

Is Political Science Raising Politicians? :
The Influence of Civic Education on Political Ambition

by

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ABSTRACT

Objective. Both the civic education literature and the political ambition literature leave a gap in addressing the impact of political science coursework on political ambition. I address this gap by specifying the relationships between civic education, political knowledge, and political ambition. *Methods.* I employ paired t tests, chi-square tests, and Fisher's exact probability tests on an original dataset of 174 paired pre- and post-test survey responses. My survey improves upon prior works in the ambition literature (Fox and Lawless 2013) by virtue of its field experiment design. *Results.* My findings indicate that political science coursework has a positive impact on political knowledge, but only among women, and that political science coursework has a negative impact (among women) on one of the most valid measures of political ambition—how likely one is to run for office in the future. *Conclusions/Implications.* The results have negative normative implications for those trying to use political education as an instrument to reduce the gender gap (see Lawless and Fox 2010, Fox and Lawless 2013) in political ambition. This suggests the need to explore further options for increasing political ambition, particularly among women.

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CHAPTER 1

INTRODUCTION

A civic, or political, education is often considered vital to raising politically knowledgeable citizens who participate in democracy (Galston 2001). However, it is unclear whether a civic education also encourages people to actually want to run for office. Thus, a question remains as to whether political science also “raises” politicians. This question, which is understudied in both the civic education and political ambition literatures, is the focus of the present work. By using an experimental design employing original surveys, the present work takes an exploratory look at whether political education increases one’s political ambition via increased political knowledge. The examination of the relationships between political education, political knowledge, and political ambition is important because these relationships may have implications for increasing the political ambition of groups, such as women, who are underrepresented in the upper echelons of politics (Lawless and Fox 2010, Fox and Lawless 2013).

CHAPTER 2

LITERATURE REVIEW

Civic education, be it in a traditional (Conover and Searing 2000, Niemi and Hepburn 1995, Niemi and Junn 1993, Niemi and Junn 1998) or a more interactive format¹ (Pasek Feldman Romer and Jamieson 2008, Leming 1996) imbues students with political knowledge (Mannheim 1952, Galston 2001, Torney-Purta and Amadeo 2003, Hillygus 2005). Political knowledge, alternately termed “political sophistication” (Highton 2009), in turn, is a multi-dimensional measure of one’s level of political expertise and understanding (Luskin 1987, Luskin 1990). Specifically, political knowledge has “three dimensions: size (the number of cognitions), range (the coverage of the political universe), and organization (constraint)” (Carpini and Keeter, 1993: 1180, Luskin 1987, Luskin 1990).

The knowledge-increasing role of a civic, or political science,² education is generally considered important to the functioning of U.S. democracy because political knowledge translates into specific skills and attitudes that are vital to the democratic process (Galston 2001, Galston 2004). For instance, political knowledge has been found to improve the consistency and strength of one’s political beliefs over time (Carpini and Keeter 1996: 236–38; Galston 2001: 223), it increases one’s support of democratic principles and tolerance (Nie et al. 1996: 71-72; Galston 2001: 224), it decreases distrustful attitudes of government (Popkin and Dimcock 1999: 127-129; Galston 2001:

¹ Such as “We the People” courses, in which students participate in mock congressional testimonies (Leming 1996).

² For the rest of this work, I use the terms “civics,” “civic education,” “political (science) education,” and “political science courses” interchangeably.

224), and (perhaps most importantly) it can help encourage increased political participation (Hooghe and Dassonneville 2011, Ondercin and Jones-White 2011, Galston 2001: 224)³ including voting (Carpini and Keeter 1996, Ondercin and Jones-White 2011, Popkin and Dimcock 1999).

Civic education is a particularly important socializing agent for political skills and attitudes because people tend to be most exposed to civic education during late secondary school and early college, when they are aged roughly between 14 and 25—precisely the time when thinking patterns fully mature (Niemi and Hepburn 1995, Mannheim 1952). This is significant because the political stances developed during these later parts of adolescence tend to be carried on into the rest of adult life (Jennings 1996: 249, Nie, Junn, and Stehlik-Barry 1996: 138, Galston 2001: 231-232). Thus, the political knowledge and skills that one develops while taking civics or political science courses might be particularly long-lasting.

There is, however, another attitude that is vital to the functioning of U.S. democracy which is not accounted for in the list of attitudes that civics and political knowledge help to inculcate. That missing attitude is political ambition. Simply put, political ambition is “the desire to acquire and hold political power through electoral means” (Lawless and Fox 2010: 3), in other words, political ambition represents one’s desire to run for office. Political ambition is important to the functioning of U.S. democracy because the United States needs people to run in order to fill its many elected

³ C.f., Torney-Purta and Amadeo 2003, who, in analyzing the results of the International Association for the Evaluation of Educational Achievement’s (IEA) Civic Education Study from 1994-1998 and 1999-2000 across seven countries including the U.S., find neither that civic knowledge is a predictor of community volunteerism, nor that community volunteerism is a predictor of future voting.

political leadership positions. Yet, its absence from the list of skills and attitudes above is not to say that political ambition is not influenced by civic education and political knowledge, but rather, that this area is under-studied in both in the civic education and the political ambition literature.⁴

This latter literature spans nearly half a century, with much of the early work emphasizing the political ambition of male elected officials who have already run for office at least once⁵ (Schlesinger 1966; Black 1972; Rohde 1979); later works expand to examine the ambition of female office-holders, as well (Palmer and Simon 2003, Fulton, Maestas, Maisel and Stone 2006). In terms of approach, many of these works proceed in a rational choice vein (Schlesinger 1966, Black 1972, Rohde 1979, Palmer and Simon 2003), though some more recent works have moved away from a formal rational choice approach and have made ample use of survey data, be it pre-existing (Moore 2005, Fulton, Maestas, Maisel and Stone 2006),⁶ or original (Costantini 1990, Fox and Lawless 2005, Lawless and Fox 2010). The second of these groups, the authors that use original data, have also primarily moved toward studying the initial, or “nascent” (Fox and Lawless 2005), political ambition of those who want to run for their first elective office (Costantini 1990, Fox and Lawless 2004, Fox and Lawless 2005, Lawless and Fox 2010), and pay special attention to underrepresented groups like women. Such studies of initial or “nascent” political ambition are important from a normative standpoint because they

⁴ One exception to this in the ambition literature is Fox and Lawless (2013), who examine political education relatively broadly, and whose work will be discussed in further detail in on pages 6-7.

⁵ See Costantini 1990 for an exception, as his work uses mail questionnaires to also analyze the political ambition of non-officeholders (political activists), both male and female.

⁶Specifically for both Moore 2005 and Fulton, Maestas, Maisel and Stone 2006, this data source is the 1990 Citizen Participation Study.

can help determine who the “new faces” in elected positions are going to be, and perhaps more importantly, who they are not going to be. For example, Lawless and Fox’s (2010) research provides an in-depth examination of the reasons why women are less politically ambitious—and thus less represented in the upper echelons of politics—than men.⁷

A closer look at the research on nascent political ambition reveals a complex web of variables that can influence one’s desire to initially run for office—variables that often leave men more politically ambitious than women. For instance, in the results of their study of over 2,000 adults in the careers that most often feed into politics, Lawless and Fox (2010) suggest that a number of factors are significant contributors to political ambition (and the gender gap in it), including income, age, political recruitment, political interest, and importantly, (other forms of) political participation and self-perceived qualifications (or how qualified one feels to run for elective office) (152-153). Moreover, when examining differences in political ambition among younger (high-school and college-aged) respondents, Fox and Lawless (2013) found that “the primary agents of political socialization – family, school, peers, and media,” and “political interest, [and] activism” as well as “participation in competitive activities and a general sense of self-confidence” (29) helped stimulate political ambition—particularly among young men,

⁷ Specifically, Lawless and Fox (2010) note disadvantages to adult women who are employed in the careers that most commonly feed into political office-holding (law, business, education, and politics [e.g., activism] [30]), particularly when it comes to the factors that influence the decision to run for office. For example, among similarly qualified women and men, 28% of women compared to 12% of men said that they were “not at all qualified” to run for office—indicating that women have been socialized to doubt their abilities to run for office more than twice as often as their male counterparts (Lawless and Fox 2010: 116). This is important because, as Lawless and Fox (2010) note, “the gender gap in self-perceived qualifications [for holding office] serves as the most potent explanation . . . for the gender gap in political ambition” (134), a gap that currently leaves women holding only 18.2% of the seats in the U.S. House of Representatives and 20% of the seats in the U.S. Senate (Center for American Women in Politics 2014), despite the fact that women make up 50.8% of the population (U.S. Census Bureau 2012).

who possess disproportionate access to each of these agents of socialization, especially by the time college rolls around.

Importantly, Fox and Lawless (2013) look at schooling as a possible agent of socialization for political ambition. However, they examine the impact of a political education only in relatively broad strokes, by asking whether students have taken a government class and (separately) whether they have participated in political discussions in classrooms (Fox and Lawless 2013). Lawless and Fox (2010) and Fox and Lawless (2013) do not examine the impact of the exposure to civic education directly—by gauging respondent’s level of political ambition both before and after exposure to political science coursework. This is significant because Hillygus (2005) finds that political participation is increased by the civics and language skills that come specifically from social studies curricula. This suggests that civics curricula, and the political knowledge and skills that such curricula imparts, may have a direct impact on a heightened form of political participation⁸ —political ambition—an impact that may be especially important to groups (such as women) who have been identified as having reduced ambition levels (Lawless and Fox 2010, Fox and Lawless 2013).

One might object to this line of reasoning by pointing out that in earlier studies—namely, in Lawless and Fox’s (2010) comprehensive model of political ambition⁹—the coefficient for political knowledge (0.10) was not found to be statistically significant.

⁸ There is a precedent for treating political ambition as a type of (heightened) political participation. For example, in one of their datasets, the Civic Education Study (which covers the United States), Wolbrecht and Campbell (2007) treat one’s political ambition, specifically one’s desire to “be a candidate for a local or city office” (927), as simply another form of political activity.

⁹ Their “Fully Specified (logistic regression) Model of Who Runs for Office” (Lawless and Fox 2010: 152-153).

Notably, however, the knowledge variable in Lawless and Fox's original work ("how many of [a] respondent's members of Congress (House of Representatives and Senate) he or she can name" [2010:208]), may have been underspecified, illustrating only one dimension of political knowledge (see Luskin 1987, and Carpini and Keeter 1993), suggesting the need to retest Lawless and Fox's (2010) findings with a measure of political ambition that taps multiple dimensions of political knowledge.¹⁰ Moreover, the political knowledge coefficient was calculated with all other variables set at their means (Lawless and Fox 2010: 152-153), which may have obscured the mechanism by which political knowledge impacts political ambition. This is because political knowledge may still have interaction effects with some of the other statistically significant variables in Lawless and Fox's model. For example, political knowledge has already been shown by others to be linked to "political participation"¹¹ (Carpini and Keeter 1996, Onderscin and Jones-White 2011, Popkin and Dimcock 1999, Hooghe and Dassonneville 2011, Galston 2001: 224). Furthermore, "self-perceived qualifications"¹² for holding political office—which are the most important contributors to political ambition, particularly among women (Lawless and Fox 2010)¹³—are at least partially based on politically-related skills, such as knowledge "about public policy issues" (Lawless and Fox 2010: 118), skills that should improve with further political education and knowledge.

¹⁰ See the *Measurement* section, pages 20-23, for more details.

¹¹ Which is measured by Lawless and Fox (2010) as the "level of [a] respondent's political participation (over the course of the past year) based on the following activities: voted, contacted an elected official, joined or paid dues to an interest group, wrote a letter to a newspaper, contributed money to a campaign, volunteered for a candidate, volunteered on a community project, attended a political meeting, served on the board of a nonprofit organization. Lower numbers indicate lower levels of political engagement" (208).

