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Alex R. Lin, Joshua F. Lawrence, Catherine E. Snow & Karen S. Taylor

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Assessing Adolescents' Communicative Self-Efficacy to Discuss Controversial Issues: Findings From a Randomized Study of the Word Generation Program

Alex R. Lin and Joshua F. Lawrence
University of California, Irvine

Catherine E. Snow
Harvard University

Karen S. Taylor
University of California, Irvine

Abstract: Communicative self-efficacy serves as an important link between discussing controversial issues and civic engagement because confidence in one's discourse skills is important to managing conflicting perspectives and developing solutions to community-based problems. Freely available to schools, *Word Generation* is a cross-content literacy program that supports teachers in the four main content areas—ELA, social studies, science, and math—to embed learning of controversial issues through classroom discussions, subject-specific lessons, and writing. Middle school students (N = 5,870) from diverse backgrounds participated in a randomized study of the intervention that was conducted in 12 middle schools located in an urban school district. We analyzed survey data based on students' self-reported ratings on their communicative self-efficacy, as indicated by confidence to participate in discussions of 15 different controversial issues related to politics, society, and science. Paired sample t-tests indicate that treatment students reported higher communicative self-efficacy than control students on a set of topics immediately covered prior to testing, but not on the set of topics covered in the previous year. This study informs curriculum developers, policy makers, and educators to consider the importance of incorporating classroom discussions of controversial issues within a framework of subject-specific instruction.

Correspondence should be sent to Alex R. Lin, School of Education, University of California, Irvine, 3200 Education Bldg., Irvine, CA 92697. Email: alin13@uci.edu

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In the last decade, young American adults (18–29 years old) have been *less* active in voting, volunteering, and other key indicators of civic engagement (Adler & Goggin, 2005; Vercellotti & Matto, 2013). Yet a promising finding is that adolescents who frequently engaged in and discussed issues related to politics and other current events with family members and peers were also more likely to become informed and efficacious about participating in politics (Center for Information and Research on Civic Learning & Engagement [CIRCLE], 2013; McIntosh, Hart, & Youniss, 2007). Also known as *controversial issues*, these issues are characterized as unresolved issues of public policies containing significant disagreement that promote deliberation (Hess, 2009). One important link between engaging in controversial issues and civic engagement is communicative self-efficacy, or positive beliefs regarding individual discourse skills. Self-efficacy research suggests that successful performance on debating controversial issues may enhance one's self-efficacy on more distal outcomes related to civic engagement, such as voting and volunteering (Bandura, 1997; Zorn, Roper, Broadfoot, & Weaver, 2006). For these reasons, it is important to examine ways of helping adolescents develop communicative self-efficacy.

Schools provide a context where adolescents have opportunities to engage in political discussions with peers and teachers (Gutmann & Thompson, 1996; Lin, 2015; Verba, Scholzman, & Brady, 1995; Wray-Lake & Syvertsen, 2011). Teachers can take advantage of the diversity in beliefs and values across students to facilitate active classroom discussions (Steiner, Brzuzy, Gerdes, & Hurdle, 2003). Discussions are rarely emphasized however (Hahn, 1996). In an evaluation of 48 high school social studies classes, students participated in an average of only half a minute per class period of classroom discussion, while 63% of the observed class periods lacked explicit support for discussions (Nystrand, Gamoran, & Carbonaro, 1998). More troubling is that substantive discussions in social studies are more infrequent in low socioeconomic and high minority classrooms (Kahne & Middaugh, 2008). There are formidable obstacles in promoting classroom discussions of controversial issues, such that social studies teachers are usually cautious about receiving "pushback" from the parents and school community, as well as the possibility of students recoiling from discussion out of fear of receiving peer criticism (Avery, Levy, & Simmons, 2013). However, there are promising findings showing that teachers' goals of promoting lively discussions of controversial issues can be achieved under certain conditions where they are supported in their efforts by school leaders and community, more broadly (Hess & McAvoy, 2015). An innovative literacy program called *Word Generation* encourages the support of the

school community to engage teachers across all content areas with the task of instructing controversial issues to students and is the central topic of this study.

The Word Generation program engages students in learning academic vocabulary through the discussion of a different controversial issue each week. These lessons are not only taught in social studies, but also in other content-area contexts, such as math, English language arts (ELA), and science. Several studies have demonstrated that the program can benefit students' writing quality (Mancilla-Martinez, 2010) and vocabulary development (Lawrence, Capotosto, Branum-Martin, White, & Snow, 2012), and evidence suggests differentiated effects favoring English language learners (Hwang, Lawrence, Mo, & Snow, 2015; Snow, Lawrence, & White, 2009). The overarching goal of the current study is to determine whether this school-level intervention can improve adolescents' communicative self-efficacy to discuss controversial issues. The implications of this study will inform civic educators to consider extending learning of controversial issues beyond social studies and into other content area courses.

CONTROVERSIAL ISSUES DISCUSSION AND ITS IMPORTANCE IN THE SOCIAL STUDIES TEACHING CONTEXT

The *College, Career, and Civic Life (C3) Framework* for History–Social Studies Standards provides expectations that students can analyze primary and secondary sources, cite textual evidence to support arguments, consider the influence of an author's perspective, and corroborate different sources, all of which represent crucial skills for success in college and beyond (National Council for the Social Studies, 2013). A recent national report recommended controversial issues discussions as one of the six proven practices to facilitate civic learning based on a culmination of findings from 8 years of research on schools across the nation (Gould, 2011). Although social studies teachers have responded to these standards, controversial issues discussions generally occur in a limited context where issues mainly revolve around politics, such as past Supreme Court decisions and civil rights events (Hess, 2002). To this end, theoretical and practical work demonstrate how students and teachers can benefit from classroom discussions of controversial issues.

Controversial issues discussions refer to a cooperative approach of promoting discussions that focus on helping students learn controversial issues in the context of considering multiple perspectives (Parker & Hess, 2001).[1] To facilitate discussion, controversial issues offer meaningful topics that can be effectively used in the classroom setting. Controversial issues encompass unresolved questions of public policy that often cannot be settled by reason, logic, and/or experiments (Hess, 2009). Immigration policy and the environmental state of the world are topic questions that have the potential of supporting rich discussions because there are multiple positions that can be advocated

(Harwood & Hahn, 1990). These kinds of issues challenge students to consider different perspectives, while forcing them to rethink their own stance (Hess, 2009).

As the moderators, teachers play a role in facilitating controversial issues discussions with the goals of helping students explore differing viewpoints in the context of developing shared meaning and collaboration (Hess, 2009). Adolescents with no prior experience in discussing controversial issues are more likely to focus on supporting their own positions, while paying little attention to alternative perspectives (Felton & Kuhn, 2001). Teachers can act as facilitators who guide students into understanding that competing points of views need to be equally represented (Maloney & Simon, 2006). For example, teachers can limit contributions from outspoken students so that more hesitant or inexperienced students have opportunities to participate (Hess, 2009). Another concern is authenticity of classroom discussions, such that even well-intentioned teachers may believe they are leading a discussion of an issue when, in practice, they may lead students into *recitation*, or the pursuit of a known answer (Hahn, 1998). Although the teacher plays a facilitating role, the goal is for students to develop and articulate their own positions in the context of speaking to each other directly (Hess, 2002, 2009; Parker & Hess, 2001).

