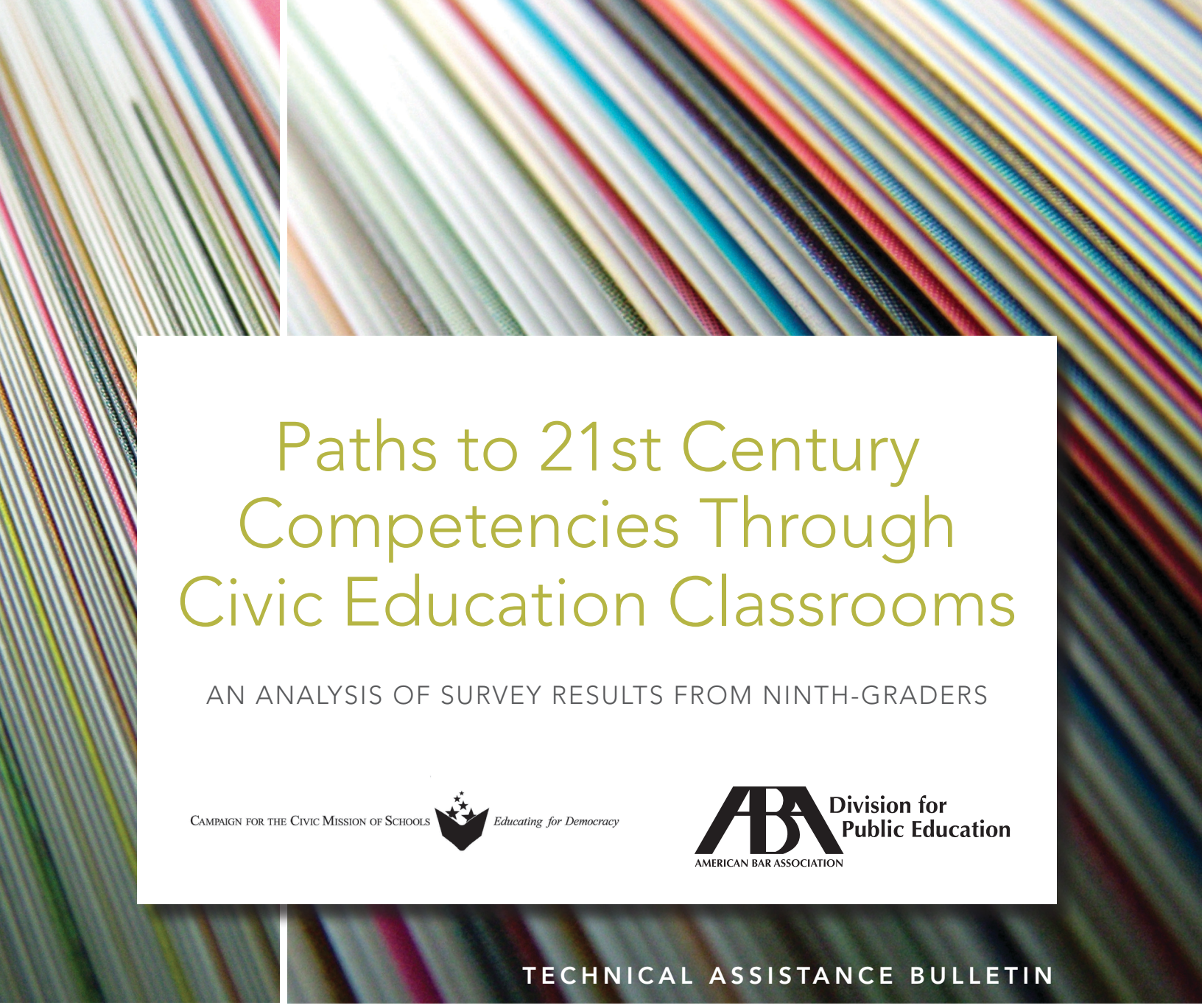


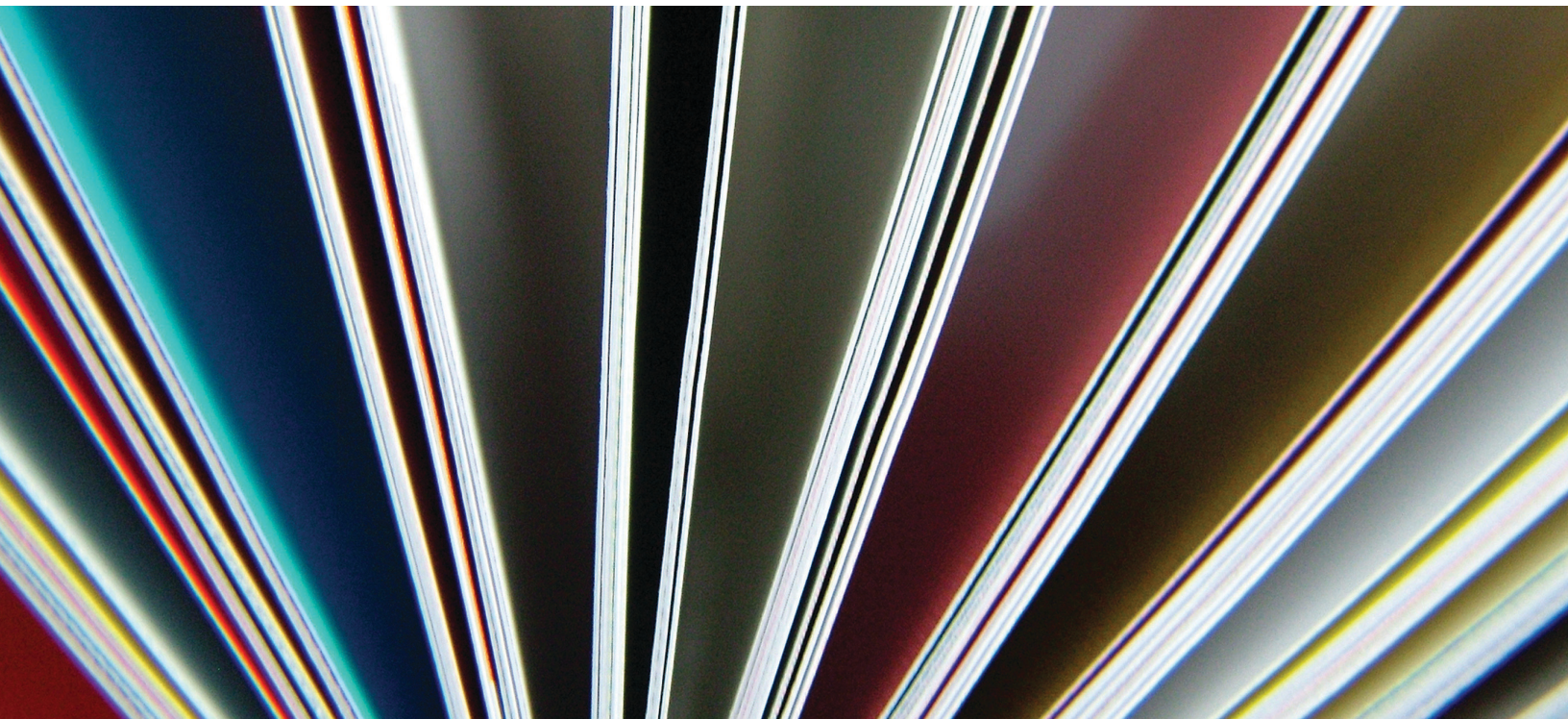
Paths to 21st Century Competencies Through Civic Education Classrooms

