education: Theory and impact on educational outcomes. *Harvard Educational Review*, *72*(3), 330-366.

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

Hurtado, S. & Carter, D. F. (1997). Effects of college transition and perceptions of the campus racial climate on Latino college students' sense of belonging. *Sociology of Education, 70*(4), 324-345.

Hurtado, S., Griffin, K.A., Arellano, L., & Cuellar, M. (2009). Assessing the value of climate assessments: Progress and future directions. *Journal of Diversity in Higher Education, 1*(4), 204-221.

Hurtado, S. & DeAngelo, L. (2012). Linking diversity and civic-minded practices with student outcomes: New evidence from national surveys. *Liberal Education, 98*(2), 14-23.

Jayakumar, U.M. (2009). The invisible rainbow in diversity: Factors influencing sexual prejudice among college students. *Journal of Homosexuality, 56(*6), 675-700.

Kuh, G.D. (2008). *High-impact educational practices: What they are, who as access to them, and why they matter.* Washington, D.C.: Association of American Colleges and Universities. Retrieved June 24, 20112, from http://www.neasc.org/downloads/aacu_high_impact_2008_final.pdf.

Locks, A.M., Hurtado, S., Bowman, N.A., & Oseguera, L. (2008). Extending notions of campus climate and diversity to students' transition to college. *Review of Higher Education*, *31*(3), 257-285.

Lott, J. L., II & Eagan, M.K., Jr. (2011). Assessing the psychometric properties of civic values.

    Journal of Student Affairs Research and Practice, 48(3), 333–347.

Lumina Foundation. (2011). The degree qualifications profile. Retrieved June 23, 2012 from

    http://www.luminafoundation.org/publications/The_Degree_Qualifications_Profile.pdf.

Luo, J. & Jamieson-Drake, D. (2009). A retrospective assessment of the educational benefits of

    interaction across racial boundaries. *Journal of College Student Development, 50*(1), 67-86.

McLachlan, G. J., & Krishnan, T. (1997). *The EM algorithm and extensions*. New York: John

    Wiley & Sons, Inc.

Michigan Student Study (2002). Major topics explored: Concept table. Retrieved June 21, 2012,

    from: http://www.oami.umich.edu/mss/about/concept.htm.

Musil, C.M. (2009). Educating students for personal and social responsibility: The civic learning

    spiral. In B. Jacoby (Ed.), *Civic engagement in higher education*. San Francisco, CA: Jossey-

    Bass.

Nelson Laird, T.F. (2005). College students' experiences with diversity and their effects on

    academic self-confidence, social agency, and disposition toward critical thinking. *Research*

    in Higher Education, 46(4), 365-387.

Nelson Laird, T.F., Engberg, M.E., & Hurtado, S. (2005). Modeling accentuation effects:

    Enrolling in a diversity course and the importance of social action engagement. *The Journal*

    of Higher Education, 76(4), 448-476.

Nuñez, A.M. (2009). A critical paradox? Predictors of Latino students' sense of belonging in

    college. *Journal of Diversity in Higher Education*, 2, 46-61.

Oseguera, L., & Rhee, B. (2009). The influence of institutional retention climates on student

 persistence to degree completion: A multilevel approach. *Research in Higher Education,*

 50(6), 546–569.

Pascarella, E.T., Ethington, C.A., & Smart, J.C. (1988). The influence of college on

 humanitarian/civic involvement values. *The Journal of Higher Education, 59*(4), 412-437.

Quigley, C.N. (2011, May 4). Call to action: National assessment of educational progress.

 Retrieved June 21, 2012, from

 http://new.civiced.org/resources/civic-education-links/call-to-action.

Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data*

 analysis methods (2nd Ed.). Thousand Oaks: Sage Publishing.

Rhee, B. & Dey, E.L. (1996). *Collegiate influences on the civic values of students*. Paper

 presented at the Annual Meeting of the Association for the Study of Higher Education,

 Memphis, TN. ERIC Document Reproduction Services No. ED 402844.