From the students' perspectives, classrooms that promote discussions of controversial issues can facilitate their interests, appreciation of conflict, and political attitudes according to qualitative (Hess, 2009; Hess & McAvoy, 2015) and quantitative research (Hess & Posselt, 2002). For example, students who experienced classroom discussions of controversial issues have shown increased engagement at the classroom level, as evidenced by developing more positive feelings toward social studies courses, teachers, and textbooks (Chilcoat & Ligon, 2000; Dilworth, 2008; Hahn, 1991), as well as more broadly at the personal level, such that they brought up these issues more frequently with their friends and family (McDevitt & Kiousis, 2006). The extent that students perceive classroom opportunities to discuss controversial issues is positively related to their tolerance for diverse viewpoints (Hahn & Tocci, 1990). In fact, exposure to multiple perspectives was cited as one of the main reasons why high school students were particularly drawn to discussing controversial issues in their classrooms because they were rarely exposed to political views that differed from their own, according to case study data (Hess & McAvoy, 2015). These findings taken together suggest that classroom discussions of controversial issues can be a particularly engaging and informative experience for students. However, the social studies curriculum may not fully equip students to address all the challenges associated with learning about controversial issues and, thus, we turn to the importance of fostering critical literacy and reading skills.

Expository text, such as textbooks, newspapers, and reports, are widely used to learn and examine controversial issues. However, information is presented through a specific form of discourse that can be described as academic

language and represents a major challenge for adolescents with developing reading skills. One aspect of academic language is the prevalence of all-purpose academic words, such as *data, hypothesis, theory*, and *contrast*. These words are often used to construct arguments and synthesize information (Snow, 2010). Despite the importance of academic vocabulary, these words are less likely to be explicitly taught by social studies teachers who spend a majority of their instructional time covering material (Snow et al., 2009). Without access to all-purpose academic vocabulary, students will likely have difficulties formulating cogent positions. To address this issue, curriculum interventions have attended to students' use of academic language in the context of controversial issues based on effectiveness in improving students' argumentative writing. One program of wide interest is a professional development program called *Teaching American History* that informs social studies teachers to incorporate disciplinary literacy tools in reading and writing. Findings indicate meaningful improvements from pre- to post-test of about one standard deviation in the quality and length of 8th grade students' argumentative writing (153 intervention and 157 control students) with comparable effects also demonstrated among struggling readers (de la Paz et al., 2014). These findings suggest that students' abilities to engage in discussion can be effectively improved when literacy development is not limited to the purview of the ELA teachers alone and this responsibility is shared among teachers in other content areas. We turn to an innovative program that combines academic language instruction with the goals of enhancing students' abilities to understand and articulate their positions on various controversial issues.

WORD GENERATION PROGRAM

Beginning in 2006, Word Generation was originally developed in the context of a partnership between the Strategic Education Research Partnership (SERP Institute) and the Boston public middle schools to improve students' academic vocabulary in the context of a quasi-experimental study that showed small but significant effects on target word learning (Snow et al., 2009). The SERP Institute is a non-profit organization consisting of an interdisciplinary team of researchers, developers, and practitioners that establishes partnerships with school districts to incorporate practice-embedded research programs to improve students' learning.[2] The Word Generation program has expanded and exists in some form across all fifty states, as well as in more than fifty countries (SERP Institute, 2015). However, the randomized evaluations of the Word Generation program have been limited to several large urban school districts located in the northeast and west coast metropolitan areas (Lawrence, Crosson, Pare-Blagoev, & Snow, 2015).

The Word Generation program is a cross-content literacy program delivered at the classroom or grade level that instructs students to learn

high-leverage academic words (e.g., *relevant, presumed*) that are likely to be encountered in academic texts across multiple domains (Lawrence et al., 2015).[3] For fifteen minutes a day, teachers in the four main content areas—ELA, social studies, science, and math—explore academic language that is embedded in the curriculum through discourse and writing related to the controversial issue of the week (Snow et al., 2009). The program includes 24 week-long units, each covering a broad array of political (e.g., death penalty), social (e.g., cyber-bullying), and science (e.g., stem cell research) based controversies that were also selected because of their high interest to this age group. Students are given graphic organizers containing general information about each controversial issue as well as examples of various opinions that can be defended during classroom discussions.

The weekly sequence of the program was developed to provide students with recurrent exposure and opportunities to learn about the controversial topics in various subject-specific contexts (Snow et al., 2009). The following is an example of the organization of 1 week's activities on the topic of stem cell research: On Monday, the ELA teacher presents a text that starts with a narrative about a girl who was accidentally shot and paralyzed but for whom stem cell research might offer a cure. The rest of the brief text presents positions against (religious objections, use of embryos) and in favor of (scientific and medical advances, global competitiveness) federal funding of stem cell research. On Tuesday, the math teacher provides a lesson that prompts students to calculate how many stem cells are in the human body. The science teacher then assigns an experiment on Wednesday in which students hypothesize and test whether their peers have correct assumptions about stem cells. The most notable aspect of the program relates to the social studies discussion activity on Thursday in which students are given four possible positions about the week's topic and can choose to articulate their positions for or against funding stem cell research. Social studies teachers can organize classroom discussion around the controversial issue in one of several possible formats (e.g., pairs or whole class; Snow et al., 2009). On Friday, the ELA teacher assigns a writing exercise that prompts students to write a persuasive essay defending their position on the topic.

PROMOTING COMMUNICATIVE SELF-EFFICACY IN THE CONTEXT OF ACTIVE CLASSROOM DISCUSSION

There is reasonably strong evidence that controversial issues discussions can help improve communicative self-efficacy. Based on Bandura's theories on self-efficacy (1997), communications researchers (Koesten, Miller, & Hummert, 2002) define *communicative self-efficacy* as an individual's belief in their confidence level to communicate their own words, thoughts, and feelings to others. It is important to note that communicative self-efficacy refers to

individuals' *beliefs* regarding their capabilities to communicate effectively with others, rather than actual capabilities (Bandura, 1997; Milstein, 2005). This competence to engage and discuss controversial issues is shaped by many factors, including interest in the topic, interpersonal skills in a public setting (e.g., listening attentively and disagreeing respectfully), willingness to encounter criticism from peer discussants, and anticipation of alternate viewpoints (Hess, 2002). Communicative self-efficacy represents an aspect of internal political efficacy as conceptualized by Levy (2011) and others (Miller, Miller, & Schneider, 1980) whose research focused on how the person's belief to participate competently in political processes is related to developing a stronger external capacity to participate in political action (external political efficacy). This particular self-efficacy to discuss certain topics may be promoted in a context where controversial issues discussions are facilitated by a moderator (e.g., teacher) who strives to ensure that participants speak and receive respectful treatment.

Various studies suggest that interventions based on controversial issues discussions can improve communicative self-efficacy (Klosterman & Sadler, 2010; Venville & Dawson, 2010; Zorn et al., 2006). For example, a study on adult focus groups found that intervention participants ($n = 59$) significantly improved from pre- to post-test on communicative self-efficacy scores as indicated by their self-reported confidence and motivation to engage in public discussions of human biotechnology issues (Zorn et al., 2006). The implications of this study suggest that interventions similar to the Word Generation program can promote communicative self-efficacy because less engaged participants observed communicative behaviors that were modeled and encouraged (via a facilitator), experienced emotional arousal related to enthusiasm, and received positive feedback for their participation. Despite these promising findings, several questions remain unanswered. Firstly, most of these communicative self-efficacy studies examined adults' experiences with controversial issues discussions (Zorn et al., 2006), but there is less research on adolescents. With one exception (Venville & Dawson, 2010), the studies do not include control groups (Klosterman & Sadler, 2010; Zorn et al., 2006). Finally, these findings are mainly relevant to a non-diverse sample that features a low representation of ethnic minorities, including Asians, African Americans, and Latinos.