¹² Which is measured by Lawless and Fox (2010) as a "respondent's level of self-perceived qualifications for holding elective office," ranging from 'not at all qualified' (1) to 'very qualified' (4)" (211).

¹³ Specifically, Lawless and Fox (2010) note that "the gender gap in self-perceived qualifications [for holding office] serves as the most potent explanation . . . for the gender gap in political ambition" (134).

Thus, by using survey research in a classical (field) experiment design to directly measure students' exposure to introductory college level political science courses, their level of political knowledge (on multiple dimensions), and their interest in running for office, this study seeks to fill the gaps in the extant literature by asking: "do introductory level college courses in political science help make people want to be politicians?"

Not only is asking such a question important to specifying the relationships between civic education, political knowledge, and political ambition, but it is also important substantively because if civic education can be found to help increase political ambition among a variety of politically underrepresented groups (e.g., women, who have been found to be less politically ambitious than their male counterparts [Lawless and Fox 2010, Fox and Lawless 2013]), then it may serve as a way in which to indirectly increase the numbers of such individuals in office in the long term, thus improving the political representation of those groups. In addition to being valuable on its own merit, such improved political representation can lead to important benefits such as better issue-based representation for those underrepresented groups, affirmation of those groups' ability to hold leadership roles, and the sense of a more representative and legitimate democracy for all (Mansbridge, 1999).

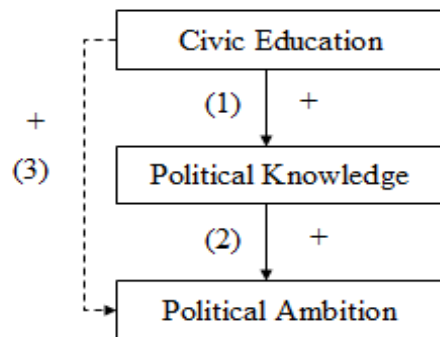
CHAPTER 3

HYPOTHESES

It may be helpful to clarify the expected relationships between civic education, political knowledge, and political ambition using a visual illustration. *Figure 1* below suggests that (1) civic education will positively impact political knowledge, and that (2) political knowledge will positively impact political ambition. In this way, (3) civic education will also positively impact political ambition (though perhaps in a relationship of somewhat limited strength, as indicated by the dotted line in *Figure 1*).

Figure 1

A Visual Representation of the Major Hypothesized Relationships between Civic Education, Political Knowledge, and Political Ambition



Written out, these expected relationships form the following hypotheses:

- (1) *Civic education is positively related to political knowledge.*
- (2) *Political knowledge is positively related to political ambition.*
- (3) *Civic education is positively related to political ambition.*

The first relationship is expected because, as noted in the literature review, research suggests that civic education is a good way to inculcate political knowledge

(Niemi and Hepburn 1995, Niemi and Junn 1993, Niemi and Junn 1998). However, such a relationship remains important to test because some studies suggest that educational attainment (e.g. Highton 2009) and civic education specifically (e.g., Langton and Jennings 1968, Luskin 1990, and Hooghe and Dassonneville 2011¹⁴) has a limited impact on political knowledge.

The second relationship is anticipated because it makes sense that the more knowledgeable one feels about politics, the more liable s/he is to feel comfortable considering a run for office. This may be because as one becomes more knowledgeable, s/he might feel more qualified to run for office, and/or more inclined to engage in various forms of political participation (on political participation, see: Carpini and Keeter 1996, Ondercin and Jones-White 2011, Popkin and Dimcock 1999, Hooghe and Dassonneville 2011, Galston 2001: 224), which may ultimately extend to an interest in running for office.¹⁵ Similarly, the more knowledgeable that a person becomes about politics, the more s/he might discover that the issues s/he feels strongly about need more political attention and involvement—thus incurring her/his political participation and ambition. Notably, these two mechanisms (self-perceived qualifications and political participation) by which political knowledge might encourage political ambition are two variables that Lawless and Fox (2010) found to be significant contributors to political ambition (152-153).

Alternatively, political knowledge could have the exact opposite impact on self-perceived qualifications. As individuals are more exposed to political knowledge, for

¹⁴ Hooghe and Dassonneville 2011 look at coursework in political science specifically.

¹⁵ See footnote 8.

example, they may become more cynical of politics, thus limiting how politically qualified they feel and how much they want to run for office. While this effect would seem contrary to the mechanisms through which the literature suggests that political knowledge may affect political ambition, (namely, that increased knowledge leads to increased self-perceived qualifications [Lawless and Fox 2010] and political participation [Carpini and Keeter 1996, Ondercin and Jones-White 2011, Popkin and Dimcock 1999, Hooghe and Dassonneville 2011, Galston 2001: 224]), it is still possible that such a relationship exists. For this reason, *Hypothesis 2* is particularly interesting to examine.

The third relationship is expected because if the relationships between civic education and political knowledge, and political knowledge and political ambition are positive, then it should logically follow that the relationship between civic education and political ambition is also positive.¹⁶ However, this relationship should be expected for more than mere reasons of transitivity. It also makes substantive sense. The subject matter of civics, which also teaches fundamental principles of (American) political science, should be expected to encourage at least some students to want to be politicians by giving them more awareness about politics writ large (thus potentially setting them up for more political qualifications or introducing them to issues they want to make a difference in), and by giving them more awareness of the possibilities, procedures, and qualifications needed to run for office.

Notably, regarding the second and third hypotheses, there is a possibility that civic education may differentially impact different groups. For example, as early as their

¹⁶ Notably, this relationship (3) may be weaker than the other two ([1] and [2]) because it operates through an indirect mechanism between the other two relationships.

1968 study, Langton and Jennings (1968) suggested that certain underrepresented minority groups¹⁷ might be particularly disposed to political knowledge-increasing effects of civic education even when other groups are not (867). While Langton and Jennings (1968) suggest that this may occur because such groups are less exposed to civic content early on in the home (859-865, 867), there may be a more specific effect which occurs with one particular minority group: women.

For example, women appear more attuned than men to particular types of political issues—such as civil liberties and religious freedoms—and therefore develop a different focus in their political knowledge (Verba, Burns, and Schlozman 1997; Niemi and Junn 1998; Hahn 1996). In addition, Dow (2009) has found that women have much lower returns in political knowledge from education than do men, making them score lower than their male counterparts on political knowledge measures over time. While there is some evidence that the apparent differences between political knowledge levels among women and men narrow when more questions about female politicians are added to surveys (Hooghe, Quintelier, and Reeskens 2006; Dolan 2011), and when “don’t know” options are eliminated (Mondak and Anderson 2004), other gender differences abound. For example, as mentioned earlier, Lawless and Fox (2010) and Fox and Lawless (2013) find that women are consistently less politically ambitious than men. These differences suggest the importance of examining the differences between these groups when it comes to the effects of civic education, especially if one may ultimately want to use civic education as a means to help narrow any political ambition and descriptive representation gaps.

¹⁷ In the case of their study, African-Americans.

CHAPTER 4

METHODS

In order to help determine whether exposure to political science curricula improves students' political knowledge and ambition via increased self-perceived qualifications and/or political participation, or whether the increase in political knowledge that may come from exposure to political science curricula actually decreases ambition via increased political cynicism, the hypotheses were tested using a classical (field) experiment research design. This design involves pre- and post- testing among an experimental and a control group (Babbie 2012: 230-232), and employed an original set of identical paper-and-pencil surveys.

Surveys were administered in two¹⁸ introductory college level political science courses (POS 110) —the experimental group, and in seven introductory college level liberal arts and sciences courses (LIA 101)¹⁹ —the control group, during the Fall 2013 semester at a large southwestern university. POS 110 courses were selected as an experimental group because these classes are required for all political science majors at the university studied, and cover diverse topics in American politics such as the branches

¹⁸ While two additional (in-person) POS 110 classes were surveyed online, they were dropped from the analysis due to the fact that, unlike the POS 110 classes surveyed in person, responses showed no change in the key independent variable of political knowledge. This may have occurred because students might have looked up answers during the non-supervised pre-test survey administration, thus biasing the results. However, because no LIA 101 control group courses were surveyed online for comparison, and because of low response rates, the online POS 110 surveys (with an n of 16 matched pre-and post-tests) were simply excluded from analysis.

¹⁹ Specifically, there were four LIA 101 courses, two CHM 191 (intro to chemistry) courses, and one LIA 294 (a second semester LIA 101 course, for those who didn't take LIA 101 in the fall). However, because all of these courses share a common syllabus, and constitute a required course for all liberal arts and sciences majors at the university studied, I grouped them all under the course title "LIA 101."

of U.S. government, key U.S. documents,²⁰ and the media. LIA 101 courses were selected as a control group because these classes are required for all liberal arts and sciences majors at the university studied.²¹ In LIA 101, students from a variety of backgrounds and majors are taught about university resources and study skills. The comparison between these experimental and control groups helps to determine whether it is in fact *political science* coursework, or just *any* exposure to college coursework, that improves students' political knowledge and ambition. It is important to have a control group in this study not only for experimental design reasons, but also because some of the literature suggests that one's exposure to college education alone is enough to improve one's political knowledge and involvement (Carpini and Keeter 1996, Nie et al. 1996).

Surveys were administered anonymously twice within each group—both at the beginning and at the end of the Fall 2013 semester, with approximately nine weeks between each administration. While anonymous, pre- and post-tests for each respondent were paired within each class using unique non-personally-identifiable codes written on the surveys by each student. These codes were composed of the first three letters of each respondent's first elementary school and the numbers indicating the month and day of her/his birth.²² Using these pairable codes,²³ the POS 110 experimental group yielded a

²⁰ Such as the U.S. Constitution and the Federalist Papers.

²¹ Note, however, as shown in *Appendix B*, that none of the LIA 101 students sampled listed political science as their primary major. In addition, 82.7%, or the vast majority, of the students in LIA 101 classes have taken no college-level political science coursework—either in previous semesters or in Fall 2013. This suggests that the POS 110 classes—the experimental group—and LIA 101 classes—the control group—constitute separate samples.

²² E.g., Broadmor Elementary School, February 1st, would have become BRO0201.

²³ Which were only paired if there was a perfect fit between the codes (e.g. POL1020 and POL1020); or, in the case of a slight school name misspelling (e.g., SUN versus SVN), number confusion/disregarded instructions (e.g. RON0602 and RON0694), or forgotten first school name (e.g. VIS0302 and CAL0302), only paired if, within the same class section (e.g. “Dr. Doe’s” POS 110 class), there was a perfect match

total n of 93 pairable pre and post-tests across the two classes surveyed,²⁴ and the LIA 101 control group yielded a total n of 81 pairable pre and post-tests across the two classes surveyed,²⁵ resulting in the creation of an original dataset with a total n of 174 students with paired pre- and post-tests.

In terms of the demographics of the samples, both the experimental group (POS 110 classes) and the control group (LIA 101) was composed primarily of white, 18-year-old²⁶ college freshman from upper-middle and upper class socioeconomic backgrounds²⁷ (see *Appendix B* for a more complete, percentage-based breakdown of the demographics of each sample). While most respondents from LIA 101 classes were biological sciences or health and wellness sciences majors, most respondents from POS 110 classes were political science majors. Nevertheless, the majority of LIA 101 students were exposed to no college-level political science courses either during or prior to the Fall 2013 semester, and the majority of the POS 110 students were exposed to no more than one college-level political science course either during or prior to Fall 2013 semester (See *Appendix B*).