Rios-Aguilar, C. & Mars, M.M. (2011). Integration or fragmentation? College student

 citizenship in the global society. *Education, Knowledge and Economy, 5*(1-2), 29-44.

Sáenz, V.B. (2010). Breaking the segregation cycle: Examining students' precollege racial

 environments and college diversity experiences. *The Review of Higher Education, 34*(1), 1-

 37.

Sax, L.J. (2004). Citizenship development and the American college student. *New Directions for*

 Institutional Research, 122(Summer), 65-58

Sharkness, J., DeAngelo, L. & Pryor, J. (2010). *CIRP construct technical report*. University of

 California, Los Angeles: Higher Education Research Institute.

Stanford University. (2012). Civic competencies: Student development outcomes. Retrieved June

21, 2012, from

http://studentaffairs.stanford.edu/haas/strategicplan/framework/ civiccompetencies.

Swaner, L.E. (2005). Linked engaged learning, student mental health and well-being, and civic

development: A review of the literature. Retrieved June 25, 2012, from

http://aacu.org/bringing_theory/documents/BTtP2005LiteratureReview.pdf.

The National Task Force on Civic Learning and Democratic Engagement. (2012). *A Crucible

moment: College learning and democracy's future.* Washington DC: Association of

American Colleges and Universities.

Titus, M. A. (2004). Examining the influence of institutional context on persistence at four-year

colleges and universities: A multilevel approach. *Research in Higher Education*, *45*(7), 673 -

699.

U.S. Department of Education, Office of the Under Secretary and Office of Postsecondary

Education. *Advancing civic learning and engagement in democracy: A road map and call to

action.* Washington DC: U.S. Department of Education.

Umbach, P.D. (2008). *The effects of part-time faculty appointments on instructional techniques

and commitment to teaching.* Paper presented at the Annual Meeting of the Association for

the Study of Higher Education, Jacksonville, FL.

Umbach, P.D. & Wawrzynski, M.R. (2005). Faculty do matter: The role of college faculty in

student learning and engagement. *Research in Higher Education, 46*(2), 153-184.

Vogelgesang, L.J. (2000). The impact of college on the development of civic values and skills:

An analysis by race, gender and social class. University of California, Los Angeles.

Retrieved from ProQuest Digital Dissertations. (AAT 9981724).

Vogelgesang, L.J., & Astin, A.W. (2000). Comparing the effects of community service and

    service-learning. *Michigan Journal of Community Service Learning*, *7*, 25-34.

Vogelgesang, L.J, & Astin, A.W. (2005). *Post-college civic engagement among graduates*

    (HERI research report number 2). Los Angeles: Higher Education Research Institute.

Vogelgesang, L. J. & Denson, N. & Jayakumar, U. M. (2010). What determines faculty-engaged

    scholarship? *The Review of Higher Education 33*(4), 437-472.

Table 1. Description of Longitudinal Samples

	Sample 1	**Sample 2**	**Sample 3**
Data	2008 YFCY matched with 2007 TFS	2011 DLE matched with 2006 to 2010 TFS	2010 CSS matched with 2006 TFS
Class Standing of Sample	First-Year Sample	First-Year: 2.2% Second-Year: 27.0% Third-Year: 21.6% Fourth-Year: 25.5% Fifth-Year: 3.7%	Senior-Year Sample
Sample Size	25,373	8,366	10,701
Number of Institutions	399	17*	97
Institutional Control	295 private 104 public	11 private 6 public	89 private 8 public
Race/Ethnicity of Sample	Asian: 7.4% Black: 4.1% Latina/o: 3.9% White: 76.0% Other Race: 1.9% Multiracial: 6.7%	Asian: 36.3% Black: 2.5% Latina/o: 12.4% White: 35.2% Other Race: 2.4% Multiracial: 11.2%	Asian: 5.0% Black: 3.5% Latina/o: 4.1% White: 79.9% Other Race: 2.0% Multiracial: 5.7%
Percent Female	65.9%	64.1%	62.4%

Note: * Indicates only matched longitudinal sample of institutions that participated in the TFS in all years for the cohorts who also took the DLE. The DLE was initially developed using broad access and diverse institutions, and continued to be used on campuses with more diverse student populations in 2011.