Research on secondary social studies classrooms in the United States and other countries abroad has consistently revealed that there are strong positive relations between students' perceptions of classroom climate, as indicated by the extent that open expression is supported by teachers and peers, and various indicators of civic and political engagement, including civic behaviors and external political efficacy (Campbell, 2008; Lin, 2014; Schulz, Ainley, Fraillon, Kerr, & Losito, 2010; Torney-Purta, Lehmann, Oswald, & Schulz, 2001). Although these findings provide understanding on how these distal outcomes of civic engagement can be shaped by classroom climate, there is

limited empirical work on proximal civic engagement outcomes related to communicative self-efficacy, which in turn represents an aspect of their political efficacy. Various civic-based classroom activities, such as mock elections and legislative role-playing games, have been successful in improving students' self-efficacy (for a review see Levy, 2011). Similar to this context of providing classroom opportunities to engage in small-scale decision-making, students' engagement in controversial issues can enable them to feel successful in real or simulated decision-making processes that may shape their confidence to participate in a broad real world context.

PRESENT STUDY

Our previous evaluation revealed that the Word Generation program succeeded in improving several dimensions of discussion quality in classrooms that were also observed in this study (Lin, Lawrence, & Snow, 2015). Trained classroom observers gave higher discussion ratings in classrooms that were randomly assigned to implement the Word Generation curriculum ($n = 80$) than control classrooms ($n = 88$) with these findings consistent across social studies, ELA, and math, though no impact was observed in science classes. The Word Generation program was successful in encouraging teachers to consciously direct students to engage in active and lively discussions, though such discussions were rated on a broad scale, such as the extent that teachers posed open-ended questions or the rate of student participation. Although there is reasonable evidence suggesting that the Word Generation program can help teachers improve classroom discussion quality, there is limited understanding on the extent to which students' participation in the Word Generation program might be related to improvements in their communicative self-efficacy. We utilize a step-by-step approach of analyzing specific groupings of controversial topic items that were not covered (control topics, RQ1) and covered (treatment topics, RQ2) under the Word Generation program, rather than general self-efficacy to discuss controversial issues. Our secondary analysis is to assess whether students report long-term efficacy on topics that were covered under the Word Generation programs in the previous year (RQ3). The three research questions are as follows:

RQ1: Did students in the treatment and control group differ in communicative self-efficacy on general topics of interest to adolescents that were not covered in the Word Generation program?

RQ2: Did treatment students report higher communicative self-efficacy on topics that had been discussed as part of the Word Generation program during the school year immediately prior to testing, as compared to control students?

RQ3: Did treatment students report higher communicative self-efficacy on topics that they had been exposed to as part of the Word Generation program during the school year prior to testing, as compared to control students?

METHODS

Research Design

Twelve middle schools (sixth–eighth grade) located in a west coast metropolitan area of the United States participated in a two-year evaluation study of the Word Generation program. The SERP Institute recruited the school district leadership team, who then coordinated central office administrators at each middle school to ask school leaders about participating in this research. The study's authors were collaborating researchers with SERP Institute and had the following roles: The first author led evaluations on students' classroom experience with controversial issues discussions and civic engagement, the second author directed the Institute of Education Sciences (IES) funded evaluation of the program, and the third author was a leader in creating the Word Generation program.

In the initial phase of randomization, consenting schools acknowledged that they would be randomized to either "Phase 1" or "Phase 2" implementation. Phase 1 schools would receive the treatment the following fall and also in the subsequent school year. Phase 2 schools would serve as controls for 2 years and would be offered the program in the years subsequent to the completion of the randomized trial. Each school received general composite scores computed from state accountability data that were used to rank each school on several school-level variables based on the percentage of students identified as ethnic minorities, low-income status, and English language learners, as well as the school's prior academic achievement. Schools were grouped into dyads based on having similar composite scores, and the final process of randomization occurred within each dyad. The result was six schools each in treatment and control conditions. In each school, students obtained parental consent to participate and release information on their academic and psychological performances for the study's research purposes.

In order to support program implementation, we provided professional development to teacher participants who worked in the treatment schools. Prior to the intervention, these teachers were invited to attend half-day, comprehensive sessions on the Word Generation program at the district office during the summer. During these sessions, participants learned about the rationale for the Word Generation program, its goals and structure, and key components such as "teacher talk moves," which consists of open-ended and follow-up questions that teachers can use to promote students to explain their thinking and

facilitate higher quality discussions (Michaels, O'Connor, & Resnick, 2008). Participants viewed video examples of Word Generation lessons in each of the content areas. Further, there was a Word Generation Lead at the treatment schools who was responsible for coordinating the day-to-day aspects of implementation. At the start of the school year, teachers in the four main content areas (e.g., ELA, social studies, science, and math) of the treatment schools were required to implement the Word Generation program, while teachers in the control schools provided "business as usual" instructions (Lawrence et al., 2015). At the end of the trial study, Word Generation curricular materials and professional development supports described previously were offered to the control schools.

Participants

Table 1 presents grade level contributions from each middle school that participated in the randomized study. Although an equal number of schools were randomly assigned to treatment ($n = 6$) and control ($n = 6$) conditions, the sample ($N = 5{,}870$) featured more students who enrolled in treatment ($n = 3{,}518$; [59.9%]) than control ($n = 2{,}352$; [40.1%]) schools. There was a near equal representation of sixth-grade (31.5%), seventh-grade (32.6%), and eighth-grade (35.9%) student participants across all schools.

Table 2 indicates that there were slightly more males (56.3%) than females. The sample consisted of students from diverse racial/ethnic backgrounds that included Asians (47.5%), Hispanics (16.9%), and African Americans (6.0%). A majority of the participants (56.0%) were from low socioeconomic status (SES) homes (as indicated by eligibility for the free and reduced lunch program), and half the participants identified as English language learners. Significance tests were conducted and revealed no differences between students in the treatment and control group on a number of relevant characteristics, including their academic achievement (e.g., ELA and math scores) and SES, though there were marginal differences in the proportion of Caucasian students in the treatment compared to the control schools.[4]

Word Generation

Discussion of topics in the Word Generation program. Students in the Word Generation program encountered a unique set of controversial topics in the first (2010–2011) and second school year (2011–2012) of the randomized study (see Table 3). Since we gave our efficacy survey at the end of the 2011–2012 school year, all students in Word Generation schools had encountered the topics that were taught that year. We refer to these topics as "treatment topics" because all students were exposed to them during the year that we

Table 1. Grade Level Contributions by Schools Organized by Treatment Condition

	6th Graders		7th Graders		8th Graders		All Grades	
Schools	*n*	% of school	*n*	% of school	*n*	% of school	*n*	% of school
Control Schools								
Duffie Oak	155	43.9%	59	16.7%	139	39.4%	353	15.0%
Evergreen	56	48.3%	21	18.1%	39	33.6%	116	4.9%
Honeysuckle	76	17.7%	117	27.3%	236	55.0%	429	18.2%
Maple	256	36.9%	212	30.5%	226	32.6%	694	29.5%
Rosemary	—	—	214	51.2%	204	48.8%	418	17.8%
Vineland	107	31.3%	111	32.5%	124	36.3%	342	14.5%
Total	650	27.6%	734	31.2%	968	41.2%	2,352	40.1%
Word Generation Schools								
Apple	371	35.0%	352	33.2%	338	31.9%	1,061	30.2%
Arbola	279	36.4%	239	31.2%	248	32.4%	766	21.8%
Flower Square	118	40.8%	72	24.9%	99	34.3%	289	8.2%
Hemlock	62	36.9%	61	36.3%	45	26.8%	168	4.8%
Moon	87	25.0%	135	38.8%	126	36.2%	348	9.9%
Palm	281	31.7%	323	36.5%	282	31.8%	886	25.2%
Total	1,198	34.1%	1,182	33.6%	1,138	32.3%	3,518	59.95%
All Schools	1,848	31.5%	1,196	32.6%	2,106	35.9%	5,870	100.0%

Note. Analytic sample based on students who responded to at least 3 out of 15 survey items.