These demographic similarities between the groups, and relative lack of prior exposure to

between the survey in question and a corresponding pre/post-test on all non-changing demographic indicators (i.e., race, sex, age, and income). All matches of the latter type were verified by an independent coder with 100% inter-coder reliability.

²⁴ Yielding a response rate of 37.2% for the paired surveys, which is a conservatively low estimate due to the fact that the number of students enrolled in each class was calculated at the beginning of the semester (after which some students may have dropped, and thus were not around to take the post-test) and because not all students were in attendance at the time of each survey administration. If one considers unpaired (i.e., all) surveys, the response rate increases to 61.4%. Notably, both POS 110 classes were large in size (with 50-100+ students) and thus there may have been limited social pressure to actually fill out the survey.

²⁵ Yielding a response rate of 67.5% for the paired surveys, which is a conservatively low estimate due to the fact that the number of students enrolled in each class was calculated at the beginning of the semester (after which some students may have dropped, and thus were not around to take the post-test) and because not all students were in attendance at the time of each survey administration. If one considers unpaired (i.e., all) surveys, the response rate increases to 81.3%. Notably, each LIA 101 class had fewer than 20 students, which may have increased the social pressure to actually fill out the survey.

²⁶ Respondents range in age from 18-24.

²⁷ With household incomes of \$75,001-\$100,000 and \$100,001-\$200,000, respectively.

political science coursework, made them suitable for use in the present classical experimental design.

Because this is an exploratory look at the survey data collected, analysis consists of difference of means (i.e., paired t) tests for non-dichotomous ordinal and interval level variables, and chi-square tests and Fisher's exact probability tests²⁸ for dichotomous variables. These methods offer a first look at whether there are any significant changes in the variables of interest (political knowledge, political cynicism, self-perceived qualifications, political participation, and political ambition) among students who were exposed to roughly one semester of introductory college level political science coursework. These results are compared to results among students who were not exposed to such political science coursework in order to determine (on a preliminary level) whether any changes among students in political science classes are due to the fact that those students are in political science classes specifically, or whether those changes are due to a general exposure to a college environment (Carpini and Keeter 1996, Nie et al. 1996).

Using this type of analysis, the hypotheses are confirmed in the following cases:

(1) *Hypothesis 1 (civic education is positively related to political knowledge)* is preliminarily confirmed if students in political science (POS 110) courses show statistically significant increases in political knowledge scores after exposure to one semester of political science coursework (POS 110), but students in intro to liberal arts (LIA 101) courses show no such difference at the end of one semester.

(2) *Hypothesis 2 (political knowledge is positively related to political ambition)* is

²⁸ Per convention, Fisher's exact probability tests were run when $n < 5$.

preliminarily confirmed if, after showing a significant increase in political knowledge by the end of the semester, students in political science (POS 110) classes also show statistically significant increases in their level of political ambition and in the mechanisms by which political knowledge could impact political ambition—their self-perceived qualifications and/or levels of political participation. In addition, students in political science (POS 110) classes must also show negative or no statistically significant differences in their level of political cynicism, and intro to liberal arts (LIA 101) students must show no statistically significant differences across any of the above measures by the end of the semester.

(3) *Hypothesis 3 (Civic education is positively related to political ambition)* is preliminarily confirmed if students enrolled in political science (POS 110) courses show statistically significant increases in political ambition scores after exposure to one semester of political science coursework, while students enrolled in intro to liberal arts (LIA 101) courses show no such differences at the end of the semester.

In addition, because Lawless and Fox (2010) and Fox and Lawless (2013) (and Verba, Burns, and Schlozman 1997; Niemi and Junn 1998; Hooghe, Quintelier, and Reeskens 2006; Mondak and Anderson 2004; Dolan 2011) suggest that each of the variables could have a slightly different relationship for men and for women (such that women are less politically ambitious and score lower on traditional²⁹ political knowledge

²⁹ I.e., scales that require respondents to identify the function of different branches of government and name specific (typically male) politicians. These scales do not generally include items that women perform well on, such as questions about civil liberties and female politicians (Verba, Burns, and Schlozman 1997; Niemi and Junn 1998; Hahn 1996; Hooghe, Quintelier, and Reeskens 2006; Dolan 2011).

scales, for example), analyses on the variables of interest in each of the groups (POS 110 and LIA 101) is further subdivided by gender.

CHAPTER 5

MEASUREMENT

The three core concepts in the present study—civic education, political knowledge, and political ambition, and the variables that may intervene between them (self-perceived qualifications, political participation, and political cynicism)—are measured in the following ways:

Civic Education

Importantly, students in both the control group—the intro to liberal arts (LIA 101) courses—and the experimental group—the political science (POS 110) courses—were enrolled in fall freshman level courses, and had little to no prior experience with political science coursework. Specifically, the majority of LIA 101 students were exposed to no college level political science courses either during or prior to the Fall 2013 semester, while the majority of the POS 110 students were exposed to no more than one college level political science course either during or prior to Fall 2013 semester.³⁰ This allowed for the use of these two different classes as proxies for exposure to, and no exposure to, political science coursework, respectively. Thus, separate paired t-tests, chi-square tests, and Fisher's exact probability tests were run³¹ on each of the variables of interest for students enrolled in POS 110 classes (the experimental group) and for students enrolled in LIA 101 classes (the control group). Analyses were also subdivided by gender within the POS 110 classes and the LIA 101 classes, respectively.

³⁰ See footnote 21.

³¹ T tests for non-dichotomous ordinal and interval level variables, and chi-square tests for dichotomous variables. In the chi-square tests, pre-test values were treated as the expected values. Fisher's exact probability tests were run when $n < 5$.

Political Knowledge

Despite the fact that political knowledge, or one's level of political understanding, has three dimensions,³² as Carpini and Keeter (1993) note, there is broad consensus that “factual knowledge is the best single indicator of [political] sophistication” (1180) (c.f.: Luskin 1987, Luskin 1990, Mondak 2001, Hooghe, Quintelier, and Reeskens 2006, Hooghe and Dassonneville 2011, Highton 2009, Lawless and Fox 2010, McGraw and Pinney 1990, Krosnick and Milburn 1990; Zaller 1990; Fiske, Lau, and Smith 1990; Price and Zaller 1990; Lodge, McGraw, and Stroh 1989). In other words, using a factual battery of questions is often considered the best way to concisely determine one's level of political knowledge.

Such political knowledge indexes have typically consisted of questions about how well one knows factual information about U.S. government (Luskin 1990, Mondak and Anderson 2004), specifically who her or his elected officials are, especially in the House and the Senate (Hooghe, Quintelier, and Reeskens 2006, Dassonneville and Hooghe 2011, Highton 2009)—and indeed, this is the measure that Lawless and Fox (2010) used in their Civic Ambition Panel Study (208). However, in their factor analytic examination of how to build a good political knowledge index, Carpini and Keeter (1993) found that questions that require respondents to remember a particular constitutional provision or the name of a governor or U.S. representative do not fare particularly well (1191).

Instead, Carpini and Keeter (1993) determined that a 5-item index based on questions from the National Election Study (NES) Surveys from 1990-1991 could be

³² As mentioned in the literature review, these are: “size (the number of cognitions), range (the coverage of the political universe), and organization (constraint)” (Carpini and Keeter, 1993: 1180; c.f.: Luskin, 1987; Luskin, 1990).

used to adequately measure each aspect of political knowledge with high validity and ability to discriminate among respondent's knowledge levels. Their recommended survey asks respondents a series of relatively traditional questions about the current party control of the house, the majority percentage required to override a veto, the relative ideological location of the two major parties, whose responsibility it is to conduct judicial review, and the identification of the vice president (Carpini and Keeter 1993: 1198). Notably, this five-item scale was also found to be reliable, as it has a coefficient alpha of 0.71 (Carpini and Keeter, 1993: 1199), and is comparable with longer measures (1993: 1200-1202) suggesting that it is appropriate for use. Such a short index is particularly good for use, as it eliminates fatigue by cutting down on the total survey length, which also may help garner a better response rate and thus improve reliability (Babbie 2012).

Additionally, Carpini and Keeter (1993) note that closed-ended responses, in which a respondent is presented with a series of options, perform just “as well as open-ended questions” (1191), in which a respondent is asked to volunteer her own answers. This is significant because Mondak and Anderson (2004) suggest that researchers can minimize a lack of response or “don't know” answers to items by offering respondents a set of options to select from—allowing researchers to increase the number of responses, reduce the otherwise high non-response rate among women specifically, and increase response reliability overall (228). For this reason, in this study, political knowledge is measured using a closed-ended adaptation of Carpini and Keeter's (1993) 5-item political knowledge index based on the 1990 and 1991 NES. *Table 1* below lists the precise survey questions used to measure political knowledge, whose number of correct answers (given

a 1) and incorrect answers (0) are combined into a knowledge index (with possible scores from 0, with no correct answers, to 5, with all correct answers). Because the combined knowledge index is an interval-level scale, differences over time in knowledge were assessed using paired t tests among students in both the LIA 101 and POS 110 classes. These analyses were also subdivided by gender for each group (LIA 101 or POS 110).

Table 1

List of Political Knowledge Survey Questions

Independent Variable	Question	Options	Codes	Source
Political Knowledge	Which party currently has control of the House of Representatives?	A. The Democratic Party; B. The Green Party; C. The Libertarian Party; D. The Republican Party	A: 1, B: 2, C: 3, D: 4; <i>Correct Answer:</i> D: 4 scored a 1, all other options scored a 0	Adapted from Carpini and Keeter 1993: 1198
Political Knowledge	Which party is more conservative?	A. The Democratic Party; B. The Republican Party; C. Both parties are equally conservative	A: 1, B: 2, C: 3; <i>Correct Answer:</i> B: 2 scored a 1, all other options scored a 0	Adapted from Carpini and Keeter 1993: 1198
Political Knowledge	How much of a majority is required for the U.S. Senate and House to override a Presidential veto?	A. 1/2; B. 2/3; C. 3/4; D. 5/8	A: 1, B: 2, C: 3, D: 4; <i>Correct Answer:</i> B: 2 scored a 1, all other options scored a 0	Adapted from Carpini and Keeter 1993: 1198

Political Knowledge	Whose responsibility is it to conduct judicial review?	A. The House of Representatives; B. The President; C. The Senate; D. The Courts	A: 1, B: 2, C: 3, D: 4; <i>Correct Answer:</i> D: 4 scored a 1, all other options scored a 0	Adapted from Carpini and Keeter 1993: 1198
Political Knowledge	Who is the current Vice President of the United States?	A. Barack Obama; B. Dick Cheney; C. Joe Biden; D. John Kerry	A: 1, B: 2, C: 3, D: 4; <i>Correct Answer:</i> C: 3 scored a 1, all other options scored a 0	Adapted from Carpini and Keeter 1993: 1198

Potential Intervening Variables: Self-Perceived Qualifications, Political Participation, and Political Cynicism

There are three possible mechanisms by which increased knowledge from civics courses could impact one's political ambition. Increased self-perceived qualifications and increased levels of political participation could have a positive influence on ambition (as hypothesized) (Lawless and Fox 2010, Fox and Lawless 2013), while political cynicism (as measured by Dancey 2012) could have a negative impact.