Table 2. Civic Outcomes, Reliabilities, and Factor Loadings Mapped to Civic Learning Spiral

Outcomes	YFCY	DLE	CSS
Spiral Component: Self			
Self & Others Factor (YFCY and CSS scale: 3-15)	α = 0.64		α = 0.66
Self Rating: Understanding of others	0.83		0.83
Self Rating: Self-understanding	0.75		0.76
Self Rating: Cooperativeness	0.71		0.72
Spiral Component: Communities and Cultures			
Change: Knowledge of people from different races/cultures (YFCY and CSS scale: 1-5)	**		**
Spiral Component: Knowledge			
CIRP Construct: Civic Awareness*	α = 0.81		α = 0.82
CIRP Construct: Integration of Learning*		α = 0.62	
Spiral Component: Skills			
CIRP Construct: Pluralistic Orientation*	α = 0.86	α = 0.81	α = 0.87
CIRP Construct: Critical Consciousness and Action*		α = 0.81	
Spiral Component: Values			
CIRP Construct: Social Agency*	α = 0.82	α = 0.83	α = 0.83
Spiral Component: Public Action			
Civic Engagement in Public Forums Factor (DLE scale: 3-15; CSS scale: 3-9)		α = 0.77	α = 0.67
Act: Publicly communicated your opinion about a cause (e.g., blog, email, petition)		0.85	0.82
Act: Demonstrated for/against a cause			0.75
Act: Demonstrated for a cause (e.g., boycott, rally, protest)		0.86	
Act: Helped raise money for a cause or campaign		0.77	0.75
Political Engagement Factor (DLE scale: 3-13; YFCY and CSS scale: 3-11)	α = 0.71	α = 0.77	α = 0.74
Goal: Keeping up to date with political affairs	0.86	0.90	0.87
Goal: Influencing the political structure	0.81	0.86	0.81
Act in past year: Discussed politics	0.71		0.77
Act: Discussed politics		0.75	

*CIRP Construct on 1-100 scale with mean of 50. Items and IRT parameters available at www.heri.ucla.edu/PDFs/constructs/Appendix2011.pdf

**Indicates CIRP surveys with single-item Communities and Cultures measure.

Table 3. Effects of Campus Practices on Longitudinal Civic Learning Outcomes

Outcomes	Leadership Training	Service Learning	Ethnic Studies	Women's Studies	Study Abroad
Self (YFCY)	0.10**	-0.05*	n/a	n/a	n/a
(CSS)			0.07**		
Knowledge of people from different races/cultures (YFCY)	0.04*	0.05**	n/a	n/a	n/a
(CSS)	0.05**	0.07***	0.08***	0.06***	0.12***
Civic Awareness (YFCY)		0.72***	n/a	n/a	n/a
(CSS)		0.68***	0.41**	0.76***	1.45***
Integration of Learning (DLE)	0.46*	0.82***	0.63**	0.58*	
Pluralistic Orientation (YFCY)	0.42*		n/a	n/a	n/a
(DLE)	0.64*		0.54*		
(CSS)			0.65***		0.58**
Critical Consciousness and Action (DLE)	0.90***	1.55***	0.87***	1.09***	0.70*
Social Agency (YFCY)	0.98***	0.57***	n/a	n/a	n/a
(DLE)	0.68**	1.22***		0.71**	
(CSS)	0.50**	0.84***	0.80***	0.58**	0.57**
Civic Engagement in Public Forums (DLE)	0.52***	0.47***	0.12*	0.43***	0.28***
(CSS)	0.26***	0.27***	0.05*	0.12***	0.07**
Political Engagement (YFCY)	0.08*	0.13***	n/a	n/a	n/a
(DLE)		0.24***	0.10*	0.18**	0.27***
(CSS)			0.08**	0.12***	0.14***

Note: Significance levels of unstandardized coefficients, *p=<.05; **p<.01; ***p<.001. Contact authors for full multilevel model coefficients. Empty spaces indicate no significant relationship after controls were introduced and all other independent variables were accounted for in the models.