AN ANALYSIS OF SURVEY RESULTS FROM NINTH-GRADERS

Campaign for the Civic Mission of Schools *Educating for Democracy*

ABA Division for Public Education
American Bar Association

TECHNICAL ASSISTANCE BULLETIN



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DEPARTMENT OF HUMAN DEVELOPMENT
UNIVERSITY OF MARYLAND

A report commissioned by the American Bar Association Division for Public Education and the Campaign for the Civic Mission of Schools Consortium
Silver Spring, MD

October 2009

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THE REPORT IN BRIEF

Civic education, especially when it is interactive and involves discussion of current issues, is an important way to develop the skills that young Americans need to succeed in the 21st Century workforce. Students who experience interactive discussion-based civic education (either by itself or in combination with lecture-based civic education) score the highest on "21st Century Competencies," including working with others (especially in diverse groups) and knowledge of economic and political processes. Students who experience neither interactive nor lecture-based civic education have the lowest scores on all of the 21st Century competencies examined. This group, which comprises about one-quarter of all American students, shows not only low levels of knowledge but also a relatively low level of willingness to obey the law.

INTRODUCTION

Interest is high on the part of business leaders, as well as the general public, in the competencies that young people will need to thrive in an economy that is rapidly changing, global in scope, and technology driven. Educators are urged to ensure that young people acquire 21st Century skills and competencies by the time they leave school.

Lists of these competencies have been formulated with a high level of consensus across groups. In addition to basic skills in reading and mathematics, they include, for example:

- ★ basic knowledge of economic and political processes;
- ★ skill in understanding what is presented in the media;
- ★ the ability to work well with others, especially diverse groups;
- ★ positive attitudes about working hard and obeying the law;
- ★ creativity and innovation.

Educators are beginning to mobilize in support of these competencies viewed in an integrated way. However, a worrisome gap exists in research providing an evidence base about the ways students gain these competencies. Considerable strides are being made in designing assessments of these competencies using 21st Century ICT methods, but versions suitable for widespread use are several years in the future. The analysis of existing data collected from students in large scale assessments can both provide a timely set of findings and suggest content that should be included in future assessment efforts.

The Campaign for the Civic Mission of Schools (CMS), a consortium of 50 organizations organized in 2004 to implement and evaluate promising practices in this area, is in a unique position to spearhead program development for 21st Century competencies. In 2008 this organization accepted the challenge to identify existing research data in this area and support its timely analysis.

THE EVIDENCE ON WHICH THIS REPORT IS BASED

CMS chose to utilize data from the IEA Civic Education Study (CIVED), which had been collected from a nationally representative sample of 14-year-olds in 1999 in the United States (the cohort that is 24 years of age in 2009). This analysis provides the starting point of an evidence base for 21st Century competencies.

The IEA CIVED data set includes rigorously designed measures of 21st Century competencies involving knowledge, behavior, and attitudes. The competencies are media literacy, economic knowledge, experiences with cooperative groups and individuals with diverse views, learning about other countries, support for minorities' rights, a habit of reading the news media, a sense of one's ability to effectively take part in discussions, and the willingness to work hard and to obey the law. The data set also includes a measure of students' intention to complete only high school or to drop out before graduation.

Using the IEA CIVED data set enabled researchers to compare four groups based on the type of civic education experienced (see Figure 1): a group that has experienced only lecture-based civic education, a group that has experienced only interactive discussion-based civic education, a group that has experienced both lecture-based and interactive discussion-based civic education, and a group that has experienced neither lecture-based nor interactive discussion-based civic education.

Figure 1. Educational groups based on the type of civic education experienced

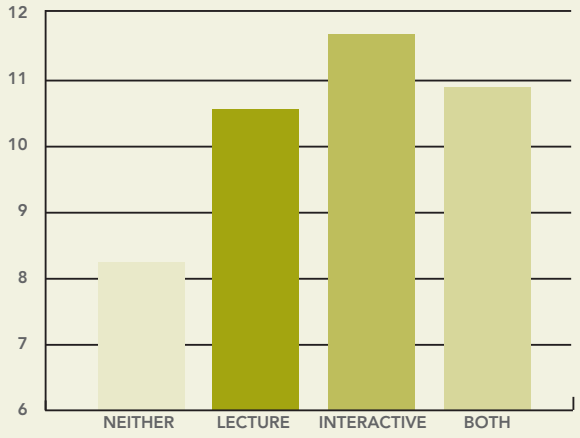
		Open Class Climate Scale: LOW	Open Class Climate Scale: HIGH
Traditional Teaching Scale	LOW	Neither	Interactive
	HIGH	Lecture	Both

RESULTS OF THE ANALYSIS

The students who experienced interactive discussion-based civic education (either by itself or in combination with lecture-based education) had the highest scores on all the 21st Century competencies when the four groups were compared. Examples are found in Figures 2 and 3.

The students who experienced neither type of civic education had the lowest scores on all the 21st Century competencies. This group showed not only low levels of knowledge but also a relatively low level of willingness to obey the law (shown in Figure 4 on the following page) and lower educational aspirations.

Figure 2. Level of economic knowledge by educational group[a]



[a] Economic knowledge is a 12-item IRT scale measuring knowledge of implicit and explicit economic content, such as an understanding of labor unions and the free market.

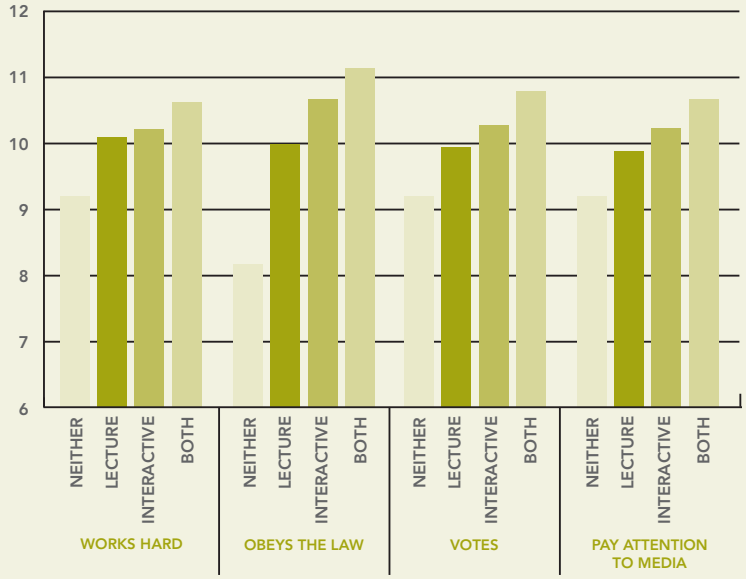
Note: Details concerning the statistical significance of group differences are in the full report.

Figure 3. Level of school experience with diversity, cooperation, and learning about other countries, by educational group[a]

[a] School experience is measured with single items about whether students have learned in school to understand people who have different ideas, to cooperate in groups with other students, and to be concerned about what happens in other countries.

Note: Details concerning the statistical significance of group differences are in the full report.