Self-perceived qualifications are measured in two different ways. First, respondents are asked to identify if they possess any of 11 different political skills including knowledge about policy issues and good speaking skills, all of which are then combined into a interval-level scale ranging from 0 (where the respondent identifies with no political skills, as indicated by the respondent checking "none of the above options apply") to 11 (where the respondent identifies with all of the listed political skills) (Lawless and Fox 2010, Fox and Lawless 2013). This question (called "Skills" in *Table 2* below, and in later tables) is an indicator of self-perceived qualifications in the sense that

respondents attribute skills to themselves which are explicitly listed as political qualifications. The second measure of self-perceived qualifications (called “Future” in *Table 2* below, and in later tables) has been adapted to apply to the future tense—asking respondents how qualified they feel that they will eventually be to run for political office on an ordinal-level scale from 0 (“not at all qualified”) to 3 (“very qualified”) (Lawless and Fox 2010, Fox and Lawless 2013). While respondents’ evaluations of the future may vary, it is still expected that students exposed to political science coursework, and thus political knowledge, will have systematically higher evaluations of their future qualifications for office than will students not enrolled in such classes.

Political participation is measured as an 11 item list of political activities that respondents may have participated in, including protests and contacting an elected official (Lawless and Fox 2010), as well as more student-oriented activities, such as voting in a student election (Fox and Lawless 2013). Both of these types of opportunities are important to include in this measure, as the latter (student) political activities may capture political activity among respondents where more traditional forms of political activity (such as voting in a state election) were not available. For example, some new out-of-state students at the university sampled may not have known how to vote using an absentee ballot, but may have been otherwise politically active at the university, in student elections and other local activities. Thus, political participation is measured as an interval scale ranging from 0 (where the respondent participated in none of the listed political activities, as indicated by the respondent checking “none of the above options apply”) to 11 (where the respondent participated in all of the listed political activities).

Finally, cynicism is gauged using a question from Dancey's (2012) work on the impact of cynicism on the public's impression of political scandals. The question, which asked respondents to assess the degree to which they agreed or disagreed with the following statement "to succeed in American politics, a politician does not have to give up his personal integrity," was originally taken from Holm, Bochner, and Kraus' (1976) panel study administered to residents around Cleveland, Ohio before and during the 1973 Senate Watergate hearings. For the present survey, however, the wording in the integrity statement was changed from "does not" to "must" to eliminate negative statements for easier reading and less confusion (Babbie 2012). This measure was used because it has high face validity as an indicator of political cynicism, as it gauges a respondent's overall feeling of how much integrity politicians have in general, rather than gauging how much integrity a respondent believes that a specific politician has (which may pick up on a respondent's party identification rather than her level of political cynicism). The political cynicism scale ranges from 1 (with a very low level of political cynicism), to 5 (with a very high level of political cynicism).

The exact wordings for each of the self-perceived qualifications, political participation, and political cynicism questions are listed below in *Table 2*. Because each of these variables is measured using a non-dichotomous ordinal or interval scale, differences over time in each of the variables was assessed using paired t tests among students in both the LIA 101 and POS 110 classes. These analyses were also subdivided by gender for each group (LIA 101 or POS 110).

Table 2

List of Intervening Variable Survey Questions

Intervening Variables	Question	Options	Codes	Source
Self-Perceived Qualifications (“Skills”)	If you were to run for office today, which (if any) of the following qualifications would apply to you? Please mark all that apply.	A. I know a lot about politics or public policy issues; B. I have relevant volunteer, internship, or job experience; C. I am a good public speaker; D. I have or could raise enough money; E. I am a good at self-promoting or networking; F. I am a good writer; G. I am willing to try new things; H. I am confident; I. I am popular; J. I am smart; K. I am assertive; L. None of the above options apply to me	Yes: 1, No: 0, for each option; All responses are combined into an index ranging from 0 (indicating no self-perceived political skills/qualifications, where “L” is selected), to 11 (indicating possession of all political skills/qualifications listed).	Adapted from Lawless and Fox 2010: 197 and Fox and Lawless 2013: 37
Self-Perceived Qualifications (“Future”)	Keeping in mind your future education and career plans, how qualified do you eventually feel you would be in order to run for public office?	A. Not At All Qualified; B. Somewhat Qualified; C. Qualified; D. Very qualified	A: 0; B: 1; C: 2; D: 3	Adapted from Lawless and Fox 2010: 196 and Fox and Lawless 2013: 36

Political Participation	Many people do not engage in many political or community activities. In which, if any, of the following activities have you engaged <i>in the past year</i> ? Please mark all that apply.	A. Voted in at least one political election at the local, state, or federal level; B. Emailed or wrote a letter to a newspaper; C. Was an active member of a political interest group, party, or movement; D. Contacted an elected official (by phone, email, letter, etc.) ; E. Volunteered or helped raise money for a political cause, candidate, or campaign ; F. Attended a city council or school board meeting ; G. Served on the board of a non-profit organization ; H. Voted in a student election ; I. Attended a political rally or protest ; J. Posted something about politics using social media; K. Followed a political figure on a social media site ; L. None of the above options apply to me	Yes: 1, No: 0, for each option; All responses are combined into an index ranging from 0 (indicating no self-perceived political participation, where “L” is selected), to 11 (indicating participation in all activities listed).	Adapted from Lawless and Fox 2010: 182 and Fox and Lawless 2013: 38
Political Cynicism	How much do you agree with the following statement: “to succeed in American politics, a politician must give up his/her personal integrity”?	A.) Strongly Disagree; B.) Disagree; C.) Neither Agree nor Disagree; D.) Agree; E.) Strongly Agree	A: 1, B: 2, C: 3, D: 4, E: 5; Note that high values indicate a high amount of political cynicism, while low scores indicate a low amount of political cynicism.	Adapted from Dancy 2012: 416

Political Ambition

Lawless and Fox (2010) suggest that political ambition occurs in two steps: considering a run for office, and actually making a run for office. In order to get at these aspects of running for office, Lawless and Fox (2010) ask the following direct questions in their Citizen Political Ambition Panel Study: “Have you ever held elective public office?” “If no, have you ever run for public office?” and “If you have never run for office, have you ever thought about running for office?” (184). However, Lawless and Fox (2010) ask these questions to career professionals who are in the pipeline careers that most often feed into politics. These questions may not be completely appropriate for college students, who are not as far along in their careers, and for whom running for political office may be a less immediate possibility.

For that reason, I use three other questions that are set in the future tense, which are more appropriate for ascertaining students’ attitudes toward running for office. The first of these questions is “Which best characterizes your attitudes toward running for office in the future?” (Lawless and Fox 2010: 186). This question is called “Run” in *Table 3* below, and in later tables. Its answers range in an ordinal scale from 0 (where the respondent indicates that running for office is something s/he would never do) to 3 (where the respondent indicates that it is something s/he would definitely like to undertake in the future) and 4 (where the respondent currently holds office, and in this sense, has already actualized her/his ambition). Notably, even though these questions are about decisions to be made far in the future, “currently holding office” is added as an option because, although it is unlikely that undergraduate college student respondents

have held elective offices, it is still possible that older students may have had that opportunity.

The second question is a list of specific offices, such as mayor, governor, and president, that a respondent might be interested in running for in the future (Lawless and Fox 2010: 186). This question is called “Office” in *Table 3* below, and in later tables. Its answers range in an interval scale from 0 (where the respondent would “never run for any office,” as indicated by the respondent checking this option), to 11 (where the respondent indicates interest in all listed offices and has successfully run³³ for elective office). While the first question helps to indicate the “strength” of one’s interest in running for office (i.e., how much someone wants to run for office), this second question helps to indicate the “breadth” of one’s interest in running (i.e., how many different offices one would be interested in running for). In this sense—both of these questions measure different aspects of political ambition—the first (“Run”) measures how interested one is in running for office, and the second (“Office”) measures how many offices one’s interest extends to.

The third question gauging political ambition asks respondents, if money was not an issue, what job they would most like to have in the future (Fox and Lawless 2013: 10). Respondents can choose out of a list of 12 diverse occupations, including the option of “elected official or politician.” This question is called “Job” in *Table 3* below, and in later tables. It is coded as a dichotomous variable, such that students choosing “elected official or politician” as the career they are most interested in are assigned a 1, while students choosing any other career are assigned a 0. This question is arguably a weaker gauge of political ambition than the first two, and is the indicator with the lowest face validity.

³³ I.e., run for, and held, elective political office.

This is because for some students who take interest in none of the careers listed, this question may take the form of “a lesser of evils” option, where they may choose “elected official or politician” not because they are duly committed to being a politician, but rather because being a chef, pilot, lawyer, etc. appeals to them even less. Nevertheless, this question offers an important gauge of how seriously someone wants to be an elected official. This is because it helps to determine whether holding office is in fact the career a respondent is most passionate about, or whether it is a secondary interest.

Table 3 below lists the exact wording of the survey questions used to measure political ambition. Because the first two questions are non-dichotomous, differences over time for each of them was assessed using paired t tests among students in both the LIA 101 and POS 110 classes. However, because the third question is dichotomous, differences across it among students in both the LIA 101 and POS 110 classes were assessed using chi-square tests³⁴ and Fisher’s exact probability tests³⁵ on contingency tables. Each of these analyses was also subdivided by gender for each group (LIA 101 or POS 110).

³⁴ In the chi-square tests, pre-test values were treated as the expected values.

³⁵ Fisher’s exact probability tests were run when $n < 5$.

Table 3

List of Political Ambition Survey Questions

Dependent Variable	Question	Options	Codes	Source
Political Ambition (“Run”)	Which best characterizes your attitudes toward running for office in the future?	A. It is something I would absolutely never do; B. I would not rule it out forever, but I currently have no interest; C. It is something I might undertake if the opportunity presented itself; D. It is something I definitely would like to undertake in the future; E. I currently hold office	A: 0; B: 1; C: 2; D: 3, E: 4	Adapted from Lawless and Fox 2010: 186
Political Ambition (“Office”)	What offices, if any, might you ever be interested in running for ? Please mark all that apply.	A. I would never run for any office; B. School Board; C. City, County, or Town Council; D. Mayor; E. State Legislator; F. Statewide Office (e.g., Attorney General); G. Governor; H. Member of the U.S. House of Representatives; I. U.S. Senator; J. U.S. President; K. I have run for elected office; L. I have held elected office	Yes: 1, No: 0, for each option; All responses are combined into an index ranging from 0 (indicating no interest in running for any office, where “A” is selected), to 11 (indicating interest in all offices and having run for and successfully held office)	Adapted from Lawless and Fox 2010: 186

<p>Political Ambition (“Job”)</p>	<p>Considering your skills and interests, if the following jobs paid the same amount of money, which would you most like to have? Please only select one</p>	<p>A. Business owner or executive; B. Teacher; C. Elected Official or Politician; D. Lawyer; E. Doctor ; F. Pilot; G. Chef; H. Engineer or Computer Scientist; I. Professor; J. Scientist (in the Natural or Physical Sciences: Biology, Chemistry, Physics, etc.); K. Athlete; L. Artist or Designer (Web, Fashion, Architecture, etc.)</p>	<p>A: 1, B: 2, C: 3, D: 4, E: 5, F: 6, G: 7, H:8, I:9, J: 10, K: 11, L: 12; Responses are recoded such that students who select C:3 are scored a 1 for being politically ambitious, and all others are scored 0.</p>	<p>Adapted from Fox and Lawless 2013: 10</p>
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CHAPTER 6

RESULTS AND DISCUSSION

When compared to the paired t test results for the control group of liberal arts and sciences (LIA 101) students, the results of the paired t tests for the experimental group of political science (POS 110) students preliminarily confirm *Hypothesis 1*, that *civic education is positively related to political knowledge*. As seen in *Table 4*, the positive mean difference in political knowledge levels for POS 110 students is statistically significant at the 99% level, indicating that these students have “learned” about politics over the course of a semester. Compare these to the results in *Table 5*, in which LIA 101 students do not exhibit a statistically significant change in their mean political knowledge scores, suggesting that students not exposed to political science curricula do not learn about politics. This is significant, because, echoing Hillygus’ (2005) findings, it suggests that the college experience alone may not be enough to make college students politically knowledgeable—there is something unique about political science classes that have this effect.