Table 4. Effects of Informal College Experiences on Longitudinal Civic Outcomes

Outcomes	Positive Cross-Racial Interaction	Volunteer Work	Sorority/ Fraternity Member	Racial/ Ethnic Organization	Voting in Student Election
Self (YFCY)	0.01***	0.07***	-0.15***	n/a	0.03*
(CSS)	0.01***	0.08**		0.10**	
Knowledge of people from different races/cultures (YFCY)	0.02***			n/a	
(CSS)	0.01***		-0.07**	0.14***	0.04**
Civic Awareness (YFCY)	0.04***	0.55***	-0.69**	n/a	0.44***
(CSS)	0.03***		-0.56*	0.71**	0.41***
Integration of Learning (DLE)	0.19***				n/a
Pluralistic Orientation (YFCY)	0.15***	0.31*	-0.95**	n/a	0.41**
(DLE)	0.21***	0.28**			n/a
(CSS)	0.21***			1.45***	
Critical Consciousness and Action (DLE)	0.30***	0.52***	-0.98**		n/a
Social Agency (YFCY)	0.11***	1.19***		n/a	0.49***
(DLE)	0.15***	1.43***	-0.63*	1.05***	n/a
(CSS)	0.16***	2.25***	-0.43*	1.38***	
Civic Engagement in Public Forums (DLE)	0.03***	0.86***	0.32***	0.53***	n/a
(CSS)	0.01***	0.27***	0.17***	0.24***	0.23***
Political Engagement (YFCY)	0.01***			n/a	0.14***
(DLE)	0.03***	0.25***		0.19**	n/a
(CSS)	0.02***	0.08**		0.13**	0.12***

Note: Significance levels of unstandardized coefficients, $*p=<.05$; $**p<.01$; $***p<.001$. Contact authors for full multilevel model coefficients. Empty spaces indicate no significant relationship after controls were introduced and all other independent variables were accounted for in the models.