Figure 4. Norms of social responsibility by educational group[a]

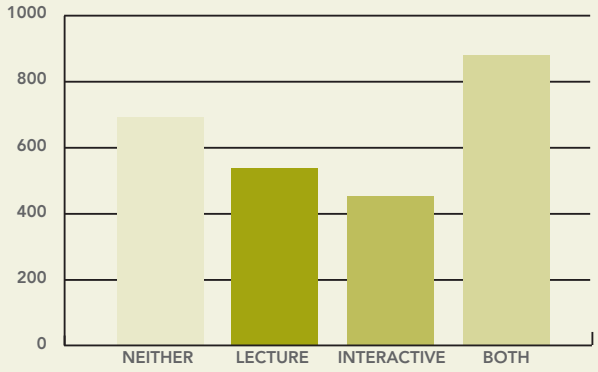


[a] Norms of social responsibility are assessed with single items measuring the extent of students' agreement that a good adult citizen should work hard, obey the law, vote, and pay attention to issues in the media.
Note: Details concerning the statistical significance of group differences are in the full report.

The full report contains comparisons between these four educational groups, showing similar results on media literacy, efficacy in discussion participation, expected educational attainment, and attitudes toward minorities. The students who experienced only lecture-based civic education were sometimes equal but never superior to the interactive discussion-based education group in achievement of 21st Century competencies when the groups were compared.

The largest proportion of students reported experiencing a combination of lecture-based and interactive discussion-based civic education. However, more than one quarter experienced neither type of civic education and are likely to be disadvantaged in their futures as workers as well as citizens.

Figure 5. Number of students in the four civic education groups



CONCLUDING REMARKS

This analysis provides evidence that can serve to enlist individuals and organizations promoting civic education in the task of fostering adolescents' 21st Century skills and competencies. Educators who wish to strengthen their programs should focus on enhancing interactive discussion-based teaching methods with a strong content focus as part of every student's educational experience. This will benefit both the individual's preparation as a citizen grounded in knowledge of democratic principles and also the individual's preparation as a worker who understands economic processes and can collaborate with a diverse range of co-workers.

This is the Executive Summary to the report *Paths to 21st Century Competencies Through Civic Education Classrooms: An Analysis of Survey Results from Ninth-Graders*. The full report can be downloaded from the Web sites for the American Bar Association Division for the Public Education (www.abanet.org/publiced) or the Campaign for the Civic Mission of Schools (www.civicmissionofschools.org).

INTRODUCTION

Ideas in education that capture the attention of policymakers, administrators, teachers, the business community, *and* the public often have relatively modest beginnings. The idea of a holistic or integrated approach to understanding the set of competencies that young people need to acquire during their formative years as they prepare to enter the workforce is such an idea. Considerable time is needed to list and define these competencies, to foster support from various constituencies, and then to implement and evaluate targeted programs of formal and informal education.

The development of a research base for these educational programs often lags behind the other tasks. This report attempts to accelerate that process by providing empirical data about 21st Century skills (or Competencies, as they are often called) and about the experiences in formal education that foster their attainment. In particular, the analysis here relates the achievement of these competencies to the experiences in civic education classrooms among a nationally representative sample of ninth-grade students in the United States.

BACKGROUND FOR THE CURRENT INTEREST IN 21ST CENTURY SKILLS AND COMPETENCIES

Over the last two decades there have been initiatives both raising and responding to concerns about the preparation of young people to perform well in the world of work. The 1983 report to the secretary of education entitled *A Nation at Risk: The Imperative for Educational Reform* began as follows: "Our nation is at risk. Our once unchallenged preeminence in commerce, industry, science, and technological innovation is being overtaken by competitors throughout the world." The report lamented the education system's failures in preparing the next generation of workers with the competencies and values necessary to retain a competitive position for the United States.

In the early 1990s, the Department of Labor spearheaded an initiative resulting in ***A SCANS Report for America 2000***. SCANS (Secretary's Commission on Achieving Necessary Skills) proposed a three-part conceptualization of skills thought to be important in the next (now, current) century. These included skills in reading, writing, mathematics, listening, and speaking; thinking skills such as decision making, problem solving, visualization, and reasoning; and personal qualities such as self-management, responsibility, and integrity. This material is still available on the Department of Labor's Web site along with suggested ways to teach these skills.

The term "21st Century Skills" was initially proposed by the ***Partnership for 21st Century Skills*** in 2006 and has been addressed by several groups using definitions that differ in some respects from each other. However, there is a common core that includes:

- ★ basic skills in reading and mathematics;
- ★ skills in interpreting information (sometimes called critical thinking or problem solving), including literacy in understanding information and opinions presented in the media;
- ★ knowledge of the economic system;
- ★ global awareness;
- ★ support for the activities associated with good citizenship (including responsibilities such as obeying the law and voting);
- ★ skills in working with others (such as the readiness and ability to clearly express opinions, collaborative group skills, and the ability to work in culturally diverse teams;
- ★ the ability to be productive (including a sense of personal responsibility to work hard, efficaciously, and ethically);
- ★ information and communications technology (ICT) literacy;
- ★ creativity and innovation (Kay, 2009; Partnership for 21st Century Skills documents retrieved from www.21stcenturyskills.org dated 2006 through 2009).

Representatives of the Partnership have emphasized a "holistic" and interconnected approach rather than a segmented view of these multi-dimensional competencies and of the educational programs intended to support them. This initiative has also been associated with several efforts to develop curricular guidelines in subject areas such as Social Studies and English. The effort has not been without its detractors, who often argue that this approach neglects reading, writing, and mathematics to make room for these more ambiguous skills. The idea of an integrated or cross-cutting set of competencies (and a set that goes beyond or integrates what is taught in different subject areas) has clearly caught the attention of the public, the business community, and policymakers, however.

In 2009, an initiative centered at the University of Melbourne in Australia entitled the ***Assessment and Teaching of 21st Century Skills*** was announced. It has obtained funds from major corporations for a three-year project to do the following:

- ★ Specify in measurable terms high-priority skills and understanding needed by productive and creative workers and citizens of the 21st Century;
- ★ Mobilize international educational, political, and business communities to make the transformation of educational assessment and, hence, instructional practice a global priority;
- ★ Develop and pilot new assessment methodologies;
- ★ Examine and recommend innovative ICT-enabled, classroom-based learning environments and formative assessment that support the

development of 21st Century skills. (Assessment & Teaching of 21st Century Skills documents retrieved from www.atc21s.org.)

This initiative has established working groups, including one that is currently preparing a matrix including ten competencies (the term currently preferred to skills) that overlaps parts of the Partnership's list. The Atc21s group plans to develop ICT-based assessments that will take several years to become operational. The initial directions for developing 21st Century measures for assessing 21st Century competencies in the future are described by Silva (2009).

THE INITIATION OF THE PLAN FOR THE CURRENT REPORT

In the early fall of 2008 the ***Campaign for the Civic Mission of Schools*** (CMS), a coalition of more than 50 organizations committed to improving the quality and quantity of civic learning in American schools, began to debate the contribution of civic-related education to a range of outcomes going beyond political knowledge, volunteering, or voting. The work of this group is based on a policy paper entitled *The Civic Mission of Schools Report*, which includes a list of promising practices derived from a consensus process involving leaders in the field. Because much of CMS's work focuses on a relatively holistic approach to educational improvement, 21st Century skills seemed an appropriate area to explore. A strategic planning effort for CMS reinforced the group's interest in 21st Century skills and competencies. This planning process enumerated the following as outcomes of interest: media literacy, economic as well as civic knowledge, sense of social responsibility, experience in cooperating with diverse groups, and global awareness. This was based on the Partnership's list of the components of 21st Century skills, which was the best known

enumeration in late 2008. It had served, for example, as the basis for surveys of employers and of the public (*Conference Board*, 2006; *Reading Today Editors*, 2008).