Table 2. Demographics of the Analytical Sample by Treatment Condition

	Control Schools		Word Generation Schools		All Schools	
	n	%	*n*	%	*n*	%
Female	968	41.2%	1,595	45.3%	2,563	43.7%
Special Education	175	7.4%	261	7.4%	436	7.4%
Free and Reduced Lunch Eligible	1,344	57.1%	1,944	55.3%	3,288	56.0%
English Language Learner	1,219	51.8%	1,710	48.6%	2,929	49.9%
Asian	1,115	47.4%	1,673	47.6%	2,788	47.5%
African-American	146	6.2%	209	5.9%	355	6.0%
Hispanic	397	16.9%	597	17.0%	944	16.9%
Caucasian	110	4.7%	332	9.4%	442	7.5%
Total Students	2,352	40.1%	3,518	59.9%	5,870	100.0%

Note. Analytic sample based on students who responded to at least 3 out of 15 survey items.

conducted the efficacy survey. The seventh- and eighth-graders enrolled in the Word Generation program also had experience with the topics covered in the previous year (2010–2011), when they were sixth- and seventh-grade students. We refer to these topics as "follow-up topics" because at the time of testing, students had not experienced Word Generation curriculum on those topics for more than a year. Analyzing the follow-up topics reveals the persistence of any topic-specific increases in self-efficacy. None of the students in the treatment or control schools encountered the "control topics."

Program implementation of Word Generation. Although the Word Generation program was implemented in a consistent manner during specific times that observers were present, it may have been noticeably inconsistent throughout the school year. In 89% of the observation periods ($N = 96$), observers found that teachers and students brought their workbooks to class. However, students' completion rates of workbooks varied and tended to decrease precipitously toward the end of the year. Workbook completion rates decreased over time from the start in Week 1 (82%), midpoint at Week 12 (69%), and at the end in Week 24 (57%).

Measures

All students who participated in the randomized trial in the year of this study completed survey items that assessed their communicative self-efficacy

Table 3. Timeline of Treatment, Follow-Up, and Control Topics Displaying Number of Students Who Were Analyzed, Instructed (Bolded), and Not Instructed (X)

	Word Generation Schools		Control Schools	
	Grade 6	Grades 7 and 8	Grade 6	Grades 7 and 8
Word Generation Program Year 1 Topics (2010–2011)				
Should colleges use Affirmative Action?	X[a]	**2,301**[c]	X	1,690[b]
Should the government fund stem cell research?	X	**2,314**	X	1,694
Should Creation be taught in school?	X	**2,307**	X	1,687
Should English be the official language of the United States?	X	**2,308**	X	1,692
Is nuclear power a danger to society?	X	**2,298**	X	1,681
Word Generation Program Year 2 Topics (2011–2012)		**Testing Year**		
Should athletes be allowed to use steroids?	**1,825**	**2,298**	639	1,688
Should there be more strict dress codes at schools?	**1,194**	**2,307**	848	1,694
Is the death penalty justified?	**1,186**	**2,302**	639	1,684
Does rap music have a negative impact on students?	**1,185**	**2,307**	844	1,685
What should be done about global warming?	**1,174**	**2,287**	637	1,678
Should the government allow animal testing?	**1,192**	**2,303**	644	1,689
Control Topics				
Should schools protect students from cyberbullying?	1,191	2,315	845	1,698
Should schools be a place for debates?	1,191	2,307	647	1,688
Should secret wiretapping be legal?	1,175	2,295	640	1,682
Should schools have a vocational track?	1,180	2,282	638	1,676

[a]"X" refers to number of students not instructed nor analyzed in the study.
[b]Number of students analysed.
[c]Bold refers to number of students instructed and analyzed in the study.

to discuss controversial issues. However, this data was only collected at one time point (midpoint of the academic school year) and not at any time before or at the end of the trial study. Students were asked to respond to the guiding question: "How confident are you in being able to participate in a discussion about the following topics?" and then assessed on a series of 15 topics pertaining to particular controversial issues. For example, students were asked, "How confident are you in being able to participate in a discussion about the topic in regards to should colleges use affirmative action?" and they answered based on a five-point Likert Scale of (1) not at all, (2) a little, (3) somewhat, (4) very, and (5) extremely. Eleven survey items were based on the topics that were covered in the Word Generation program. The other four survey items also assessed topics of national interest to youth but were not covered as part of the Word Generation program.

Data Analysis

This study seeks to evaluate students' short- and long-term communicative self-efficacy on various controversial issues, and thus, survey items were grouped by topic sequence covered under the Word Generation program and not by substantive area. For these reasons, corresponding survey items were averaged to create scales that reflect control (4 items, $\alpha = 0.62$), treatment (6 items, $\alpha = 0.58$), and follow-up (six items, $\alpha = 0.52$) topics, and this grouping demonstrated better reliability than groupings based on substantive areas ($\alpha = 0.36$–0.52). Although our scale reliabilities were slightly lower than what is considered acceptable, it is comparable to reliabilities reported in research on adults' opinions about various political issues (Thórisdóttir & Jost, 2011). Nonetheless, we provide caution in the interpretation of significant findings on the scaled scores. To aid in the readers' understanding of these measures, we also included separate analyses on the communicative self-efficacy scores for each individual controversial issue item.

We considered using a hierarchical linear modeling approach to account for student nesting within schools as we have done in articles that investigate literacy-related outcomes (Lawrence et al., 2015). However, we did take this approach here for two reasons: Firstly (and most importantly), there is very little variance in communicative self-efficacy explained at the school level (intra-class coefficient = 0.006, $p = n.s.$). Secondly, with only 12 schools in this particular aspect of the larger study, we realized that we may be underpowered if we used this approach. Therefore, we tested to see whether the groups reported similar levels of communicative self-efficacy on a set of untreated control questions, and then we answered the research questions with two-sample mean comparison *t*-tests (Bonferroni adjustment used to correct for Type 1 errors) to compare differences between students in the treatment and control groups on their average communicative self-efficacy scores. As a

precursor to the analyses, tests of normality were run on the data. Although some of the measures had a *p*-value less than .05 in the Kolmogorov–Smirnov test, parametric tests were deemed suitable for the current study given the large sample size (Pallant, 2007).

RESULTS

Table 4 presents means and standard deviations of students' communicative self-efficacy scores on each topic item as well as average scores in the control, treatment, and follow-up topics.

RQ1: Did students in the treatment and control group differ in communicative self-efficacy on general topics of interest to adolescents that were not covered in the Word Generation program?

The average communicative self-efficacy scores for the control topics were virtually identical between treatment ($M = 2.92$, $SD = 0.79$) and control ($M = 2.92$, $SD = 0.78$) students. No differences were found between treatment and control students for the control topics. Interestingly, we find that control students ($M = 2.83$, $SD = 1.21$) reported higher communicative self-efficacy than treatment students ($M = 2.75$, $SD = 1.19$) on one of the four items in the control topics (i.e. "Should schools have a vocational track?"). No differences in communicative self-efficacy scores were found between treatment and control students on the other three items.