Appendix A. Independent Variables and Coding Schemes

Variables	Survey				Scale and Coding Schemes
	TFS	YFCY	DLE	CSS	
Background Characteristics					
Sex: Female	*				2-point (1= male, 2= female)
Race: White, Asian, Black, Hispanic, Other, Multiracial	*				Dummy coded (control= white)
SES: Low, Lower-middle, Upper-middle, High income	*				Dummy coded (control= upper-middle)
High School GPA	*				8-point (1= D, 8= A or A+)
SAT composite	*				Continuous (400= min., 1600= max.)
Political views	*				5-point (1= far right, 5= far left)
Direct and Proxy Pre-Tests					
Self & Others Factor Pre-Test (α: .64 –.66)	*				Continuous (3= min., 15= max.)
Self-rating: Understanding of others					5-point (1= lowest 10%, 5= highest 10%)
Self-rating: Self-understanding					5-point (1= lowest 10%, 5= highest 10%)
Self-rating: Cooperativeness					5-point (1= lowest 10%, 5= highest 10%)
CIRP Construct: Social Agency Pre-Test (α: .82–.83)	*				Continuous (1= min., 100= max.)
Goal: Keeping up to date with political affairs					4-point (1= not important, 4= essential)
Goal: Participating in a community action program					4-point (1= not important, 4= essential)
Goal: Influencing social values					4-point (1= not important, 4= essential)
Goal: Becoming a community leader					4-point (1= not important, 4= essential)
Goal: Helping others who are in difficulty					4-point (1= not important, 4= essential)
Goal: Helping to promote racial understanding					4-point (1= not important, 4= essential)
Political Engagement Factor Pre-Test (α: .71–.77)	*				Continuous (3= min., 11= max.)
Goal: Keeping up to date with political affairs					4-point (1= not important, 4= essential)
Goal: Influencing the political structure					4-point (1= not important, 4= essential)
Act in past year: Discussed politics					3-point (1= not at all, 3= frequently)
Racial composition of the neighborhood where you grew up	*				5-point (1= completely non-white, 5= completely white)
Act in past year: Socialized with someone of another racial/ethnic group	*				3-point (1= not at all, 3= frequently)
Act in past year: Read a newspaper for national and global news	*				3-point (1= not at all, 3= frequently)
Act in past year: Read a newspaper for local news and information	*				3-point (1= not at all, 3= frequently)
Act in past year: Participated in political demonstrations	*				3-point (1= not at all, 3= frequently)
Pre-College Experiences					
Act in past year: Performed community service as part of a class	*				3-point (1= not at all, 3= frequently)
Act in past year: Performed volunteer work	*				3-point (1= not at all, 3= frequently)
College Experiences					
Campus Facilitated Curricular Experiences					
Act in past year: Performed community service as part of a class		*	*	*	3-point (1= not at all, 3= frequently)
Act in college: Taken an ethnic studies course			*	*	2-point (1= no, 2= yes)
Act in college: Taken a women's studies course			*	*	2-point (1= no, 2= yes)
Campus Facilitated Co-Curricular Experiences					
Act in college: Participated in leadership training		*	*	*	2-point (1= no, 2= yes)
Act in college: Joined a social fraternity or sorority		*	*	*	2-point (1= no, 2= yes)
Act in college: Joined/participated in an ethnic/racial student organization			*	*	2-point (1= no, 2= yes)
Act in college: Participated in a study-abroad program			*	*	2-point (1= no, 2= yes)
Informal Experiences					
CIRP Construct: Positive Cross-Racial Interaction		*	*	*	Continuous (1= min., 100= max.)
Dined or shared a meal					5-point (1=never, 5= very often)
Had meaningful and honest discussions about race/ethnic relations outside of class					5-point (1=never, 5= very often)
Shared personal feelings and problems					5-point (1=never, 5= very often)
Had intellectual discussions outside of class					5-point (1=never, 5= very often)
Studied or prepared for class					5-point (1=never, 5= very often)
Socialized or partied					5-point (1=never, 5= very often)
Act in past year: Performed volunteer/community service work		*	*	*	3-point (1= not at all, 3= frequently)
Act in college: Voted in a student election		*		*	3-point (1= not at all, 3= frequently)
Act in past year: Worked on a local, state, or national political campaign		*		*	3-point (1= not at all, 3= frequently)
Academic Practices/Experiences					
CIRP Construct: Habits of Mind		*	*	*	Continuous (1= min., 100= max.)
Ask questions in class					3-point (1= not at all, 3= frequently)
Support your opinions with a logical argument					3-point (1= not at all, 3= frequently)
Seek solutions to problems and explain them to others					3-point (1= not at all, 3= frequently)
Revise your papers to improve your writing					3-point (1= not at all, 3= frequently)
Evaluate the quality or reliability of information you received					3-point (1= not at all, 3= frequently)
Take a risk because you felt you had more to gain					3-point (1= not at all, 3= frequently)
Seek alternative solutions to a problem					3-point (1= not at all, 3= frequently)
Look up scientific research articles and resources					3-point (1= not at all, 3= frequently)
Explore topics on your own, even though it was not required for a class					3-point (1= not at all, 3= frequently)
Accept mistakes as part of the learning process					3-point (1= not at all, 3= frequently)
Seek feedback on your academic work					3-point (1= not at all, 3= frequently)

Act: Discussed course content with students outside of class		*	*	*	3-point (1= not at all, 3= frequently)
Act in college: Communicated regularly with your professors		*			2-point (1= no, 2= yes)
Act: Communicated regularly with your professors				*	3-point (1= not at all, 3= frequently)
Change: Analytical/ problem-solving skills		*			5-point (1= much weaker, 5= much stronger)
Change: Problem-solving skills				*	5-point (1= much weaker, 5= much stronger)
Campus Culture					
Campus Satisfaction: Respect for the expression of diverse beliefs		*	*	*	5-point (1= very dissatisfied, 5= very satisfied)
CIRP Construct: Sense of Belonging [†]		*	*	*	Continuous (1=min., 100=max.)
Inst Opinion: I see myself as part of the campus community					4-point (1= disagree strongly, 4= agree strongly)
Inst Opinion: I feel I am a member of this college					4-point (1= disagree strongly, 4= agree strongly)
Inst Opinion: I feel a sense of belonging to this campus					4-point (1= disagree strongly, 4= agree strongly)
Institutional Characteristics					
Institutional control	*	*	*	*	2-point (1= public, 2= private)
Selectivity	*	*	*	*	Continuous (400= min., 1600= max.)
Percent students of color (IPEDS)					Continuous (1= min., 100= max.)
Percent part-time faculty (IPEDS)					Continuous (1= min., 100= max.)
Member of Campus Compact					2-point (1= no, 2= yes)
Act in past year: Performed community service as part of a class (aggregate)	*				3-point (1= not at all, 3= frequently)
Goal: Improve my understanding of different countries/cultures (aggregate)	*				4-point (1= not important, 4= essential)