In late 2008, a search conducted in electronic publication indexes for "21st Century skills" and "workplace skills" retrieved only articles in periodicals such as *Education Week*. There was considerable research about problem solving and economic literacy as individual competencies, but no survey or other empirical study of 21st Century skills had analyzed measures of a range of these competencies from a single sample of young people. As long as this gap in research evidence exists, it is impossible to make definitive statements about these skills and competencies considered in an integrated way or to draw even preliminary conclusions about the types of educational programs that might foster them.

The senior author of this report proposed to the CMS that a secondary analysis of an existing data set could begin to fill this gap in research on students. An examination of the outcomes that had been tested in the 1999 IEA Civic Education Study (CIVED) on a nationally representative sample of about 2,800 ninth-graders in the United States showed that this data set had rigorously developed measures of many of the outcomes included in the enumerations of 21st Century skills and competencies (Torney-Purta and Amadeo, 2004; Torney-Purta, Lehmann, Oswald and Schulz, 2001).[1] In fact, the only competencies that appeared on the Partnership's list that had not been included in the CIVED test or survey were math skills, ICT literacy, and creativity/innovation.

In addition to measures of these competencies, the IEA CIVED data also included measures pertaining to the type of education these ninth-graders had received, especially focused on the classrooms where civic-related education took place (including classes in civics, history, and social studies). In particular, the IEA CIVED instrument had included a reliable scale measuring student perceptions of a focus on lectures or factual material in their classes and the memorization of facts and dates. (This scale was called "traditional teaching.") A separate scale had been included measuring perceptions of a focus on respectful discussion of issues, including controversial issues, in class. (This scale was called "open class climate for discussion.") These were not conceptualized as mutually exclusive types of educational experiences. Both approaches were seen as relatively independent modes of civic-related education and both had been separately identified as promising practices in the CMS report.

The ninth grade, sampled in the IEA Civic Education Study, is a particularly appropriate developmental period to examine these competencies. Major reports about education, such as *Turning Points 2000: Educating Adolescents in the 21st Century* sponsored by the Carnegie Corporation of New York, point to the period of early adolescence as vital for promoting excellence and equity in a range of knowledge, skills, and attitudes (Jackson and Davis, 2000). Further, the ninth-graders tested by IEA in 1999 were about 24 years old in the year 2009. In other words, this is the cohort of young adults who has recently entered the workforce.

This existing high-quality data set from the IEA Civic Education Study provided an opportunity to build the foundations for research on educational approaches to foster 21st Century skills without the lead time necessary to develop and validate a set of instruments, draw a sample, administer the instruments and then conduct an analysis. In other words, without waiting for the development of 21st Century assessment tools, we are able to gain considerable insight about 21st Century competencies by analyzing the IEA CIVED data set. This can guide further conceptualizations, the development of educational programs including in-service training for teachers, and the future development of technologically sophisticated assessment tools by groups with these interests.

1. A paper presented to the commission that issued *A Nation at Risk* and summarized in an article by Torney-Purta and Schwille (1986) used a previous IEA Civic Education Study's data for a similar purpose.

A DESCRIPTION OF THE IEA CIVIC EDUCATION STUDY AND ITS DATA

The Civic Education Study was conducted in 1999 by the International Association for the Evaluation of Educational Achievement (IEA), a consortium of governmental agencies and research institutions founded in 1959 for the purpose of conducting comparative education studies. CIVED is a cross-national study of approximately 90,000 adolescents aged 14 conducted in 28 countries, with summary data reported in Torney-Purta, Lehmann, Oswald, and Schulz (2001); 2,811 14-year-olds were tested in the United States. A similar study was conducted with 17-year-olds (Amadeo et al., 2002). Two instruments were utilized in the study: a test (or assessment) and a survey. The test assessed students' knowledge of fundamental democratic principles (applied to national and international contexts) and skills in applying such knowledge (in reponse to prompts such as mock newspaper articles and editorial cartoons). The survey inquired about students' attitudes toward civic issues and responsibilities, conceptions of democracy and citizenship, experience with and understanding of issues related to diversity, and confidence in participating in the discussion of issues.

The administration of the assessment and survey to nationally representative samples of 14-year-olds took place in 28 countries in 1999. In the United States the data were collected from ninth-graders in October 1999. Students were given two hours during class to complete the assessment and survey. School administrators and teachers also answered surveys to provide supplemental information about teaching and schools. The sampling was conducted according to a procedure similar to that used in other IEA studies, such as the Trends in International Mathematics and Science Study (TIMSS) and the Progress in International Reading Literacy Study (PIRLS). Subsequent scale construction and data analysis techniques (e.g., confirmatory factor analysis [CFA] and item response theory [IRT]) are also comparable to methods used in these studies. The CIVED Study is different from TIMSS and PIRLS, however, in having a large number of scales for attitudinal outcomes as well as for knowledge outcomes.

A DESCRIPTION OF THE CURRENT STUDY

The sample of approximately 2,800 ninth-graders from the IEA Civic Education Study was analyzed to examine the relation between civic education experience and 21st Century skills or competencies. Individual items and scales from CIVED were used to operationalize these competencies. Measures from both the test of student knowledge and the survey of student attitudes were utilized. Unless otherwise stated, for this analysis all items and scales have been standardized to have a mean of 10 and a standard deviation of 5 in the United States to facilitate comparisons.

KNOWLEDGE-BASED COMPETENCIES FROM THE CIVED TEST

Two of the measures relevant to 21st Century skills and competencies come from combinations of questions drawn from the 38-item assessment measuring aspects of students' knowledge. The original items were multiple-choice and students were given four response options. The items were then coded to reflect whether they were correctly or incorrectly answered. The overall reliability levels (for the entire test and for these examined subscales) were strong.

Economic Knowledge:[2] This 12-item scale from the CIVED assessment captures students' explicit and implicit content knowledge of economics. Among the concepts covered were taxes, labor unions, the price of goods, multinational corporations, free market, and the economic effect of closing a polluting factory. Mean (average) scores on this scale are reported.

Media Literacy Skills:[3] This scale is comprised of 13 test items asking students, for example, to draw inferences from a newspaper article, to interpret editorial cartoons, and to distinguish between statements of fact and opinion. No questions were asked about the Internet as a source of news. In 1998, when the questions were formulated to be suitable in 28 countries, most adolescents did not have access to this news source. The type of articles and editorial cartoons that appear in news sources on the Internet are quite similar to those in this test, however. Mean scores on this scale are reported.

BEHAVIORALLY-BASED COMPETENCIES FROM THE CIVED SURVEY

Six sets of items relevant to 21st Century skills and competencies come from the approximately 150 items measuring attitudes and behaviors in the student survey. The original items asked students to report their agreement with statements (strongly disagree to strongly agree) or the frequency with which they participated in a particular behavior (never to often) on a 4-point scale. Individual items as well as scales have been adjusted to have a mean of 10 and standard deviation of 5 in the United States; the one exception is expected educational attainment, which is expressed as a percentage of those intending to continue their education to a specific level. In this section we describe three sets of items related to behavior.

Following the News: The CIVED instrument includes two items asking students how often they read national news and international news in the newspaper. This is reported as a composite average of student responses to these two items.