Interestingly, the statistically significant increase in political knowledge scores among POS 110 students seems to be guided by the women in POS 110 classes, as when separate t tests are conducted for each gender, only women show a statistically significant increase (at the 99% level) in mean political knowledge scores (see *Table 4*).

Table 4

Paired T Test Results for Political Knowledge, Political Participation, Self-Perceived Qualifications, Political Cynicism, and Political Ambition (Run and Office) among POS 110 Students

Paired T Test Results for Experimental Group, POS 110 Students							
	Political Knowledge	Political Participation	Self-Perceived Qualifications		Political Cynicism	Political Ambition	
			Skills	Future		Run	Office
Difference of Means (Pretest, Posttest Means in Parentheses)	0.355*** (4.054, 4.409)	-0.056 (3.100, 3.044)	0.391 (5.935, 6.326)	-0.086 (1.269, 1.183)	0.129 (2.419, 2.548)	-0.167* (1.389, 1.222)	0.167 (2.800, 2.967)
	0.649*** (3.595, 4.243)	-0.361 (2.750, 2.389)	-0.108 (6.216, 6.108)	-0.297** (1.216, 0.919)	0.162 (2.189, 2.351)	-0.361** (1.306, 0.944)	-0.086 (1.800, 1.714)
Women	0.182 (4.345, 4.527)	0.151 (3.396, 3.547)	0.759** (5.759, 6.519)	0.036 (1.309, 1.345)	0.109 (2.545, 2.655)	-0.038 (1.434, 1.396)	0.389 (3.333, 3.722)
Men							
T Value (critical value at 0.05 level, 2-tailed)	-4.602*** (1.986)	0.339 (1.987)	-1.631 (1.986)	1.182 (1.986)	-1.179 (1.986)	1.857* (1.987)	-0.731 (1.987)
Women	-5.237*** (2.028)	1.320 (2.03)	0.344 (2.028)	2.443** (2.028)	-1.063 (2.028)	2.714** (2.03)	0.271 (2.032)
Men	-1.604 (2.005)	-0.740 (2.007)	-2.230** (2.006)	-0.423 (2.005)	-0.704 (2.005)	0.314 (2.007)	-1.237 (2.006)
N (df)	93 (92)	90 (89)	92 (91)	93 (92)	93 (92)	90 (89)	90 (89)
Women	37 (36)	36 (35)	37 (36)	37 (36)	37 (36)	36 (35)	35 (34)
Men	55 (54)	53 (52)	54 (53)	55 (54)	55 (54)	53 (52)	54 (53)

Level of Significance: *p<0.1, **p<0.05, ***p<0.01, two-tailed

Note: Some cases were deleted due to non-response on the variable of interest.

Note: One student did not identify with the gender binary.

This is interesting because women start POS 110 with significantly lower mean political knowledge scores than their male classmates,³⁶ but then women “catch up” by the end of POS 110, leaving no statistically significant knowledge gap between the genders.³⁷ This finding is somewhat surprising, because previous works have generally found that women have lower political knowledge scores than men when it comes to relatively traditional indicators like the ones used in this study (Verba, Burns, and Schlozman 1997; Niemi and Junn 1998; Hooghe, Quintelier, and Reeskens 2006; Dolan 2011), and that women score even worse compared to their male counterparts after exposure to education (Dow 2009). Here, however, there appears to be no statistically significant differences in political knowledge scores between men and women by the end of POS 110 classes, and women in POS 110 actually show overall improvement in their political knowledge scores after exposure to (political science) education, while men do not.

However, the paired t tests, chi-square tests, and Fisher’s exact probability tests do not confirm *Hypothesis 2*, that *political knowledge is positively related to political ambition*. First, this can be seen by the fact that none of the mechanisms by which political knowledge was thought to influence political ambition that wound up being significant—the self-perceived qualification indicators— correspond to a significant

³⁶ At the beginning of the semester, women in POS 110 have a mean political knowledge score of 3.59, while men in POS 110 have a mean knowledge score of 4.35. These differences are statistically significant at the 95% level, two-tailed.

³⁷ Results of a two-sample t-test assuming unequal variances reveal that in the pre-test, men and women in POS 110 have a statistically significant mean difference in knowledge scores of 0.75*** (p=0.00***, t-score: 3.70***, df: 56). However, the results of a two-sample t-test assuming equal variances reveal that in the post-test, the mean difference in knowledge scores of 0.28 (p=0.06, t-score: -1.58, df: 90) between men and women in POS 110 is not statistically significant. Note: **p<0.05, ***p<0.01, two-tailed. Note: for the pre-test, a two-sample t-test assuming unequal variances was used and dfs were adjusted accordingly, while for the post-test, a two-sample t-test assuming equal variances was used, because Levene’s test revealed that the homogeneity of variances assumption had been violated for the pre-test, but not for the post-test (F=6.112**, p=0.015**, and F=2.490, p=0.118, respectively).

positive increase in political ambition. More specifically, men enrolled in POS 110 courses show a statistically significant increase in the amount of political skills (self-perceived qualifications) that they believe they have by the end of the semester (at the 95% level, two tailed), but show no corresponding statistically significant increase on any of the measures of political ambition (see *Table 4* and *Table 8*). Additionally, women actually show a statistically significant *decrease* (at the 95% level, two-tailed) in their evaluation of future self-perceived qualifications for holding office (see *Table 4*). In fact, this corresponds with a statistically significant decrease in their desire to make a future run for office, a relationship which will be discussed further below.

As expected, students in the LIA 101 control group exhibited statistically significant differences in none of the mechanisms of interest—neither political participation, self-perceived qualifications, nor political cynicism (see *Table 5*). This further suggests that the statistically significant mechanism of self-perceived qualifications operates specifically in tandem with exposure to civic education among students. For the males in POS 110, who experience an increase in self-perceived qualifications with exposure to political science coursework, this confirms what Lawless and Fox (2010) suggested when they note that exposure to political knowledge, such as knowledge “about public policy issues” (118), contributes to one's self perceived qualifications.³⁸ In contrast, female POS 110 students, who are the only ones who show a significant increase in knowledge scores by the end of the semester, are also the only ones to show a significant decrease in self-perceived political qualifications, suggesting

³⁸ However, this does not appear to have any statistically significant ambition payoffs among men in the POS 110 sample.

that civic education and political knowledge operate differently among women—making them feel that in the future, they will be less qualified to make a run for office.³⁹

Surprisingly, there were no statistically significant differences in POS 110 students' level of political participation. While this is contrary to some findings (e.g., Hooghe and Dassonneville 2011, Ondercin and Jones-White 2011, Galston 2001: 224), it lends support to the conclusions of Torney-Purta and Amadeo (2003), who suggest that volunteering (a form of political activity) is stimulated independently of political knowledge, and vice-versa. Additionally, POS 110 students exhibit no statistically significant differences in their level of political cynicism. This suggests that cynicism may not have a direct impact on political ambition, whereas self-perceived qualifications may, at least among women in POS 110.⁴⁰

³⁹ Which also corresponds to their decreased desire to run for office in the future. Also see pages 38-40.

⁴⁰ Who, again, show a statistically significant decrease in the “Future” measure of self-perceived qualifications and on the “Run” measure of political ambition.

Table 5

Paired T Test Results for Political Knowledge, Political Participation, Self-Perceived Qualifications, Political Cynicism, and Political Ambition (Run and Office) among LIA 101 Students

Paired T Test Results for Control Group, LIA 101 Students							
	Political Knowledge	Political Participation	Self-Perceived Qualifications		Political Cynicism	Political Ambition	
			Skills	Future		Run	Office
Difference of Means (Pretest, Posttest Means in Parentheses)							
Women	0.148 (3.321, 3.469)	-0.118 (2.224, 2.105)	0.143 (4.961, 5.104)	-0.123 (0.877, 0.753)	0.063 (2.513, 2.575)	-0.130 (1.013, 0.883)	-0.155 (1.507, 1.352)
Men	0.127 (3.273, 3.400)	-0.020 (2.000, 1.980)	0.327 (4.712, 5.038)	-0.109 (0.782, 0.673)	-0.037 (2.444, 2.407)	-0.118 (0.824, 0.706)	-0.271** (1.146, 0.875)
T Value (critical value at 0.05 level, 2-tailed)							
Women	-1.299 (1.990)	0.390 (1.992)	-0.615 (1.992)	1.639 (1.990)	-0.528 (1.990)	1.597 (1.992)	0.932 (1.994)
Men	-1.044 (2.005)	0.059 (2.009)	-1.088 (2.008)	1.097 (2.005)	0.240 (2.006)	1.353 (2.009)	2.160** (2.012)
N (df)							
Women	81 (80)	76 (75)	77 (76)	81 (80)	80 (79)	77 (76)	71 (70)
Men	55 (54)	51 (50)	52 (51)	55 (54)	54 (53)	51 (50)	48 (47)
Men	26 (25)	25 (24)	25 (24)	26 (25)	26 (25)	26 (25)	23 (22)

Level of Significance: *p<0.1, **p<0.05, ***p<0.01, two-tailed

Note: Some cases were deleted due to non-response on the variable of interest.

Hypothesis 2 can also be disconfirmed by looking directly at the relationship between political knowledge and the three measures of political ambition. I begin by discussing the relationship between political knowledge and the political ambition “Run” measure—the indicator of how strongly one desires to run for office in the future, which

is one of the ambition questions with the highest face validity. Indeed, in *Table 4*, POS 110 students actually show a statistically significant *decrease* (at the 90% level) in their level of ambition on the “Run” question, suggesting that these students have a significantly lower desire to run for political office by the end of POS 110 than they did at the beginning. Admittedly, however, the 90% level is a comparatively low threshold of statistical significance (the standard is 95%)—yet interestingly, this 90% significance among the total population of POS 110 students again seems to be guided by the female students—a finding that is largely consistent with those of Fox and Lawless (2013).⁴¹ In other words, only the women in the POS 110 sample show a decline in mean “Run” scores that is significant at the 95% level. Put another way, women enrolled in POS 110 classes actually show a statistically significant *decrease* in the estimation of their likelihood of running for office, while men show no statistically significant decrease. This is particularly interesting when one considers the fact that women were also the ones who guided the significant increase in political knowledge levels, and the only group who showed a statistically significant decrease in their future self-perceived qualifications for office. This suggests that even though women become more knowledgeable after a semester’s worth of POS 110 coursework, at least on the measure of how likely they are to consider a run for office, they are also the ones who drive the *decrease* in political ambition—a decrease that corresponds to their depressed self-perceived qualifications, a finding largely consistent with those of Lawless and Fox (2010), who note the importance

⁴¹ Who find that women are significantly less politically ambitious than their male counterparts, especially by the time they reach college age.

of self-perceived qualifications as a predictor of future runs, especially among women.⁴² Men in POS 110 classes, on the other hand, show no statistically significant differences in either political knowledge or on the political ambition “Run” question. Unsurprisingly, neither do LIA 101 students (as shown in *Table 5*). In this regard, it appears that instead of increasing the desire of (all) students to run for office, exposure to political science coursework actually decreases (female) students’ propensity to report a willingness to run for a future elective office.

Additionally, the POS 110 students (see *Table 4*) show no significant differences in the political ambition “Office” measure –another political ambition question with high face validity, which indicates how many political offices a person might want to run for. This suggests that the breadth of one’s political ambition does not expand to encompass multiple offices in the face of exposure to political science coursework or increased political knowledge levels. Interestingly, however, (only) the women in the control group (LIA 101 courses) show a statistically significant decrease (at the 95% level) on the “Office” political ambition measure. This suggests that while POS 110 classes spur no additional increase in the number of political offices that students want to hold, they at least do not seem to spur a decrease, something that does happen among women in LIA 101 classes by the end of the semester. At this point, however, the reasons why this decrease might occur can only be left up to conjecture.