†Two out of three *Sense of Belonging* items were available on the 2008 YFCY

Appendix B. Multilevel Model Results for Civic Learning Outcomes on the YFCY

	Self and Others	Change in Knowledge	Civic Awareness	Pluralistic Orientation	Social Agency	Political Engagement
Student-Level Variables (Three Surveys)						
Asian	-.024	-.037	.114	-.321	.991 ***	-.127 *
Black	.117	.019	.408	.671	1.401 **	.190 *
Hispanic	.100 *	.065	.570	1.134 *	1.085 **	.048
Other Race	.123	-.045	.270	3.092 ***	.537	.030
Multiracial	.132 *	-.117 ***	-.939 **	1.672 ***	-.035	-.045
Sex: Female	-.096 ***	.016	-.575 ***	-1.282 ***	.281	-.116 ***
Low Income	-.049	.024	-.099	.692	-.074	-.027
Low Mid Inc	-.027	.030	-.129	.009	-.122	.026
High Income	.056	-.015	-.172	-.139	-.029	.013
High School GPA	.041 **	.016 *	-.015	-.038	.074	-.038 **
SAT	.000	.000 ***	-.003 ***	.004 ***	-.004 ***	.000
Political View	-.012	-.009	.243 *	1.644 ***	.074	.006
Pre-Test	.473 ***	-.098 ***	n/a	1.334 ***	.578 ***	.501 ***
Pre-Test 2	n/a	n/a	n/a	-.362 **	n/a	n/a
HS SL	.004	.019	-.042	-.139	-.086	-.045 **
HS Volunteer	.002	-.003	-.170	.666 ***	.404 **	-.001
Service Learning	-.049 *	.047 **	.719 ***	-.102	.566 ***	.128 ***
Volunteer	.073 ***	.025	.551 ***	.308 *	1.192 ***	.035
Greek	-.147 ***	-.014	-.690 **	-.946 **	-.033	-.019
Leadership Train	.098 **	.035 *	.340	.422 *	.975 ***	.079 *
Cross-Racial	.007 ***	.015 ***	.036 ***	.151 ***	.106 ***	.012 ***
Discuss Content	.059 *	-.008	-.346 **	.480 **	-.065	.012
Satis. w/Respect	.076 ***	.059 ***	1.091 ***	1.326 ***	.823 ***	.064 **
Sense of Belong	.068 ***	.049 ***	.321 ***	.005	.087	-.017
Habits of Mind	.014 ***	-.001	.054 ***	.214 ***	.101 ***	.023 ***
Student-Level Variables (Two Surveys)						
Problem-Solving	.123 ***	.259 ***	3.187 ***	.220	.443 ***	-.001
Comm. w/Prof.	-.002	-.023	.034	-.558 **	.058	-.017
Student Election	.032	.027 *	.435 ***	.410 **	.489 ***	.137 ***
Work Campaign	-.093 *	-.023	1.685 ***	.339	1.617 ***	.558 ***
Institutional-Level Variables						
Percent PT Fac.	.169	.075	1.866 *	1.357 *	-.109	.036
Percent SoC	-.104	.112	-1.876	-.683	-1.057	-.070
Camp Com	.067	.015	.470	.436	-.098	.021
Peer Goal	-.013	-.001	1.911 *	.651	-.340	.030
Peer HSSL	-.355	.232	3.052 *	-.850	1.247	.317
Control	-.027	-.035	-1.345 ***	-.954 ***	-.386	-.093 *

| Selectivity | .000 | .000 | .000 | .000 | .000 | .000 |

Note : Significance levels of unstandardized coefficients, *p=<.05; **p<.01; ***p<.001.