Experience at School with Diversity, Cooperation, and Learning about Other Countries: The CIVED instrument includes three items asking students whether they have learned in school to understand people who have different ideas, to cooperate in groups with other students, and to be concerned about what happens in other countries. Mean scores on the three individual items are reported.

School Completion: Students were asked on the survey how many years of further education they expected to complete. This is reported as the percentage of students who said they were likely to either drop out of high school (i.e., ninth-graders expecting to complete 0, 1, or 2 additional years of education beyond ninth grade) or to complete high school but not pursue further degrees (i.e., ninth-graders expecting to complete 3 to 4 additional years of school).

2. An IRT scale was originally developed using 22 items with explicit economic content administered to IEA samples of 17-year-olds in 15 countries in 2000 (Amadeo et al., 2002). Since the United States and several other countries did not participate in the part of the study where 17-year-olds were tested, the scores of 14-year-olds were estimated with standard IRT methodology using anchor items that linked the two tests; 12 items with explicit and implicit economic content were included (Husfeldt, 2003).

3. A 13-item IRT scale developed from the CIVED assessment by Schulz and Sibberns (2004). Skills items were differentiated from content knowledge items based on a confirmatory factor analysis.

ATTITUDINALLY-BASED COMPETENCIES FROM THE CIVED SURVEY

In this section we describe the three sets of items related to attitudes. The response scales followed the same pattern as those for behaviorally-based skills and competencies detailed in the introduction to the previous section.

Positive Attitudes Toward the Rights of Ethnic Minorities:[4] These attitudinal items from CIVED ask students about their attitudes toward equal educational and job opportunities for all ethnic groups and about whether students should learn to respect people of diverse ethnicities. Mean scores on this four-item scale are reported.

Sense of Efficacy in Discussing Issues:[5] These attitudinal items from CIVED ask students how efficacious or confident they feel when they are discussing their opinions about issues with other students. Mean scores on this four-item scale are reported.

Norms of Social Responsibility: The CIVED instrument includes four items asking students whether they believe that the good adult citizen should work hard, obey the law, vote, and pay attention to issues covered in the media. Mean scores on the four individual items are reported.

DESCRIPTIVE AND MULTILEVEL ANALYSES

This report presents two kinds of analysis. First, we present differences between students who are above and below the median on two types of educational experiences; a traditional lecture-focused education and an interactive discourse-focused education (assessed by the two scales whose items are presented below). The outcomes in these analyses are the eight sets of 21st Century competencies described above. To look at group differences (based on the type of civic education experienced), we display graphs of the mean scores for four distinct educational groups.

Below each graph is a summary of the results of statistical tests examining differences in group means. We utilized analysis of variance (ANOVA), which tests for significant differences between group means (in conjunction with partitioning the observed variance). In contrast to the more familiar t-test, which only allows for the comparison of two groups, ANOVA allows for the comparison of more than two groups (in this case four groups). Note that we also conducted analyses of covariance (ANCOVAs) controlling for student Socioeconomic Status (SES) and the results were essentially the same.

The second analysis utilizes a multilevel regression procedure (hierarchical linear modeling [HLM]) to test in a more statistically sophisticated way whether traditional lecture-based civic education and interactive discourse-based educational experiences predict students' 21st Century competencies.

Two scales were used to examine the kind of civic education students had experienced: an interactive discourse-based education or a traditional lecture-based education. *Openness of classroom climate* is the measure of a discourse-based education.[6] This six-item scale assesses the degree to which students have been encouraged to express their own opinions, and to understand the opinions of others, in their civics, history, or social studies classroom. The items for the open classroom climate for discussion scale are

- ★ Teachers respect our opinions and encourage us to express them during class.
- ★ Students feel free to express opinions in class even when their opinions are different from most of the other students.
- ★ Students are encouraged to make up their own minds about issues.
- ★ Students feel free to disagree openly with teachers about political and social issues during class.
- ★ Teachers encourage us to discuss political or social issues about which people have different opinions.
- ★ Teachers present several sides of an issue when explaining it in class.

4. A 4-item IRT scale developed from the CIVED data by Husfeldt, Barber and Torney-Purta (2005).
5. A 4-item IRT scale developed from the CIVED data by Husfeldt et al. (2005).
6. A 6-item IRT scale developed from the CIVED data by Schulz & Sibberns (2004).

Students were split into two groups based on the median scale score; those who had experienced a low class climate for discourse (i.e., they had a score below the median) and those who had experienced a high climate for discourse (i.e., they had a score equal to or above the median).

The other scale used to examine the type of civic education experienced was a five-item scale of *traditional teaching* experienced in the civics, history, or social studies classroom. The items for the traditional scale are

- ★ Teachers lecture and the students take notes.
- ★ Teachers place great importance on learning facts or dates when presenting history or political events.
- ★ Teachers require students to memorize dates or definitions.
- ★ Memorizing dates and facts is the best way to get a good grade from teachers in these classes.
- ★ Students work on material from the textbook.

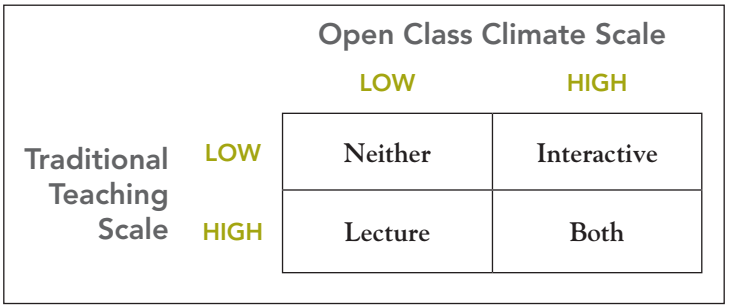
Again the median scale score was used to split students into two groups; those who had experienced low levels of traditional education and those who had experienced high levels.

Recognizing that discourse and lecture are not mutually exclusive activities, these two types of civic education were examined individually and in combination to identify educational groups based on the extent of their discourse- and lecture-based educational experiences. Specifically, responses on a scale measuring students' experience of an open class climate and responses on a scale measuring exposure to traditional teaching were used to create four educational groups, those who received

- ★ *neither* type of civic education,
- ★ civic education with a *lecture* focus predominating,
- ★ civic education with an *interactive* focus predominating,
- ★ civic education with *both* a lecture focus and an interactive focus.

See Figure 1 for an illustration of how these groups were formed.