However, the chi-square test and Fisher’s exact probability test results in *Tables 6-8* and *Tables 9-11* suggest that there are no statistically significant differences in either

⁴² Again, Lawless and Fox (2010) note: “the gender gap in self-perceived qualifications [for holding office] serves as the most potent explanation . . . for the gender gap in political ambition” (134).

POS 110 students or LIA 101 students when it comes to the “Job” measure of political ambition—the measure with the least face validity, which indicates what job a person would most like to have out of a list of 12 options. Recall that this item has less face validity because some respondents may select “elected official/politician” because they find it to be a “lesser evil” among a list of undesirable options rather than because it is their primary career passion. Nevertheless, this may also indicate that although there is a statistically significant decrease (at the 90% level) in POS 110 students’ evaluation of their desire to run for office in the future,⁴³ there is no corresponding statistically significant decrease in the number of POS 110 students who are most passionate about having a career in politics. This suggests that although exposure to political education depresses the desire for students to run for office in the future, it does not reduce (but neither does it increase) the number of students already passionate about a career in politics—suggesting that a political science education may not be a good way to help get more students (particularly female students)⁴⁴ committed to politics.

⁴³ The decrease in desire to run for office in the future is particularly notable among female students, as while there is a decrease in the political ambition “Run” measure among all POS 110 students by the end of the semester, this relationship is only significant at the 90% level; however, when the genders are subdivided, this relationship is significant for women at the 95% level, and it is insignificant for men.

⁴⁴ As female students guide the statistically significant decrease in the political ambition “Run” measure. See footnote 43.

Table 6

Contingency Table and Chi-square Test Results for Political Ambition (Job) among POS

110 Students

Contingency Table for Political Ambition "Job" among POS 110 Students

	Number of Pretest Respondents (Expected Values)	Number of Post- Test Respondents
Politician/Elected Official	11	18
Other Job	81	74
Total N	92	92
Chi-square (p)	2.01 (0.156)	

Level of Significance: *p<0.10, **p<0.05, ***p<0.01

Note: one respondent does not identify with the gender binary

Note: one case was deleted due to non-response

Table 7

Contingency Table and Two-Tailed Fisher's Exact Probability Test Results for Political

Ambition (Job) among Female POS 110 Students

Contingency Table for Political Ambition "Job" among Female POS 110 Students

	Number of Female Pretest Respondents (Expected Values)	Number of Female Post-Test Respondents
Politician/Elected Official	3	6
Other Job	33	30
Total N	36	36
p	0.478	

Level of Significance: *p<0.10, **p<0.05, ***p<0.01, two-tailed

Note: one case was deleted due to non-response

Table 8

Contingency Table and Chi-square Test Results for Political Ambition (Job) among Male POS 110 Students

Contingency Table for Political Ambition "Job" among Male POS 110 Students

	Number of Male Pretest Respondents (Expected Values)	Number of Male Post-Test Respondents
Politician/Elected Official	8	11
Other Job	47	44
Total N	55	55
Chi-square (p)	0.57 (0.45)	

Level of Significance: *p<0.10, **p<0.05, ***p<0.01

Table 9

Contingency Table and Two-Tailed Fisher's Exact Probability Test Results for Political Ambition (Job) among LIA 101 Students

Contingency Table for Political Ambition "Job" among LIA 101 Students

	Number of Pretest Respondents (Expected Values)	Number of Post-Test Respondents
Politician/Elected Official	4	4
Other Job	77	77
Total N	81	81
p	1	

Level of Significance: *p<0.10, **p<0.05, ***p<0.01, two-tailed

Table 10

Contingency Table and Two-Tailed Fisher's Exact Probability Test Results for Political Ambition (Job) among Female LIA 101 Students

Contingency Table for Political Ambition "Job" among Female LIA 101 Students

	Number of Female Pretest Respondents (Expected Values)	Number of Female Post-Test Respondents
Politician/Elected Official	2	2
Other Job	53	53
Total N	55	55
p	1	

Level of Significance: *p<0.10, **p<0.05, ***p<0.01, two-tailed

Table 11

Contingency Table and Two-Tailed Fisher's Exact Probability Test Results for Political Ambition (Job) among Male LIA 101 Students

Contingency Table for Political Ambition "Job" among Male LIA 101 Students

	Number of Male Pretest Respondents (Expected Values)	Number of Male Post-Test Respondents
Politician/Elected Official	2	2
Other Job	24	24
Total N	26	26
p	1	

Level of Significance: *p<0.10, **p<0.05, ***p<0.01, two-tailed

These results also have bearing on *Hypothesis 3*, that *civic education is positively related to political ambition*. For while the “Job” political ambition measure and the “Office” political ambition measure had null findings in the POS 110 classes,⁴⁵ perhaps what is most telling is that the “Run” measure⁴⁶—one of the measures with the strongest face validity—shows a statistically significant decrease (among women) by the end of the POS 110 semester. Indeed, this is a result that corresponds with a decrease in a mechanism (self-perceived qualifications [among women]) which Lawless and Fox (2010) have shown to be an important predictor of political ambition, making it a reasonable fit with the theory. Thus, the findings seems to suggest that exposure to political science coursework may actually decrease the self-perceived qualifications and political ambition of at least one politically underrepresented group—women—despite the fact that the exposure to such coursework significantly increases their level of political knowledge. This, unfortunately, suggests that exposure to political science coursework may not be a good way to encourage more women to run for office.

⁴⁵ Although compared to the decrease in this measure among females in the LIA 101 courses, perhaps the “Office” measure was not such a null result after all.

⁴⁶ In which students indicate how likely they are to run for office in the future.

CHAPTER 7

CONCLUSIONS, LIMITATIONS, AND FUTURE RESEARCH

In this work, I set out to better define the relationships between three key variables: civic education (i.e., exposure to political science coursework), political knowledge, and political ambition, as this specification reflected a gap in the civic education (Galtson 2001, Niemi and Hepburn 1995, Niemi and Junn 1998, Carpini and Keeter 1996, Ondercin and Jones-White 2011, Popkin and Dimcock 1999, Nie et al. 1996) and political ambition literatures (Schlesinger, 1966; Black 1972, Rohde 1979, Palmer and Simon 2003; Fulton, Maestas, Maisel and Stone 2006; Costantini 1990, Fox and Lawless 2004, Fox and Lawless 2005, Lawless and Fox 2010, Fox and Lawless 2013). The data source was an original data set (n=174) which relied upon an original survey employed in a classical field experiment among students in introductory college level political science courses (POS 110) and introductory college level liberal arts courses (LIA 101). Using a combination of t tests, chi-square tests, and Fisher's exact probability tests, I found evidence for the first of three hypotheses: *Hypothesis 1*, that *civic education is positively related to political knowledge*; *Hypothesis 2*, that *political knowledge is positively related to political ambition*; and *Hypothesis 3*, that *civic education is positively related to political ambition*. Notably, when separate gender analyses were conducted, women guided the positive relationship between civic education and political knowledge (*Hypothesis 1*); women had a statistically significant increase in knowledge scores while men did not. Thus, while there was a gender gap in political knowledge at the beginning of the semester, by the end of the semester, female

POS 110 students caught up to their male classmates, and the gender knowledge gap disappeared. This finding that is somewhat surprising, because women have typically been found to be less politically knowledgeable than their male counterparts on traditional indicators of political knowledge (Verba, Burns, and Schlozman 1997; Niemi and Junn 1998; Hooghe, Quintelier, and Reeskens 2006; Dolan 2011). These findings are also directly contrary to what Dow (2009) finds—that women tend to be far outpaced by their male counterparts in political knowledge when education is involved.

However, regarding *Hypothesis 2*, the only statistically significant differences in the expected mechanisms through which political knowledge might impact political ambition either had no corresponding impact on political ambition measures (in the case of the “Skills” self-perceived qualifications measure and any of the ambition measures among men in the POS 110 classes), or were negative (in the case of the “Future” self-perceived qualifications measure and the “Run” political ambition measure among women in the POS 110 classes).

With respect to *Hypothesis 3*, findings indicate that students exposed to one semester of POS 110 showed no statistically significant changes in the number of political positions they would be interested in running for, nor in their desire to pick “elected official/politician” as their career of choice, but they did demonstrate a statistically significant *decrease*⁴⁷ in their likelihood of running for office in the future by the end of the semester. This suggests that the breadth of one’s political ambition (i.e., the number of positions one is interested in running for) is not impacted by exposure to political science education, and that political science education neither decreases the

⁴⁷ At the 90% level overall, and at the 95% level among women specifically.

primacy of politics as a career choice among those already interested in it, nor does it inspire additional students to be pick politics as their primary career choice. However, it does suggest that exposure to political science education and political knowledge depresses students' desire to run for office in the future.⁴⁸

Thus, it seems reasonable to assume that the relationship between exposure to political coursework and political ambition is a negative one—as, by the end of one semester of POS 110 coursework, there is a statistically significant decrease (at the 90% level) in students' estimation of their likelihood of running for office in the future, but no similar decrease among students exposed to one semester of LIA 101 coursework. Notably, when the analyses were conducted separately by gender, this decreased estimation occurred only among women in POS 110 classes—a decrease (significant at the 95% level) that was accompanied by a similar slump in self-perceived qualification scores, a finding consistent with those of Lawless and Fox (2010), who suggest that self-perceived qualifications are particularly important to the political ambition of women, and those of Fox and Lawless (2013), who find that college women have lower levels of political ambition than do college men.

Collectively, these findings have some important normative implications. If one goal of political science education is to increase the political ambition of politically underrepresented groups, then it appears to fail that goal as far as the women of this sample are concerned.

⁴⁸ Primarily among women. As, when paired t tests were run for each gender separately, only the female subgroup showed statistically significant (negative) differences on “Run” indicator.

Notably, however, because this was the first step in this area of research, these findings are relatively exploratory, and must be stated with some caution, as there are some limitations to the present study. First, corresponding to the first hypothesis, there is question as to whether the measurements of political knowledge validly correspond to the types of content taught in political science classes. For example, the factual five item knowledge battery adapted from Carpini and Keeter (1993) may not line up well to more abstract notions—such as a sense of the political arena—that college students might glean, and be intended to glean, from POS 110. Moreover, the fact that men do not “learn” over the course of POS 110 classes the way women do (see *Table 4*) may be due to ceiling effects, such that men already score so high on the political knowledge battery entering POS 110 classes (with a pre-test mean score of 4.345 out of a maximum of 5) that there is simply not much room for statistically significant growth in these scores. In addition, there is a question as to whether nine weeks is enough time for students to garner full socialization effects from a political science classroom—future research should aim to see if varying the time intervals between pre-tests and post-tests makes a difference in terms of ambition impacts. Moreover, the present sample is limited—and thus its generalizability is limited. As suggested in *Appendix B*, respondents are primarily white college freshman from relatively high income brackets. Thus, the findings may not be generalizable past this demographic group. In addition, the experimental group sample, specifically, is limited. No matter how many students are in them, two large political science classes are still just two large political science classes, and the larger of the two classes (with over 200 students) may be skewing the results one way or the other. In

addition, instructor gender effects may be present. It may be important that the professor for the larger POS 110 class was female, while the professor for the smaller POS 110 class was male. Future research should aim to separate out these effects, perhaps by using professor gender, or class, dummy variables. Finally, Chi square tests, Fisher's exact probability tests, and t tests are relatively rudimentary measures of significance.