Appendix C. Multilevel Model Results for Civic Learning Outcomes on the DLE

	Integration of Learning	Pluralistic Orientation	Critical Con. and Action	Social Agency	Civic Engagement	Political Engagement
Student-Level Variables (Three Surveys)						
Asian	-.795 **	-.830 **	-.273	1.360 ***	-.070	-.142 *
Black	-.120	2.108 **	1.635 *	1.141	.099	-.234
Hispanic	-.219	1.056 **	.428	2.319 ***	-.122	.195 *
Other Race	.387	3.368 ***	1.747 *	2.951 ***	.389 *	.418 **
Multiracial	-.186	.980 **	-.186	.411	-.015	.028
Sex: Female	.545 **	-1.281 ***	.980 ***	.320	-.301 ***	-.234 ***
Low Income	-.149	.237	.491	.736 *	.140	.071
Low Mid Inc	.068	-.133	.381	.453	.078	.058
High Income	.100	-.026	.159	-.123	.043	.079
High School GP/	-.001	-.079	-.313 **	-.151	-.092 **	-.053 *
SAT	-.003 **	-.003 **	-.002 *	-.007 ***	-.001 **	.126
Political View	.384 **	1.401 ***	.844 ***	.534 ***	.242 ***	.126 ***
Pre-Test	n/a	.546 *	n/a	.310 ***	n/a	.454 ***
Pre-Test 2	n/a	.179	n/a	n/a	n/a	n/a
HS SL	.301 *	-.077	.299 *	.438 **	.130 **	.006
HS Volunteer	.191	.448 *	.568 **	.118	.098 *	-.105 **
Service Learning	.819 ***	.302	1.549 ***	1.224 ***	.467 ***	.238 ***
Volunteer	.089	.276 **	.521 ***	1.430 ***	.855 ***	.246 ***
Greek	-.182	-.201	-.977 **	-.633 *	.325 ***	.036
Leadership Train	.459 *	.641 *	.896 ***	.682 **	.524 ***	.094
Cross-Racial	.188 ***	.213 ***	.302 ***	.155 ***	.030 ***	.028 ***
Discuss Content	1.099 ***	.296	.316	.183	-.117 *	.085 *
Satis. w/Respect	.292 *	.785 ***	.047	.104	-.137 ***	-.008
Sense of Belong	.052 ***	.045 **	.017	.076 ***	.007 *	.002
Habits of Mind	.505 ***	.227 ***	.315 ***	.151 ***	.033 ***	.032 ***
Student-Level Variables (Two Surveys)						
Ethnic Studies	.628 **	.539 *	.873 ***	.432	.122 *	.097 *
Women Studies	.581 *	.421	1.093 ***	.709 **	.427 ***	.178 **
Study Abroad	.084	.449	.695 *	-.181	.283 ***	.266 ***
Racial Org.	.164	.291	.187	1.048 ***	.525 ***	.185 **
Institutional-Level Variables						
Percent PT Fac.	-1.580	-.383	.507	-1.275	.258	.469
Percent SoC	-1.451	3.561	-.698	1.110	-.662	-1.147
Camp Com	.774	-.338	.574	-.228	.088	.315

Peer Goal	2.726	.241	2.437	-.372	-.158	.909 *
Peer HSSL	3.647	3.096	3.724	3.786	-.389	-.723
Control	-1.323	-.447	-1.112	-.257	-.373	-.581
Selectivity	-.002	.001	.002	.003	-.001	-.001

Note : Significance levels of unstandardized coefficients, *p=<.05; **p<.01; ***p<.001.