RQ2: Did treatment students report higher communicative self-efficacy on topics that had been discussed as part of the Word Generation program during the school year immediately prior to testing, as compared to control students?

Our results indicate that treatment students reported higher communicative self-efficacy than control students on treatment topics, which suggests that participating in the Word Generation program led to improvements in students' confidence to discuss topics that were immediately covered prior to testing. Based on *t*-test analyses, the difference of 0.10 in average scores on the treatment topics between treatment ($M = 2.61$, $SD = 0.82$) and control ($M = 2.51$, $SD = 0.75$) students was statistically significant, $t\ (5{,}814) = -2.67$, $p < .001$. For the purposes of analyzing controversial issues corresponding to the treatment topics, treatment students reported higher communicative self-efficacy than control students on four out of the six items in the treatment topics. For example, treatment students ($M = 2.43$, $SD = 1.34$) reported more confidence than control students ($M = 2.30$, $SD = 1.31$) to participate in a discussion about whether the government should allow animal testing, $t\ (5{,}825) = -3.51$, $p < .001$.

Table 4. Means and Standard Deviations of Students' Communicative Self-Efficacy to Participate in Discussions of Control, Treatment, and Follow-Up Topics

	Control Schools			Word Generation School			All Schools			*t*-Test	
Topic Questions	*n*	*M*	*SD*	*n*	*M*	*SD*	*n*	*M*	*SD*	Difference	Significance
RQ1											
Should schools protect students from cyberbullying?	2,344	3.92	1.22	3,505	3.92	1.21	5,849	3.92	1.21	0.00	
Should schools be a place for debates?	2,334	2.57	1.21	3,498	2.64	1.21	5,832	2.61	1.21	+0.08	
Should secret wiretapping be legal?	2,322	2.36	1.30	3,454	2.75	1.19	5,768	2.36	1.20	0.00	
Should schools have a vocational track?	2,314	2.83	1.21	3,454	2.75	1.19	5,768	2.78	1.20	−0.08	**
Average Score of Control Topics	2,332	2.92	0.79	3,489	2.92	0.78	5,821	2.92	0.79	0.00	*ns*
RQ2											
Should athletes be allowed to use steroids?	2,327	1.99	1.28	3,484	2.07	1.31	5,811	2.04	1.30	+0.08	
Should there be more strict dress codes at schools?	2,343	2.02	1.23	3,499	2.16	1.29	5,842	2.11	1.27	+0.14	***
Is the death penalty justified?	2,323	2.65	1.29	3,488	2.74	1.30	5,811	2.71	1.30	+0.09	***
Does rap music have a negative impact on students?	2,328	2.37	1.29	3,491	2.50	1.29	5,819	2.45	1.29	+0.13	***
What should be done about global warming?	2,315	3.70	1.27	3,461	3.75	1.24	5,776	3.73	1.25	+0.05	

(*Continued*)

Table 4. (Continued)

	Control Schools			Word Generation School			All Schools			*t*-Test	
Topic Questions	*n*	*M*	*SD*	*n*	*M*	*SD*	*n*	*M*	*SD*	Difference	Significance
Should the government allow animal testing?	2,332	2.30	1.31	3,495	2.43	1.34	5,827	2.38	1.32	+0.13	***
Average Score of Treatment Topics	2,324	2.51	0.75	3,492	2.61	0.82	5,816	2.57	0.80	+0.10	***
RQ3											
Should colleges use Affirmative Action?	1,686	2.70	1.07	2,301	2.71	1.04	3,987	2.70	1.05	+0.01	
Should the government fund stem cell research?	1,693	2.80	1.11	2,313	2.98	1.15	4,006	2.90	1.14	+0.18	***
Should Creation be taught in school?	1,687	3.14	1.17	2,307	3.02	1.21	3,994	3.07	1.20	−0.12	***
Should English be the official language of the U.S.?	1,692	3.15	1.37	2,308	3.03	1.36	4,000	3.08	1.36	−0.12	**
Is nuclear power a danger to society?	1,682	3.18	1.36	2, 298	3.21	1.28	3,980	3.20	1.31	+0.03	
Average Score of Follow-Up Topics	1,690	2.99	0.76	2,306	2.99	0.77	3,996	2.99	0.77	0.00	ns

Note. Students were given the prompt "How confident are you in being able to participate in a discussion about the following topics?" and followed by a series of controversial topics. Answers based on a 5-point Likert scale of (1) not at all to (5) extremely confident in being able to participate in such discussion. Analytic sample based on students who responded to at least 3 out of 15 survey items. Sample used to analyze follow-up topics restricted to only seventh- and eighth-graders. Averages for control, treatment and follow-up topics only includes students who responded to at least 75% of the corresponding items.

$^{**}p < .01$, $^{***}p < .001$.

RQ3: Did treatment students report higher communicative self-efficacy on topics that they had been exposed to as part of the Word Generation program during the school year prior to testing, as compared to control students?

Similar to our results in RQ1, treatment and control students had virtually identical average communicative self-efficacy scores on follow-up topics. These findings suggest that participating in the Word Generation program did not lead to improvements on students' confidence to discuss follow-up topics. Control students reported higher communicative self-efficacy than treatment students on two topic items. For instance, control students reported more confidence about engaging in discussions on whether Creation should be taught in school, and the difference of 0.12 was found to be statistically significant, t (3,992) = –3.37, $p < 0.001$. In contrast, treatment students reported higher communicative self-efficacy on only one topic (i.e., "Should the government fund stem cell research?").

DISCUSSION

The results from this evaluation suggest that curricular emphasis on controversial issues can be effective in improving students' communicative self-efficacy. We note, however, that program effects on students' communicative self-efficacy were limited to the topics discussed as part of the Word Generation program during the school year immediately prior to testing. These findings build on results from our previous evaluations that revealed the Word Generation program's success in improving classroom discussion quality in treatment schools (Lin et al., 2015), as well as in other school districts (Lawrence et al., 2015). Although past studies suggest that adults can benefit from controversial issues discussions (Zorn et al., 2006), the current study extends these findings to adolescents. In addition to displaying confidence to discuss socioscientific topics such as stem cell research, students in the Word Generation program reported more confidence to discuss social issues based on the moral implications of the death penalty and rap music. Although controversial issues can serve as the basis for active discussions among adolescents, careful facilitation and curricular support may be needed to effectively build students' communicative self-efficacy to discuss these issues with their peers.

We have support for our primary research goal indicating that students exposed to the Word Generation program reported higher communicative self-efficacy on topics that had been discussed as part of the Word Generation program during the school year immediately prior to testing, as compared to control students. Our first research question asked if there were differences between treated and not treated topics across groups, and the null findings suggest that the groups were equivalent. Thus, we can have confidence that the differences we found in the treated topics were due to participation in the Word

Generation program. However, we acknowledge that the effects accounted for in the analysis, although in most cases statistically significant, were generally not large. These effects reflect subtle differences such that treatment students were "somewhat" confident compared to control students who were "a little" confident in discussing controversial issues. As noted in past evaluations, it is difficult to detect larger effect sizes when teachers had less than 2 years of experience implementing discussion-based interventions (Venville & Dawson, 2010).