Nevertheless, despite its limitations, the present work does open the field to some important research questions that help discover what kinds of activities—and alternative agents of socialization—can boost the political ambition of underrepresented groups like women. One possible suggestion offered by the present work, and in the line of others (Torney-Purta and Amadeo 2003, Fox and Lawless 2013, Moore 2005) is that volunteerism and extra-curricular involvement may have an independent positive impact on political ambition,⁴⁹ whereas civic education and increased political knowledge (see the results section) do not. Such a suggestion could be more closely tested in the future by relying upon survey questions (like the “High School Extra Curricular Involvement” and “College Extra Curricular Involvement” questions contained in *Appendix A*) that more closely examine exposure to extra-curricular activities.

These findings also open the floor to research that works to better specify the impact of political science courses on political cynicism, which in this work was (surprisingly) found to be null⁵⁰—a finding which may be better explained by future

⁴⁹ Notably, in the present findings, there were no statistically significant increases in political participation, which included a measure of community volunteering (see *Table 2*), in either the experimental or the control group. However, the participation measure may not be a specific enough measure of extra-curricular activities and volunteerism, and the increase in volunteerism may be spurred on independently of exposure to the college coursework present in the experimental and control groups.

⁵⁰ Despite a decline in the political ambition “Run” measure, namely among women.

work using multiple cynicism measures and open-ended survey questions. Additionally, it is unclear why female LIA 101 students showed a statistically significant decrease in the “Office” measure of political ambition while there was a null finding among POS 110 students. Further open-ended survey research might also help answer this question, as might additional research on the relative importance of the three different political ambition indicators.

It may also be fruitful to examine more control groups than just LIA 101 classes, which are relatively generalized liberal arts and sciences courses. For instance, it might be interesting to compare the impact of different types of political science courses (e.g., political theory courses, comparative politics courses, American politics courses, and international relations courses) on political ambition to help isolate what kinds of political experiences decrease ambition (and, hopefully, what kinds, if any, increase it). Political science classes could also be compared to more subject-specific courses in related fields—such as sociology, anthropology, psychology, public policy, and history. Perhaps these would shed light on whether political science is distinctive in its negative impact on political ambition, or whether other courses counteract or compound the negative impact that POS 110 exposure seems to have on political ambition.

Moreover, considering that the civics and ambition literatures imply a host of control variables to account for, including one’s early familial political socialization, level of political interest, race, income, level of competitiveness, political involvement, extra-curricular involvement, and media exposure (Moore 2005, Lawless and Fox 2010, Fox and Lawless 2013, Riedel 2002; Hart, Donnelly, Youniss, and Atkins 2007; Atkin,

Galloway, and Nayman 1976), future work on the present data set ought to take these variables into account (using questions built into the original survey, see *Appendix A* for a full list) while performing more advanced statistical analyses such as OLS regressions. In addition, future works can more closely gauge the exposure to political content—the original survey (see *Appendix A*) also asks POS 110 students questions about their major, how many political science classes they have taken prior to POS 110, how many POS 110 classes they attended, how many of the POS 110 readings they did, and how many times they collaborated in group projects for POS 110. Putting these into a regression analysis can give a more accurate measure of how much political science content students are actually exposed to, thus providing a more accurate gauge of political science courses' impact on political ambition.

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APPENDIX A
FULL LIST OF SURVEY QUESTIONS

Control Variable	Question	Options	Codes	Source
Sex	What is your sex?	A. Male; B. Female; C. Other	A: 1, B:2, C:3	Adapted from Lawless and Fox 2010: 199
Socio-economic Status	In approximately what category was your personal income (i.e., your own income) and your household income (i.e., the total income of direct family you usually live with [e.g., the combined income of you and your spouse if you have one, or of your parents]) last year? Please mark one for each column.	A. Under \$25,000; B. \$25,000-\$50,000; C. \$50,001-\$75,000; D. \$75001-\$100,000; E. \$100,001-\$200,000; F. Over \$200,000	A: 1, B: 2, C: 3, D: 4, E: 5, F: 6	Adapted from Lawless and Fox 2010: 199
Race	What do you consider your primary race?	A. White; B. Black; C. Asian; D. Hispanic/Latino; E. Native American; F. Pacific Islander; G. I consider myself to be an equal mix of two or more races; H. Other	A: 1, B: 2, C: 3, D: 4, E: 5, F: 6, G: 7, H: 8	Adapted from Lawless and Fox 2010: 187
Competitiveness	In general, how competitive would you say that you are? Please select only one.	A. I am not at all competitive; B. I am somewhat competitive; C. I am competitive; D. I am very competitive	A: 1, B: 2, C: 3, D: 4	Adapted from Fox and Lawless 2013: 36

<p>High School Extra Curricular Involvement</p>	<p>Some people choose to get involved during high school or college in different ways. During high school or college, have you done any of the following? Please mark all that apply for each column.</p>	<p>A. Done any internships or held any jobs involving politics, public policy, or community/government affairs; B. Done any volunteering involving politics, public policy, or community/government affairs; C. Conducted research involving politics, public policy, or community/government affairs; D. Been active in any political clubs or pre-professional groups (e.g., College Republicans, Young Democrats, Pi Sigma Alpha); E. Been involved in a debate team; F. Been involved in Model U.N.; G. Served in a leadership position in a club; H. Served in an ROTC or military unit (active, reserves, or retired); I. Been active in a political movement/party or formally advocated for a cause or issue you've cared about (e.g., protesting, signing petitions, etc.); K. None of the above options apply to me</p>	<p>Yes: 1, No: 0, for each option</p>	<p>Designed for survey</p>
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College Extra Curricular Involvement	Some people choose to get involved during high school or college in different ways. During high school or college, have you done any of the following? Please mark all that apply for each column.	A. Done any internships or held any jobs involving politics, public policy, or community/government affairs; B. Done any volunteering involving politics, public policy, or community/government affairs; C. Conducted research involving politics, public policy, or community/government affairs; D. Been active in any political clubs or pre-professional groups (e.g., College Republicans, Young Democrats, Pi Sigma Alpha); E. Been involved in a debate team; F. Been involved in Model U.N.; G. Served in a leadership position in a club; H. Served in an ROTC or military unit (active, reserves, or retired); I. Been active in a political movement/party or formally advocated for a cause or issue you've cared about (e.g., protesting, signing petitions, etc.); K. None of the above options apply to me	Yes: 1, No: 0, for each option	Designed for survey
Politicized Upbringing	Throughout your whole life, how frequently did your parents (or guardians) discuss politics with you?	A. Never; B. Seldom; C. Occasionally; D. Frequently	A: 0, B: 1, C: 2, D: 3	Adapted from Lawless and Fox 2010: 188
Politicized Upbringing	Throughout your whole life, how frequently did your parents (or guardians) suggest that, someday, you should run for office?	A. Never; B. Seldom; C. Occasionally; D. Frequently	A: 0, B: 1, C: 2, D: 3	Adapted from Lawless and Fox 2010: 189

Politicized Upbringing	Did either of your parents ever run for elective office?	A. No; B. Yes, My Father; C. Yes, My Mother; D. Yes, Both Parents	A: 0, B: 1, C: 2, D: 3	Adapted from Lawless and Fox 2010: 189
Political Interest	How often do you discuss politics or current events with friends?	A. Never; B. Seldom; C. Occasionally; D. Frequently	A: 0, B: 1, C: 2, D: 3	Adapted from Fox and Lawless 2013: 36
Media Exposure	Please mark the option that best applies. Thinking about your news habits, how often to you...? A. Read a print or online news source, B. Watch local television news, C. Listen to political talk radio or political pundits, D. Watch C-SPAN, E. Watch national or international news (e.g., Fox, CNN, MSNBC, or BBC), D. Read political websites (e.g. Politico), or political sections on news websites	Rarely/Never; A Few Times a Month; A Few Times a Week; Every Day	Rarely/Never: 0, A Few Times a Month: 1, A Few Times a Week: 2, Every Day: 3, for each option	Adapted from Lawless and Fox 2010: 193
Age	What is your current age?	A. 18; B. 19; C. 20; D. 21; E. 22; F. 23; G. 24; H. 25; I. 26 or older	A: 18, B: 19, C: 20, D: 21, E: 22, F: 23, G: 24, H: 25, I: 26	Designed for survey
Independent Variable	Question	Options	Codes	Source

Civic Education	Approximately how many political science (POS) courses are you enrolled in this Fall at Arizona State University (including your session A, session B, and session C classes)? and Approximately how many political science (POS) courses have you taken at Arizona State University prior to this semester (i.e., not including courses you are taking this Fall, either during session A, B, or C)?	A. 0; B. 1; C. 2; D. 3; E. 4 or more	A: 0; B: 1; C: 2; D: 3; E: 4 (for both)	Designed for Survey
Civic Education	If you have taken any additional college-level political science coursework outside of ASU (including community college courses, but not including any college credit that you may have earned while still enrolled in high school [e.g., from dual enrollment or A.P. coursework]), please indicate how many courses you have taken:	A. 0; B. 1; C. 2; D. 3; E. 4 or more	A: 0; B: 1; C: 2; D: 3; E: 4	Designed for Survey

Civic Education (if in intro POS course)	If you are currently enrolled in POS 110 , roughly what percentage of your POS 110 lectures have you attended (if your class is in person) or watched (if your class is online) at this point in the semester?	A. About 0% or none of the lectures; B. About 25% of the lectures; C. About 50% of the lectures; D. About 75% of the lectures; E. About 100% or nearly all of the lectures	A: 0; B: 1; C: 2; D: 3; E: 4	Designed for Survey
Civic Education (if in intro POS course)	If you are currently enrolled in POS 110 , roughly what percentage of your assigned readings from your POS 110 course textbook have you completed at this point in the semester?	A. About 0% or none of the readings; B. About 25% of the readings; C. About 50% of the readings; D. About 75% of the readings; E. About 100% or nearly all of the readings	A: 0; B: 1; C: 2; D: 3; E: 4	Designed for Survey
Civic Education (if in intro POS course)	Relating to POS 110 course content, roughly how many times have you collaborated with peers to complete a group project or to study for an exam at this point in the semester?	A. 0; B. 1; C. 2; D. 3; E. 4 or more	A: 0; B: 1; C: 2; D: 3; E: 4	Designed for Survey; Inspired by Hooghe and Dassonneville 2011
Political Knowledge	Which party currently has control of the House of Representatives?	A. The Democratic Party; B. The Green Party; C. The Libertarian Party; D. The Republican Party	A: 1, B: 2, C: 3, D: 4; <i>Correct Answer:</i> D: 4 scored a 1, all other options scored a 0	Adapted from Carpini and Keeter 1993: 1198
Political Knowledge	Which party is more conservative?	A. The Democratic Party; B. The Republican Party; C. Both parties are equally conservative	A: 1, B: 2, C: 3; <i>Correct Answer:</i> B: 2 scored a 1, all other options scored a 0	Adapted from Carpini and Keeter 1993: 1198
Political Knowledge	How much of a majority is required for the U.S. Senate and House to override a Presidential veto?	A. 1/2; B. 2/3; C. 3/4; D. 5/8	A: 1, B: 2, C: 3, D: 4; <i>Correct Answer:</i> B: 2 scored a 1, all other options scored a 0	Adapted from Carpini and Keeter 1993: 1198