Appendix D. Multilevel Model Results for Civic Learning Outcomes on the CSS

	Self and Others	Change in Knowledge	Civic Awareness	Pluralistic Orientation	Social Agency	Civic Engagement	Political Engagement
Student-Level Variables (Three Surveys)							
Asian	.060	-.018	-.109	.065	.003	-.058	-.106
Black	.081	-.037	-.160	.518	.507	-.076	-.050
Hispanic	-.024	-.015	.725	.731	.867 *	-.045	.096
Other Race	-.051	-.015	.200	.229	-.838	.194 **	-.017
Multiracial	-.004	-.073 *	.125	.288	.325	.034	.003
Sex: Female	-.065 *	-.022	-1.060 ***	-1.258 ***	.092	-.011	-.282 ***
Low Income	-.003	.043	.425	.596 *	.400	.057	.058
Low Mid Inc	-.050 *	.028	.127	.119	.097	.044	-.018
High Income	.029	-.004	.169	.025	.113	.054 *	.051
High School GPA	-.015	.026 **	-.116	-.044	-.269 **	-.024 *	-.078 ***
SAT	.000 **	.000	.000	.000	-.003 ***	.000	.000
Political View	.036 *	-.006	.052	1.063 ***	.095	.058 ***	-.015
Pre-Test	.357 ***	-.074 ***	.663 ***	.884 ***	.429 ***	.157 ***	.373 ***
Pre-Test 2	n/a	n/a	.192	-.060	n/a	n/a	n/a
HS SL	-.045 **	-.003	-.145	-.361 **	-.219 *	.013	-.037 *
HS Volunteer	-.023	-.011	-.083	.625 ***	-.125	.021	-.023
Service Learning	.006	.067 ***	.680 ***	.073	.839 ***	.274 ***	.029
Volunteer	.076 **	.010	.084	.092	2.246 ***	.272 ***	.084 **
Greek	-.002	-.066 **	-.557 *	-.163	-.433 *	.170 ***	-.044
Leadership Train	.023	.052 **	.030	.193	.504 **	.260 ***	.002
Cross-Racial	.014 ***	.010 ***	.030 **	.206 ***	.156 ***	.015 ***	.019 ***
Discuss Content	-.009	.026	.385 *	.098	-.117	.050 *	.056 *
Satis. w/Respect	.036 *	.110 ***	.777 ***	.260 **	.100	.003	-.025
Sense of Belong	.018 ***	.004 **	.081 ***	.051 ***	.070 ***	.003	.001
Habits of Mind	.017 ***	.002	.078 ***	.194 ***	.104 ***	.021 ***	.028 ***
Student-Level Variables (Two Surveys)							
Problem-Solving	.179 ***	.275 ***	3.848 ***	.588 ***	.475 ***	-.027	.017
Comm. w/Prof.	-.038	-.013	-.615 ***	-.490 **	-.149	.106 ***	-.028
Student Election	.006	.040 **	.411 ***	-.179	.074	.227 ***	.116 ***
Work Campaign	.012	-.002	1.166 ***	.366	2.259 ***	.505 ***	.811 ***
Ethnic Studies	.065 **	.082 ***	.410 **	.647 ***	.804 ***	.051	.083 **
Women Studies	-.013	.061 ***	.757 ***	.233	.584 **	.117 ***	.121 ***
Study Abroad	.039	.118 ***	1.452 ***	.580 **	.569 **	.066 **	.144 ***
Racial Org.	.099 **	.141 ***	.714 **	1.448 ***	1.375 ***	.235 ***	.129 **
Institutional-Level Variables							
Percent PT Fac.	.046	-.056	-1.460 *	-.583	-.731	.020	-.258 **
Percent SoC	.122	.284 *	2.054 *	.571	-.487	.023	.223
Camp Com	-.012	-.035	.296	-.037	-.107	-.014 *	.060
Peer Goal	-.157	.193 *	.594	-1.217 *	-.816	-.309 *	.150
Peer HSSL	-.122	-.414 **	-.097	1.391	.579	.142	.172
Control	-.065	-.029	-1.118 ***	-.789	-1.233 **	.114	-.267 ***
Selectivity	.000	.000 *	-.001	.001	-.002	.000	.000