Nonetheless, the findings in this study support understanding that structured discussions can provide students with opportunities to observe peers discuss and work toward a collective focus on developing a solution (Gist, Stevens, & Bavetta, 1991). In addition, teachers can facilitate discussions so that adolescents have opportunities to speak in a structured environment that aims to give respectful treatment to the speaker (Ehman, 1980). These specific discussion features can contribute to participants having positive beliefs in their ability to engage in discussions (Zorn et al., 2006). The impact of the Word Generation program on students' communicative self-efficacy in treated topics might be attributed to the accumulative effect of students' knowledge regarding controversial issues. Past studies indicate that students learn discussion skills more effectively when these discussions are combined with subject-specific lessons (Angeli & Valanides, 2009; Means & Voss, 1996). Means and Voss (1996) found that knowledge is related to performance during controversial issues discussions, such as the number and types of reasons generated by participants. A similar reason might be that the Word Generation program provides students with opportunities to reflect on different perspectives within a controversial issue, which helps them understand the argumentative structure behind discourse practice.

Results from this study also indicate that treatment and control students did not differ in their communicative self-efficacy on follow-up topics. These results might reflect students' need for ongoing involvement with issues to maintain the knowledge structures that support communicative self-efficacy. Controversial issues evolve rapidly and require sustained attention to current events through the media. It is worth noting that the Word Generation curriculum is not very intensive. Each controversial topic gets at most 60–80 minutes of classroom attention. Despite these limitations, these findings demonstrate the difficult task of improving students' communicative self-efficacy that generalizes across discussions of different topics. Past research on an argumentation intervention found that improvements were slow and did not show significant improvement until 3 years of implementation (Kuhn & Crowell, 2011). Extensions or improvements to the Word Generation curriculum that include media and technology integration (Feldman, Pasek, Romer, & Jamieson, 2007), explicit critical-thinking instruction (Angeli & Valanides, 2009), and support to engage parents in facilitating discussions at home might extend treatment effects.

Controversial Issues Teaching: Using the Word Generation Program and Other Considerations

Teachers who wish to engage students in controversial issues discussions may be hesitant due to encountering several challenges, such as inappropriate instructional materials, the need for norms that guide respectful non-violent conflicts, and inadequate teaching pedagogies (Zembylas & Kambani, 2012). The Word Generation program is a promising tool that may help to alleviate many of these concerns by providing teachers with a comprehensive framework of learning controversial issues by providing students with the tools to learn academic language to comprehend complex texts, engage in multiple perspectives, and have structured opportunities to engage in classroom discussion. Although interventions designed to promote classroom discussions of controversial issues have been generally limited to the social studies context, the Word Generation program's strength is promoting cross-disciplinary collaboration between social studies teachers and those specializing in other content areas so that their efforts and ideas are shared.

Although there is a considerable amount of resources available for teachers and school administrators, the Word Generation program introduces some challenging instructional routines and ideas that can be formidable for implementing teachers. It is important to consider insights gathered from past research documenting how teachers can promote effective discussions on controversial issues. One key to success is that teachers need to be constantly aware of students' needs through careful listening and responses to their comments. A helpful solution is for teachers to consider using rubrics and various formal assessments to rate and give feedback on students' performance in their classroom discussion (Hess, 2002). These assessments may be helpful in supporting students toward discussion goals that communicate the progressive nature of high-quality discussions. Another point is that teachers' content knowledge has been linked with their confidence in their ability to conduct classroom discussions. Past studies suggest that teachers can learn to advance their content knowledge by engaging in various professional development opportunities that include developing a shared knowledge base with peers and consulting content experts from the community (Avery et al., 2013; Misco & Patterson, 2007). We conclude with an insightful point posed by Hess (2002), who argued that teachers should be mindful about the multiple goals of controversial issues where discussion is *both* a desired outcome and method of teaching critical thinking skills to students. While controversial issues discussions can enable students to critically engage in important content, the more important goal is that students learn *how* to participate in discussions at school and in public situations, more broadly.

Strengths, Limitations, and Suggestions

The strength of the study is the large-scale randomized design, which allows for rigorous comparisons between students who participated in the Word Generation program and those who did not. The tests used in this study can be considered statistically powerful because of the large sample size that was analyzed (Fan, 2001). Although the randomized nature of the study is critical to evaluating interventions, we address several important concerns. Because there was no baseline information about students' and teachers' experiences with classroom discussion, we highlight the possibility that schools were not well matched. Thus, differences at baseline might have also contributed to the program's effect on students' communicative self-efficacy. Longitudinal data may help address these questions, and we propose future analyses that consider modeling change in self-efficacy over time and consider treatment at the school level as a predictor of such change in cross-level interactions. Additionally, we did not have good fidelity measures of implementation. There are clearly mechanisms beyond discussion that might have affected student outcomes that we cannot account for. For example, we are not sure about the extent that teachers in treatment schools may have implemented other kinds of civic activities (e.g., mock trial, voting) to supplement the Word Generation program, and thus, more should be done to understand teachers' perspectives on their experiences using the program.

In addition to concerns about the study's design, we also address a number of other limitations. First, the study relies on students' self-reported confidence to engage in discussions of controversial issues rather than data that captured their *actual* performance during classroom discussions of controversial issues. It is certainly possible that a student who reported having higher confidence to discuss controversial issues will be actively engaged during classroom discussions. The same student, however, is equally likely to have a weak performance during classroom discussion. Past studies on self-efficacy indicate that overconfident individuals may inflate their perceived performance levels, which results in decreased attention to understanding the topics (Vancouver, Thompson, & Williams, 2001). Related to this concern is the possibility of an attitudinal effect on students' self-reported communicative self-efficacy given that they had knowledge of being assigned to classes that were part of the experiment (Erford, 2014). Next, the low scale reliabilities of the topic groupings may serve as a threat to internal validity, and thus, significant findings should be interpreted with caution. Last, it cannot be inferred at this point whether differences in students' communicative self-efficacy may be attributed to other factors such as values orientation, prior knowledge, and conceptual understanding (Ennis, 1989). Although the results of this study provide support for the hypothesized effects, the specific processes that produced these effects require additional analyses.

The results from our study also indicate the need for more research in the following areas that relate to examining adolescents' communicative self-efficacy. In understanding how students participate in these discussions, past studies indicate the need to understand how communicative self-efficacy interacts with other factors that relate to students' prior knowledge, conceptual understandings, and epistemological beliefs regarding controversial issues (Nussbaum & Bendixen, 2003; Sadler, Chambers, & Zeidler, 2004). With the use of student interviews and video footage of classroom discussions, we could also answer qualitative questions about how students respond to specific discourse strategies, topics, and formats used in discussions (Maloney & Simon, 2006). Future studies should also consider longitudinal development of communicative self-efficacy, which informs how these skills may translate into future political behavior. Expanding research in these critical areas is important to developing comprehensive assessments and teaching tools that will help schools effectively use controversial issues as a basis for classroom instruction and discussions.

CONCLUSIONS

The purpose of this study was to understand whether a literacy intervention that organizes classroom discussions around controversial issues has the potential of influencing students' communicative self-efficacy. Findings from the study suggest that students who enroll in this intervention are more likely to exhibit confidence in their abilities to engage in discussions of controversial issues that are taught and discussed as part of the program. Despite these positive findings, program effectiveness might well be improved by spending more time on each topic, adding opportunities to revisit certain issues, and/or extending deliberation to out-of-school contexts (e.g., home, online, and after-school programs). Nonetheless, the implications of this study highlight the importance of combining frequent discussion opportunities of controversial issues with instruction in subject-specific content. In facilitating discussions of controversial issues, teachers face the daunting challenge of not only ensuring that students maintain respect toward each other, but also making sure that competing points of view are equally represented (Hess, 2002). The goal of this exercise is not to encourage students to take a dogmatic stand on a particular issue, but to help them develop confidence about their skills to consider multiple sides of an issue as informed and critical consumers of information.

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NOTES

[1]We note that *discussion* as defined by this classroom approach relates to the goal of helping students best arrive toward a solution through the thoughtful consideration of alternatives, as opposed to *debate*, where the goal is to determine a "winner" or "winning side" (Avery et al., 2013).