Political Knowledge	Whose responsibility is it to conduct judicial review?	A. The House of Representatives; B. The President; C. The Senate; D. The Courts	A: 1, B: 2, C: 3, D: 4; <i>Correct Answer:</i> D: 4 scored a 1, all other options scored a 0	Adapted from Carpini and Keeter 1993: 1198
Political Knowledge	Who is the current Vice President of the United States?	A. Barack Obama; B. Dick Cheney; C. Joe Biden; D. John Kerry	A: 1, B: 2, C: 3, D: 4; <i>Correct Answer:</i> C: 3 scored a 1, all other options scored a 0	Adapted from Carpini and Keeter 1993: 1198
Intervening Variable	Question	Options	Codes	Source
Self-Perceived Qualifications "Skills"	If you were to run for office today, which (if any) of the following qualifications would apply to you? Please mark all that apply.	A. I know a lot about politics or public policy issues; B. I have relevant volunteer, internship, or job experience; C. I am a good public speaker; D. I have or could raise enough money; E. I am a good at self-promoting or networking; F. I am a good writer; G. I am willing to try new things; H. I am confident; I. I am popular; J. I am smart; K. I am assertive; L. None of the above options apply to me	Yes: 1, No: 0, for each option; All responses are combined into an index ranging from 0 (indicating no self-perceived political skills/qualifications, where "L" is selected), to 11 (indicating possession of all political skills/qualifications listed).	Adapted from Lawless and Fox 2010: 197 and Fox and Lawless 2013: 37
Self-Perceived Qualifications "Future"	Keeping in mind your future education and career plans, how qualified do you eventually feel you would be in order to run for public office?	A. Not At All Qualified; B. Somewhat Qualified; C. Qualified; D. Very qualified	A: 0; B: 1; C: 2; D: 3	Adapted from Lawless and Fox 2010: 196 and Fox and Lawless 2013: 36

Political Participation	Many people do not engage in many political or community activities. In which, if any, of the following activities have you engaged <i>in the past year</i> ? Please mark all that apply.	A. Voted in at least one political election at the local, state, or federal level; B. Emailed or wrote a letter to a newspaper; C. Was an active member of a political interest group, party, or movement; D. Contacted an elected official (by phone, email, letter, etc.) ; E. Volunteered or helped raise money for a political cause, candidate, or campaign ; F. Attended a city council or school board meeting ; G. Served on the board of a non-profit organization ; H. Voted in a student election ; I. Attended a political rally or protest ; J. Posted something about politics using social media; K. Followed a political figure on a social media site ; L. None of the above options apply to me	Yes: 1, No: 0, for each option; All responses are combined into an index ranging from 0 (indicating no self-perceived political participation, where "L" is selected), to 11 (indicating participation in all activities listed).	Adapted from Lawless and Fox 2010: 182 and Fox and Lawless 2013: 38
Political Cynicism	How much do you agree with the following statement: "to succeed in American politics, a politician must give up his/her personal integrity"?	A.) Strongly Disagree; B.) Disagree; C.) Neither Agree nor Disagree; D.) Agree; E.) Strongly Agree	A: 1, B: 2, C: 3, D: 4, E: 5; Note that high values indicate a high amount of political cynicism, while low scores indicate a low amount of political cynicism.	Adapted from Dancy 2012: 416
Dependent Variable	Question	Options	Codes	Source

Political Ambition "Run"	Which best characterizes your attitudes toward running for office in the future?	A. It is something I would absolutely never do; B. I would not rule it out forever, but I currently have no interest; C. It is something I might undertake if the opportunity presented itself; D. It is something I definitely would like to undertake in the future; E. I currently hold office	A: 0; B: 1; C: 2; D: 3, E: 4	Adapted from Lawless and Fox 2010: 186
Political Ambition "Office"	What offices, if any, might you ever be interested in running for? Please mark all that apply.	A. I would never run for any office; B. School Board; C. City, County, or Town Council; D. Mayor; E. State Legislator; F. Statewide Office (e.g., Attorney General); G. Governor; H. Member of the U.S. House of Representatives; I. U.S. Senator; J. U.S. President; K. I have run for elected office; L. I have held elected office	Yes: 1, No: 0, for each option; All responses are combined into an index ranging from 0 (indicating no interest in running for any office, where "A" is selected), to 11 (indicating interest in all offices and having run for and successfully held office)	Adapted from Lawless and Fox 2010: 186
Political Ambition "Job"	Considering your skills and interests, if the following jobs paid the same amount of money , which would you most like to have? Please only select one	A. Business owner or executive; B. Teacher; C. Elected Official or Politician; D. Lawyer; E. Doctor ; F. Pilot; G. Chef; H. Engineer or Computer Scientist; I. Professor; J. Scientist (in the Natural or Physical Sciences: Biology, Chemistry, Physics, etc.); K. Athlete; L. Artist or Designer (Web, Fashion, Architecture, etc.)	A: 1, B: 2, C: 3, D: 4, E: 5, F: 6, G: 7, H:8, I:9, J: 10, K: 11, L: 12; Responses are recoded such that students who select C:3 are scored a 1 for being politically ambitious, and all others are scored 0.	Adapted from Fox and Lawless 2013: 10
Additional Background	Question	Options	Codes	Source

Major	Which area of study most closely corresponds to your current (first) major? Please select only one	A. Anthropology; B. Architecture, Construction, or Design; C. Biological Sciences or Health and Wellness Sciences; D. Business, Management, and Economics; E. Communication and Media; F. Education and Teaching; G. Engineering and Technology or Computing; H. Environmental Issues and Physical Sciences; I. Exploratory/Undeclared/I haven't decided yet; J. Fine Arts and Performing Arts; K. Humanities and Languages ; L. Justice Studies ; M. Mathematics and Statistics; N. Political Science; O. Psychology; P. Race, Gender, or Ethnicity Studies ; Q. Sociology	A: 1, B: 2, C: 3, D: 4, E: 5, F: 6, G: 7, H:8, I:9, J: 10, K: 11, L: 12, M: 13, N: 14, O: 15, P: 16, Q:17	Designed for survey
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<p>Changing Majors</p>	<p>If you plan to change majors, which area of study most closely corresponds to the major you plan to change to? Please select only one. (Please skip to question #5 if you do not plan to switch majors).</p>	<p>A. Anthropology; B. Architecture, Construction, or Design; C. Biological Sciences or Health and Wellness Sciences; D. Business, Management, and Economics; E. Communication and Media; F. Education and Teaching; G. Engineering and Technology or Computing; H. Environmental Issues and Physical Sciences; I. Exploratory/Undeclared/I haven't decided yet; J. Fine Arts and Performing Arts; K. Humanities and Languages ; L. Justice Studies ; M. Mathematics and Statistics; N. Political Science; O. Psychology; P. Race, Gender, or Ethnicity Studies ; Q. Sociology</p>	<p>A: 1, B: 2, C: 3, D: 4, E: 5, F: 6, G: 7, H:8, I:9, J: 10, K: 11, L: 12, M: 13, N: 14, O: 15, P: 16, Q:17</p>	<p>Designed for survey</p>
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Second Major	If you have a second major, which area of study most closely corresponds to your second major? Please select only one. (Please skip to question #6 if you do not have a second major).	A. Anthropology; B. Architecture, Construction, or Design; C. Biological Sciences or Health and Wellness Sciences; D. Business, Management, and Economics; E. Communication and Media; F. Education and Teaching; G. Engineering and Technology or Computing; H. Environmental Issues and Physical Sciences; I. Exploratory/Undeclared/I haven't decided yet; J. Fine Arts and Performing Arts; K. Humanities and Languages ; L. Justice Studies ; M. Mathematics and Statistics; N. Political Science; O. Psychology; P. Race, Gender, or Ethnicity Studies ; Q. Sociology	A: 1, B: 2, C: 3, D: 4, E: 5, F: 6, G: 7, H:8, I:9, J: 10, K: 11, L: 12, M: 13, N: 14, O: 15, P: 16, Q:17	Designed for survey
Class Level	Based on your college credits, what is your current class designation at Arizona State University?	A. Freshman, B. Sophomore, C. Junior, D. Senior	A: 1, B: 2, C: 3, D: 4	Designed for survey

APPENDIX B

DEMOGRAPHIC DATA ON EXPERIMENTAL AND CONTROL GROUPS

Demographic Information on the Control Group (LIA 101 Respondents)

		N	Percentage of Total Responses	Mode
Age				18
		18	61	75.3%
		19	10	12.3%
		20	3	3.7%
		21	2	2.5%
		22	2	2.5%
		23	2	2.5%
Sex				Female
	Male	26	32.1%	
	Female	55	67.9%	
Race				White
	White	40	49.4%	
	Black	6	7.4%	
	Asian	13	16.0%	
	Hispanic/Latino	8	9.9%	
	Multiracial	12	14.8%	
Socio-Economic Status (Based on Household Income)				\$75,001-\$100,000
	Under \$25,000	7	8.6%	
	\$25,000-\$50,000	10	12.3%	
	\$50,001-\$75,000	9	11.1%	
	\$75,001-\$100,000	19	23.5%	
	\$100,001-\$200,000	18	22.2%	
	Over \$200,000	12	14.8%	
Class Level				Freshman
	Freshman	66	81.5%	
	Sophomore	5	6.2%	
	Junior	4	4.9%	
	Senior	3	3.7%	
Major				Biological Sciences or Health & Wellness Sciences
	Biological Sciences or Health & Wellness Sciences	27	33.3%	
	Business, Management, & Economics	8	9.9%	

Communication & Media	17	21.0%	
Education & Teaching	2	2.5%	
Engineering & Technology or Computing	1	1.2%	
Environmental Issues & Physical Sciences	5	6.2%	
Justice Studies	2	2.5%	
Mathematics & Statistics	1	1.2%	
Political Science	0	0.0%	
Psychology	16	19.8%	
Sociology	1	1.2%	
Number of College-Level Political Science Courses Taken During or Before the Semester		0	
	0	67	82.7%
	1	4	4.9%
	2	5	6.2%
	3	2	2.5%
	4 or more	3	3.7%

Note: not all percentages will add up to 100% due to non-response among some respondents

Demographic Information on the Control Group (POS 110 Respondents)

	N	Percentage of Total Responses	Mode
Age			18
	18	35	37.6%
	19	22	23.7%
	20	21	22.6%
	21	5	5.4%
	22	4	4.3%
	23	0	0.0%
	24	1	1.1%
Sex			Male
	Male	55	59.1%
	Female	37	39.8%
	Other	1	1.1%
Race			White
	White	54	58.1%
	Black	1	1.1%
	Asian	4	4.3%
	Hispanic/Latino	20	21.5%

	Pacific Islander	1	1.1%	
	Multiracial	8	8.6%	
	Other	2	2.2%	
Socio-Economic Status (Based on Household Income)				\$100,001-\$200,000
	Under \$25,000	5	5.4%	
	\$25,000-\$50,000	18	19.4%	
	\$50,001-\$75,000	13	14.0%	
	\$75,001-\$100,000	13	14.0%	
	\$100,001-\$200,000	19	20.4%	
	Over \$200,000	15	16.1%	
Class Level				Freshman
	Freshman	34	36.6%	
	Sophomore	32	34.4%	
	Junior	24	25.8%	
	Senior	3	3.2%	
Major				Political Science
	Architecture, Construction, or Design	1	1.1%	
	Biological Sciences or Health & Wellness Sciences	5	5.4%	
	Business, Management, & Economics	10	10.8%	
	Communication & Media	12	12.9%	
	Education & Teaching	4	4.3%	
	Engineering & Technology or Computing	7	7.5%	
	Exploratory/Undeclared/I haven't decided yet	4	4.3%	
	Humanities & Languages	8	8.6%	
	Justice Studies	5	5.4%	
	Mathematics & Statistics	1	1.1%	
	Political Science	30	32.3%	
	Psychology	3	3.2%	
	Sociology	3	3.2%	

Number of College-Level Political Science Courses Taken During or Before the Semester, Outside of POS 110			1
0	0	0.0%	
1	59	63.4%	
2	21	22.6%	
3	6	6.5%	
4 or more	7	7.5%	

Note: not all percentages will add up to 100% due to non-response among some respondents