Figure 1. Educational groups based on the type of civic education experienced



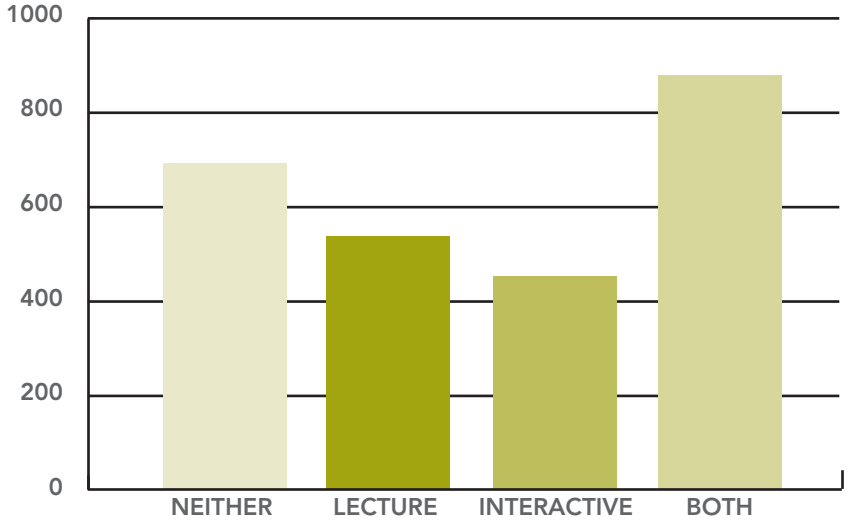
RESULTS FROM THE CURRENT STUDY: DESCRIPTIVE ANALYSIS

CIVIC EDUCATION GROUPS

The number of students in each educational group is found in Figure 2 on page 18.[7] The largest group of students experienced *both* traditional lecture-based education and an interactive discourse-based education (852 students, or 33 percent of the sample). The second largest group experienced *neither* lecture nor interactive teaching (686 students, or 27 percent of the sample); they are not experiencing traditional classrooms in which content is the focus, nor are they experiencing interactive classrooms in which students and teachers discuss and work through issues together. Perhaps they are experiencing some type of education that has not been captured in these questions. More likely, their experience with civic education, history, or social studies classes is infrequent or poorly organized, so that neither lecture/textbook-based nor interactive/discussion-based education characterizes their classrooms. The remainder of the students experience *only*

7. When students who had omitted several of the relevant questions were removed from the analysis, the number of student respondents was 2,545.

Figure 2. Number of students in the four civic education groups



lecture-based education (547 students, or 21 percent) or *only interactive discourse-based* education (460 students, or 18 percent).

Before examining how the type of civic education experienced related to the levels of 21st Century competencies we looked at the characteristics of students in each group (Table 1). There are more females in the Interactive and Both groups, while there are more males in the group that reports neither type of civic education. There are more white students in each group because there are more white students in the entire sample. However, the proportion of white students is relatively higher in the groups that experience either interactive civic education only or both types of education. Black students and immigrant students are *less* likely to experience an interactive education. There are substantial group differences in student SES. Students in the Interactive group are the most affluent, followed by students in the Both and Lecture groups. Students who experience neither kind of civic education are likely to be those of below-average SES.[8]

Table 1. Demographic characteristics associated with civic education groups

	NEITHER	LECTURE	INTERACTIVE	BOTH
FEMALE	41%	49%	58%	59%
MALE	59%	51%	42%	41%
WHITE	59%	62%	69%	67%
BLACK	13%	13%	6%	11%
LATINO	13%	14%	14%	11%
ASIAN	7%	5%	6%	6%
MULTIRACIAL	6%	4%	4%	3%
IMMIGRANT	12%	10%	8%	11%
NON-IMMIGRANT	88%	90%	92%	89%
SES	-.09	.08	.28	.15

Note: For gender, race, and immigrant status, the percentage of students in each educational group is given. For SES, the average SES of students in each educational group is given (M = 0, SD = 1).

8. The SES measure includes questions about parental education level and literacy resources in the home.

EDUCATIONAL GROUPS AND KNOWLEDGE-BASED 21ST CENTURY COMPETENCIES

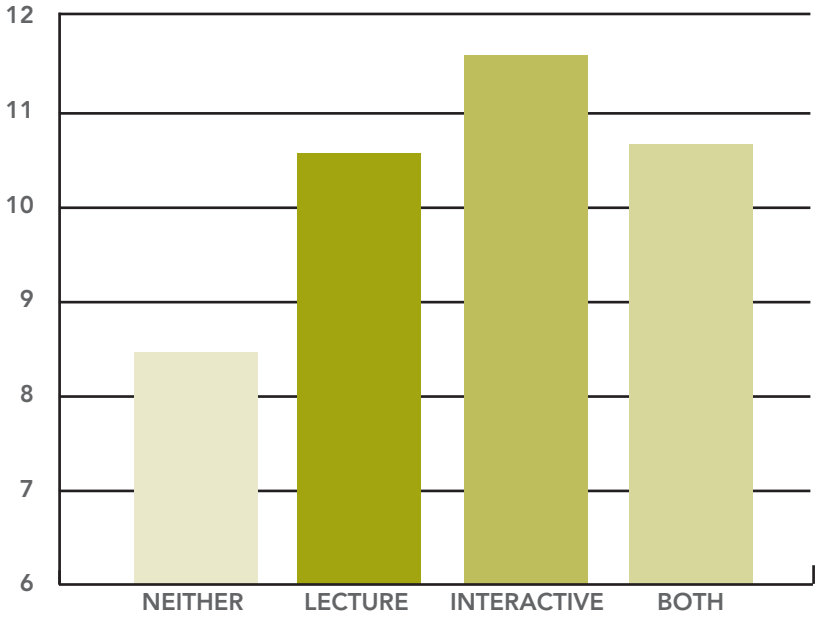
In this section we report group differences in knowledge-based 21st Century skills and competencies based on a comparison of students according to which of the four civic education groups they were in. Results from ANOVAs are reported (including post-hoc tests).[9] See Figures 3 and 4 (page 20) for knowledge and skill levels for students in each educational group. All scales have been standardized to have a mean of 10 and standard deviation of 5 within the United States. The two knowledge-based outcomes examined are economic knowledge and media literacy skills.

The findings regarding group differences in ninth-graders' economic knowledge (Figure 3) and media literacy skills (Figure 4) are quite similar. Students who experience lecture-focused civic education, interactive civic education, or a combination of both have higher knowledge and skills than students who receive neither type of civic education. Specifically, students who do not have traditional civic education and who also do not have interactive civic education have knowledge and skill scores that are substantially lower than the mean of 10.

Students in the Interactive group also have higher economic knowledge and media literacy skills than students in the Lecture and the Both groups. Civic education with an interactive focus appears to be particularly important for students' acquisition of knowledge of economic issues and skill in analyzing the types of material that appear in media sources (such as print newspapers in 1999 and online news sources in 2009).

The pattern in the association between civic education and the knowledge-based 21st Century competencies suggests that interactive experiences involving discussion in the civic education classroom are important. The expression of views about political or social issues and exposure to the ideas of others appear to help students be more analytic about the information they possess and reinforce their understanding as they prepare to express their own opinions. Another consistent finding is that students who receive neither a lecture- or interactive-based civic education are the least prepared with the knowledge base required for productive work and informed citizenship in the 21st Century.

Figure 3. Level of economic knowledge by educational group[a]

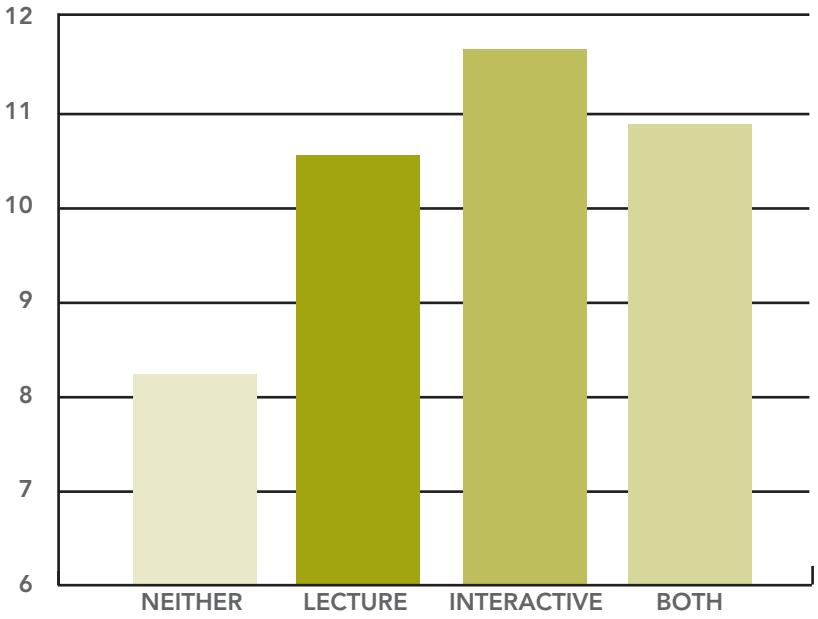


[a] Economic knowledge is a 12-item IRT scale measuring knowledge of implicit and explicit economic content, such as an understanding of labor unions and the free market.