[2]For more information about the SERP Institute, refer to http://serpinstitute.org/.

[3]For more information about the Word Generation program, refer to http://wg.serpmedia.org/.

[4]Results of this analysis are available from the first author.

REFERENCES

Adler, R. P., & Goggin, J. (2005). What do we mean by "civic engagement"? *Journal of Transformative Education*, *3*, 236–253. doi:10.1177/1541344605276792

Angeli, C., & Valanides, N. (2009). Instructional effects on critical thinking: Performance on ill-defined issues. *Learning and Instruction*, *19*, 322–334. doi:10.1016/j.learninstruc.2008.06.010

Avery, P. G., Levy, S. A., & Simmons, A. M. M. (2013). Deliberating controversial public issues as part of civic education. *The Social Studies*, *104*, 105–114. doi:10.1080/00377996.2012.691571

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York, NY: W. H. Freeman.

Campbell, D. E. (2008). Voice in the classroom: How an open classroom climate fosters political engagement among adolescents. *Political Behavior*, *30*, 437–454. doi:10.1007/s11109-008-9063

Center for Information and Research on Civic Learning & Engagement (CIRCLE). (2013). *All together now: Collaboration and innovation for youth engagement*. Boston, MA: Tufts University.

Chilcoat, G. W., & Ligon, J. A. (2000). Issues-centered instruction in the elementary social studies classroom. *Theory & Research in Social Education*, *28*, 220–272. doi:10.1080/00933104.2000.10505905

de la Paz, S., Felton, M., Monte-Sano, C., Croninger, R., Jackson, C., Deogracias, J. S., & Hoffman, B. P. (2014). Developing historical reading and writing with adolescent readers: Effects on student learning. *Theory & Research in Social Education*, *42*, 228–274. doi:10.1080/00933104.2014.908754

Dilworth, P. P. (2008). Multicultural citizenship education. In J. Arthur, I. Davies, & C. Hahn (Eds.), *SAGE handbook of education for citizenship and democracy* (pp. 424–438). Thousand Oaks, CA: SAGE Publications.

Ehman, L. H. (1980). Change in high school students' political attitudes as a function of social studies classroom climate. *American Educational Research Journal*, *17*, 253–265. doi:10.3102/00028312017002253

Ennis, R. H. (1989). Critical thinking and subject specificity: Clarification and needed research. *Educational Researcher*, *18*, 4–10. doi:10.3102/0013189x018003004

Erford, B. (2014). *Research and evaluation in counseling*. Stamford, CT: Brooks Cole.

Fan, X. (2001). Parental involvement and students' academic achievement: A growth modeling analysis. *The Journal of Experimental Education*, *70*, 27–61. doi:10.1080/00220970109599497

Feldman, L., Pasek, J., Romer, D., & Jamieson, K. H. (2007). Identifying best practices in civic education: Lessons from the Student Voices program. *American Journal of Education*, *114*, 75–100. doi:10.1086/520692

Felton, M., & Kuhn, D. (2001). The development of argumentative discourse skill. *Discourse Processes*, *32*, 135–153. doi:10.1207/s15326950dp3202&3_03

Gist, M. E., Stevens, C. K., & Bavetta, A. G. (1991). Effects of self-efficacy and post-training intervention on the acquisition and maintenance of complex interpersonal skills. *Personnel Psychology*, *44*, 837–861. doi:10.1111/j.1744-6570.1991.tb00701.x

Gould, J. (2011). *Guardian of democracy: The civic mission of schools*. College Park, MD: Annenberg Public Policy Center.

Gutmann, A., & Thompson, D. F. (1996). *Democracy and disagreement*. Cambridge, MA: Harvard University Press.

Hahn, C. L. (1991). Controversial issues in social studies. In J. Shaver (Ed.), *Handbook of research on social studies teaching and learning* (pp. 470–480). New York, NY: MacMillan Reference Books.

Hahn, C. L. (1996). Research on issues-centered social studies. In R. W. Evans & D. W. Saxe (Eds.), *Handbook on teaching social issues* (pp. 25–43). Washington, DC: National Council for the Social Studies.

Hahn, C. L. (1998). *Becoming political: Comparative perspectives on citizenship education*. Albany: State University of New York Press.

Hahn, C. L., & Tocci, C. M. (1990). Classroom climate and controversial issues discussions: A five nation study. *Theory & Research in Social Education*, *18*, 344–362. doi:10.1080/00933104.1990.10505621

Harwood, A. M., & Hahn, C. L. (1990). *Controversial issues in the classroom*. Bloomington, IN: ERIC Clearinghouse for Social Studies/Social Science Education.

Hess, D. E. (2002). Discussing controversial public issues in secondary social studies classrooms: Learning from skilled teachers. *Theory & Research in Social Education*, *30*, 10–41. doi:10.1080/00933104.2002.10473177

Hess, D. E. (2009). *Controversy in the classroom: The democratic power of discussion*. New York, NY: Taylor & Francis.

Hess, D. E., & McAvoy, P. (2015). *The political classroom: Evidence and ethics in democratic education*. New York, NY: Routledge.

Hess, D. E., & Posselt, J. (2002). How high school students experience and learn from the discussion of controversial public issues. *Journal of Curriculum and Supervision*, *17*, 283–314.

Hwang, J. K., Lawrence, J. F., Mo, E., & Snow, C. E. (2015). Differential effects of a systematic vocabulary intervention on adolescent language minority students with varying levels of English proficiency. *International Journal of Bilingualism*, *19*, 314–332. doi:10.1177/1367006914521698

Kahne, J., & Middaugh, E. (2008). *Democracy for some: The civic opportunity gap in high school*. Medford, MA: The Center for Information and Research on Civic Learning & Engagement.

Klosterman, M. L., & Sadler, T. D. (2010). Multi-level assessment of scientific content knowledge gains associated with socioscientific issues-based instruction. *International Journal of Science Education*, *32*, 1017–1043. doi:10.1080/09500690902894512

Koesten, J., Miller, K. I., & Hummert, M. L. (2002). Family communication, self-efficacy, and White female adolescents' risk behavior. *The Journal of Family Communication*, *2*, 7–27. doi:10.1207/s15327698jfc0201_3

Kuhn, D., & Crowell, A. (2011). Dialogic argumentation as a vehicle for developing young adolescents' thinking. *Psychological Science*, *22*, 545–552. doi:10.1177/0956797611402512

Lawrence, J. F., Capotosto, L., Branum-Martin, L., White, C., & Snow, C. E. (2012). Language proficiency, home-language status, and English vocabulary development: A longitudinal follow-up of the Word Generation program. *Bilingualism: Language and Cognition*, *15*, 437–451. doi:10.1017/S1366728911000393

Lawrence, J. F., Crosson, A. C., Pare-Blagoev, E. J., & Snow, C. E. (2015). Word Generation randomized trial: Discussion mediates the impact of program treatment on academic word learning. *American Educational Research Journal*, *52*, 750–786. doi:10.3102/0002831215579485

Levy, B. L. (2011). Fostering cautious political efficacy through civic advocacy projects: A mixed methods case study of an innovative high school class. *Theory & Research in Social Education*, *39*, 238–277. doi:10.1080/00933104.2011.10473454

Lin, A. R. (2014). Examining students' perception of classroom openness as a predictor of civic knowledge: A cross-national analysis of 38 countries. *Applied Developmental Science*, *18*, 17–30. doi:10.1080/10888691.2014.864204

Lin, A. R. (2015). Citizenship education in American schools and its role in developing civic engagement: A review of the research. *Educational Review*, *67*, 35–63. doi:10.1080/00131911.2013.813440

Lin, A. R., Lawrence, J. F., & Snow, C. E. (2015). Teaching urban youth about controversial issues: Pathways to becoming active and informed citizens. *Citizenship, Social and Economics Education*, *14*, 103–119. doi:10.1177/2047173415600606

Maloney, J., & Simon, S. (2006). Mapping children's discussions of evidence in science to assess collaboration and argumentation. *International Journal of Science Education*, *28*, 1817–1841. doi:10.1080/09500690600855419

Mancilla-Martinez, J. (2010). Word meanings matter: Cultivating English vocabulary knowledge in fifth-grade Spanish-speaking language minority learners. *TESOL Quarterly*, *44*, 669–699. doi:10.5054/tq.2010.213782

McDevitt, M., & Kiousis, S. (2006). *Experiments in political socialization: Kids voting USA as a model for civic education reform*. Medford, MA: The Center for Information and Research on Civic Learning & Engagement.