Note: ANOVA results indicate that group differences are statistically significant. Lecture, Interactive, and Both are all greater than Neither. Also, Interactive is greater than Lecture and Both.

9. ANOVA stands for analysis of variance; this statistical procedure allows us to test whether overall group differences exist. Post-hoc tests indicate which specific groups differ significantly from each other.

Figure 4. Level of media literacy skills by educational group[a]



[a] Media literacy skills is a 13-item IRT scale measuring skill in interpreting media-related and political materials.
Note: ANOVA results indicate that group differences are statistically significant. Lecture, Interactive, and Both are all greater than Neither. Also, Interactive is greater than Lecture and Both.

EDUCATIONAL GROUPS AND BEHAVIORALLY-BASED 21ST CENTURY COMPETENCIES

There are group differences in the competencies that are related to students' behavior; see Figures 5–7 for differences between students in the four educational groups. These behavioral outcomes reflect the competencies necessary to succeed as effective workers and informed citizens. They include following national and international news, experiences in working with collaborative groups and understanding those with diverse views, and completing high school with aspirations for further education (rather than dropping out).

One indicator of preparation for adult life is whether young people pay attention to national and international current events. We find differences by educational group in this behavior (Figure 5). Students in the Both group report the highest level of news reading (about national and international topics), followed by students in the Interactive, Lecture, and Neither groups.

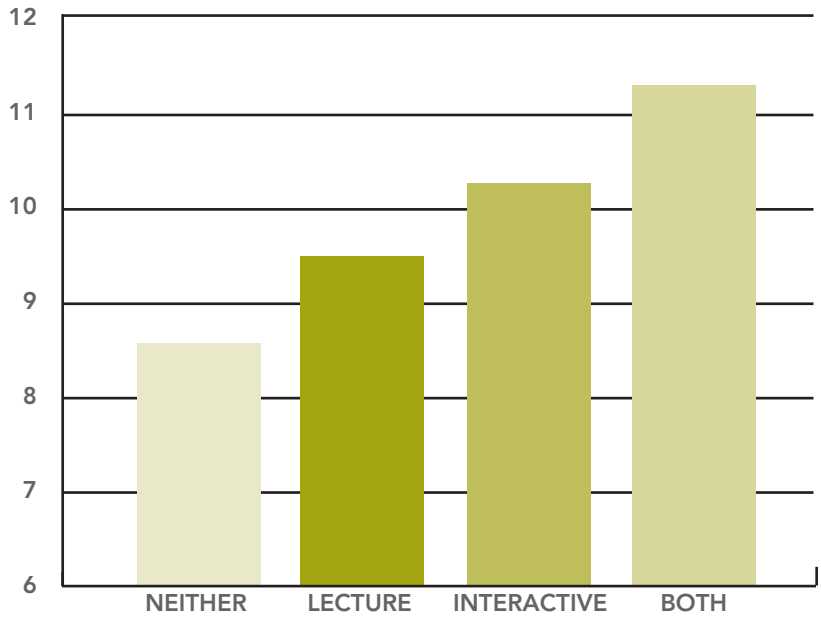
School experiences with diversity, cooperation, and learning about other countries are analogous to capacities that young adults need to draw upon in the workplace and in public settings. The type of civic education received relates to these competencies (Figure 6 on page 22). Those students who received Both interactive- and lecture-focused education report the greatest likelihood of having learned to understand people who have different ideas and learned to cooperate in groups, followed by students in the Interactive group, the Lecture group, and Neither group. Students in the Both and Interactive groups report more learning experiences pertaining to other countries.

Many of the skills and competencies valued in the workplace are taught in schools. Students who drop out of high school not only fail to receive the diploma required for many positions, but also cut short opportunities for experiences that facilitate the development of competencies useful in the workplace. There are significant differences by type of civic education received in students' expectation of dropping out of high school or completing a diploma without plans for further education (Figure 7 on page 22). Those students who receive Neither interactive- nor lecture-based civic education are more likely to have limited educational aspirations than students in the Lecture, Interactive, and Both education groups. Among students who received neither interactive- nor lecture-

based civic education, 24 percent reported that they will either drop out of school or complete only high school; this compares with 9 percent of the group receiving both types of civic education. Looking at those with the lowest educational aspirations, 5 percent of students in the Neither group (compared with 1 percent in the Both group and 2 percent in the other two groups) reported intentions to drop out of high school in the relatively near future.

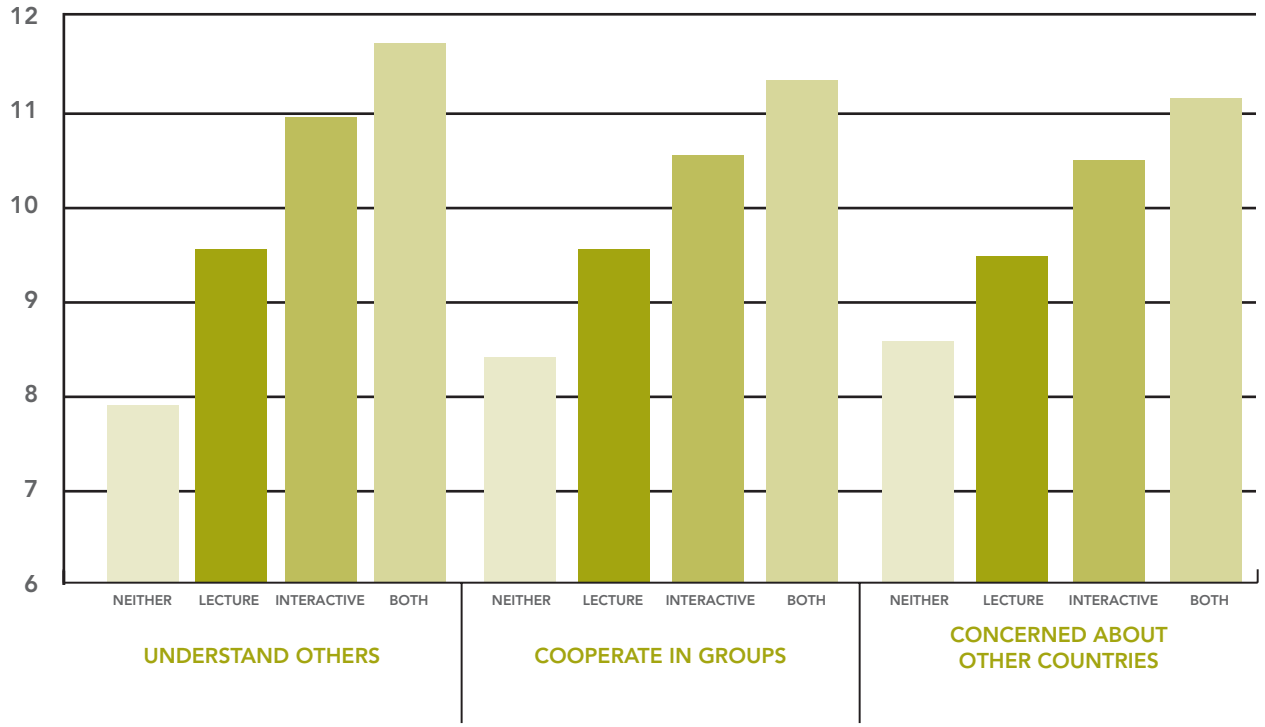
In summary, for the strictly knowledge-based competencies, receiving a civic education with an interactive focus was the most beneficial. Many in the business community would agree that knowledge is not the only asset that young people bring to the workplace, however. They bring experiences, comfort with a variety of people, and a sense of themselves and their role in society. The type of civic education that combines interactive- and lecture-based learning experiences is related to higher skills and competencies when the outcomes are behavioral in nature. Students who experience both types of civic education pay more attention to what is happening in the world around them and have more experiences in school related to diversity and cooperation. Interactive education is also valuable. However, students who are not exposed to interactive- or lecture-based civic education (i.e., in the Neither group) have the lowest level of behaviorally-based 21st Century competencies, including low expectations for educational attainment.