McIntosh, H., Hart, D., & Youniss, J. (2007). The influence of family political discussion on youth civic development: Which parent qualities matter? *PS: Political Science and Politics*, *40*, 495. doi:10.1017/s1049096507070758

Means, M. L., & Voss, J. F. (1996). Who reasons well? Two studies of informal reasoning among children of different grade, ability, and knowledge levels. *Cognition and Instruction*, *14*, 139–178. doi:10.1207/s1532690xci1402_1

Michaels, S., O'Connor, C., & Resnick, L. B. (2008). Deliberative discourse idealized and realized: Accountable talk in the classroom and in civic life. *Studies in Philosophy and Education*, *27*, 283–297. doi:10.1007/s11217-007-9071-1

Miller, W. E., Miller, A. H., & Schneider, E. J. (1980). *American national election studies data sourcebook*. Cambridge, MA: Harvard.

Milstein, T. (2005). Transformation abroad: Sojourning and the perceived enhancement of self-efficacy. *International Journal of Intercultural Relations*, *29*, 217–238. doi:10.1016/j.ijintrel.2005.05.005

Misco, T., & Patterson, N. C. (2007). A study of pre-service teachers' conceptualizations of academic freedom and controversial issues. *Theory & Research in Social Education*, *35*, 520–550. doi:10.1080/00933104.2007.10473349

National Council for the Social Studies. (2013). *The College, Career, and Civic life (C3) Framework for social studies state standards*. Silver Spring, MD: Author.

Nussbaum, M. E., & Bendixen, L. D. (2003). Approaching and avoiding arguments: The role of epistemological beliefs, need for cognition, and extraverted personality traits. *Contemporary Educational Psychology*, *28*, 573–595. doi:10.1016/s0361-476x(02)00062-0

Nystrand, M., Gamoran, A., & Carbonaro, W. (1998). *Towards an ecology of learning: The case of classroom discourse and its effects on writing in high school English and social studies*. Albany, NY: University at Albany, Center on English Learning & Achievement.

Pallant, J. (2007). *SPSS survival manual*. Berkshire, England: Open University Press.

Parker, W. C., & Hess, D. (2001). Teaching with and for discussion. *Teaching and Teacher Education*, *17*, 273–289. doi:10.1016/S0742-051X(00)00057-3

Sadler, T. D., Chambers, F. W., & Zeidler, D. L. (2004). Student conceptualizations of the nature of science in response to a socioscientific issue. *International Journal of Science Education*, *26*, 387–409. doi:10.1080/0950069032000119456

Schulz, W., Ainley, J., Fraillon, J., Kerr, D., & Losito, B. (2010). *ICCS 2009 international report: Civic knowledge, attitudes, and engagement among lower-secondary school students in 38 countries*. Amsterdam, The Netherlands: International Association for the Evaluation of Educational Achievement.

SERP Institute. (2015). *Word Generation: Adolescent literacy*. Washington, DC: Author. Retrieved from http://serpinstitute.org/areas-of-work.html

Snow, C. E. (2010). Academic language and the challenge of reading for learning about Science. *Science, 328*(5977), 450–452. http://doi.org/10.1126/science.1182597

Snow, C. E., Lawrence, J. F., & White, C. (2009). Generating knowledge of academic language among urban middle school students. *Journal of Research on Educational Effectiveness*, *2*, 325–344. doi:10.1080/19345740903167042

Steiner, S., Brzuzy, S., Gerdes, K., & Hurdle, D. (2003). Using structured controversy to teach diversity content and cultural competence. *Journal of Teaching in Social Work*, *23*, 55–71. doi:10.1300/j067v23n01_05

Thórisdóttir, H., & Jost, J. T. (2011). Motivated closed-mindedness mediates the effect of threat on political conservatism. *Political Psychology*, *32*, 785–811. doi:10.1111/j.1467-9221.2011.00840.x

Torney-Purta, J., Lehmann, R., Oswald, H., & Schulz, W. (2001). *Citizenship and education in twenty-eight countries: Civic knowledge and engagement at age fourteen*. Amsterdam, The Netherlands: International Association for the Evaluation of Educational Achievement.

Vancouver, J. B., Thompson, C. M., & Williams, A. A. (2001). The changing signs in the relationships among self-efficacy, personal goals, and performance. *Journal of Applied Psychology*, *86*, 605–620. doi:10.1037/0021-9010.86.4.605

Venville, G. J., & Dawson, V. M. (2010). The impact of a classroom intervention on grade 10 students' argumentation skills, informal reasoning, and conceptual understanding of science. *Journal of Research in Science Teaching*, *47*, 952–977. doi:10.1002/tea.20358

Verba, S., Schlozman, K. L., & Brady, H. E. (1995). *Voice and equality: Civic voluntarism in American politics*. Harvard, MA: Harvard University Press.

Vercellotti, T., & Matto, E. (2013, February). *The role of media use in the classroom and at home in improving political knowledge*. Paper presented at the 2013 APSA Teaching and Learning Conference, Long Beach, CA.

Wray-Lake, L., & Syvertsen, A. K. (2011). The developmental roots of social responsibility in childhood and adolescence. *New Directions for Child and Adolescent Development*, *2011*, 11–25. doi:10.1002/cd.308

Zembylas, M., & Kambani, F. (2012). The teaching of controversial issues during elementary-level history instruction: Greek-Cypriot teachers' perceptions and emotions. *Theory & Research in Social Education*, *40*, 107–133. doi:10.1080/00933104.2012.670591

Zorn, T. E., Roper, J., Broadfoot, K., & Weaver, C. (2006). Focus groups as sites of influential interaction: Building communicative self-efficacy and effecting attitudinal change in discussing controversial topics. *Journal of Applied Communication Research*, *34*, 115–140. doi:10.1080/00909880600573965

ABOUT THE AUTHORS

ALEX R. LIN is a Postdoctoral Research Fellow in the School of Education at the *University of California, Irvine*, Irvine, CA 92697. He can be contacted at alin13@uci.edu.

JOSHUA F. LAWRENCE is an Assistant Professor in the School of Education at the *University of California, Irvine*, Irvine, CA 92697. He can be contacted at jflawren@uci.edu.

CATHERINE E. SNOW is the Patricia Albjerg Graham Professor at the Harvard Graduate School of Education at *Harvard University*, Cambridge, MA 02138. She can be contacted at catherine_snow@gse.harvard.edu.

KAREN S. TAYLOR is a Ph.D. Student in the School of Education at the *University of California, Irvine*, Irvine, CA 92697. She can be contacted at taylorks@uci.edu.