Figure 5. Extent of following the news by educational group[a]



[a] Following the news is a 2-item scale assessing the frequency of reading national and international news in the newspaper.
Note: ANOVA results indicate that group differences are statistically significant; all group means are significantly different from each other.

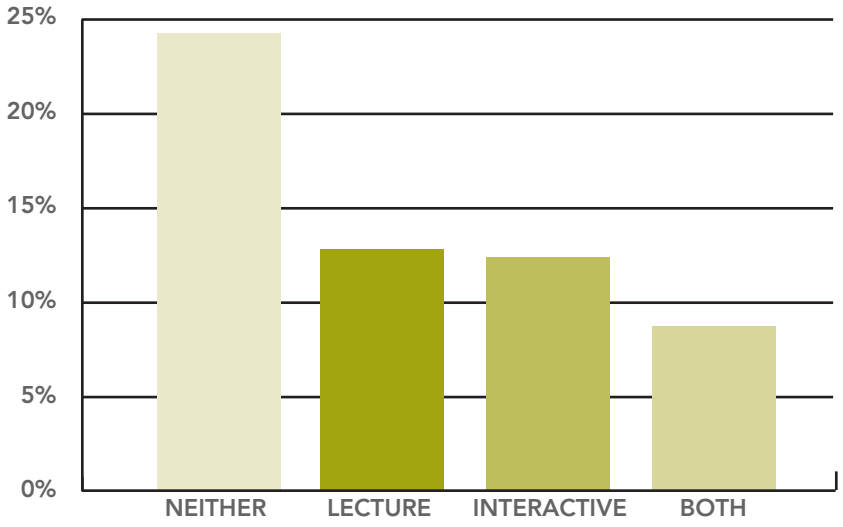
Figure 6. Level of school experience with diversity, cooperation, and learning about other countries, by educational group[a]



[a]School experience is measured with single items about whether students have learned in school to understand people who have different ideas, to cooperate in groups with other students, and to be concerned about what happens in other countries.

Note: ANOVA results indicate that group differences in "understand others" and "cooperate in groups" are statistically significant; all group means are significantly different from each other. ANOVA results indicate that group differences in "concerned about other countries" are statistically significant. Lecture, Interactive, and Both are all greater than Neither. Also, Interactive and Both are greater than Lecture.

Figure 7. Limited plans for educational attainment by educational group[a]



[a]School completion (educational attainment) is measured with a single item assessing students' expected years of further education. Graph shows percentage of students expecting to drop out or complete only through 12th grade.

Note: ANOVA results indicate that group differences in limited plans for school completion or attainment are statistically significant; Neither is greater than Lecture, Interactive, and Both.

EDUCATIONAL GROUPS AND ATTITUDINALLY-BASED 21ST CENTURY COMPETENCIES

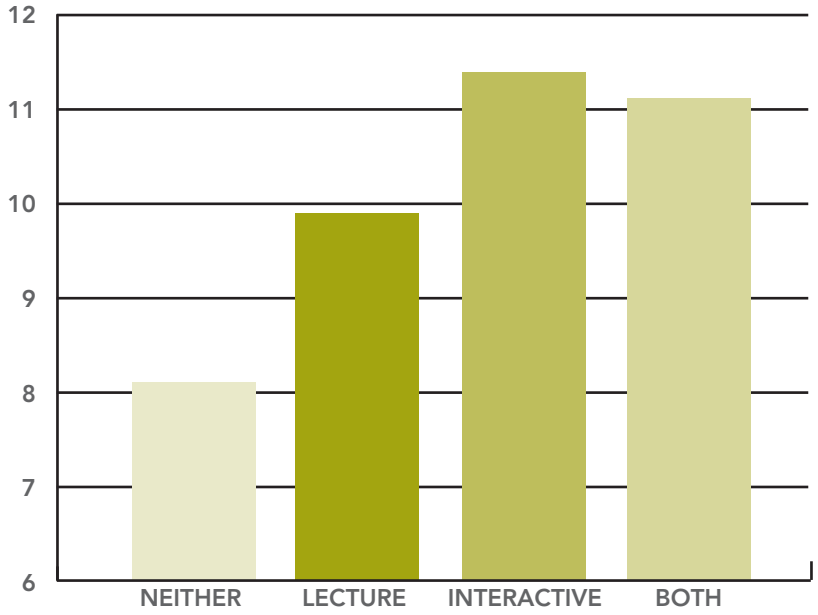
There are also group differences in the skills and competencies that are related to students' attitudes. These attitudinally-based 21st Century competencies include experiences and dispositions that will help young people succeed as effective workers and informed citizens. The outcomes include: positive attitudes toward ethnic minorities, sense of efficacy in one's ability to participate in issue-related discussions, and support for norms of social responsibility. See Figures 8–10 (on page 24–25) for the mean score on these outcomes for students in the four educational groups.

Having a positive attitude toward the rights of minorities indicates both personal openness to granting rights to others and an understanding of issues related to diversity. We find group differences in this attitude (Figure 8). Students in the Interactive and Both groups have more positive attitudes than students who experience either lecture-based civic education alone or neither type of education. Students in the Lecture group have more positive attitudes than the Neither group, however.

Students' sense of personal efficacy or confidence when discussing social issues with others also is related to their civic education experiences (Figure 9). Specifically, students in the Interactive and Both civic education groups have higher efficacy than students in the Neither group. This means that interactive experience in class is associated with a greater sense that one is able to engage one's peers outside of class in constructive discussion. Although the questions asked about social and political issues, it seems likely that students with a high sense of self-efficacy would also be more comfortable in discussions of issues arising in the workplace.

Adolescents' views about what the good citizen *should* do are reflections of their belief in norms of social/civic responsibility. There are group differences in norms of social responsibility based on the type of civic education received (Figure 10). Students who experience lecture-focused, interactive-focused, or both kinds of civic education are more likely to agree that it is important to "work hard" and "obey the law" than students who have not received either type of

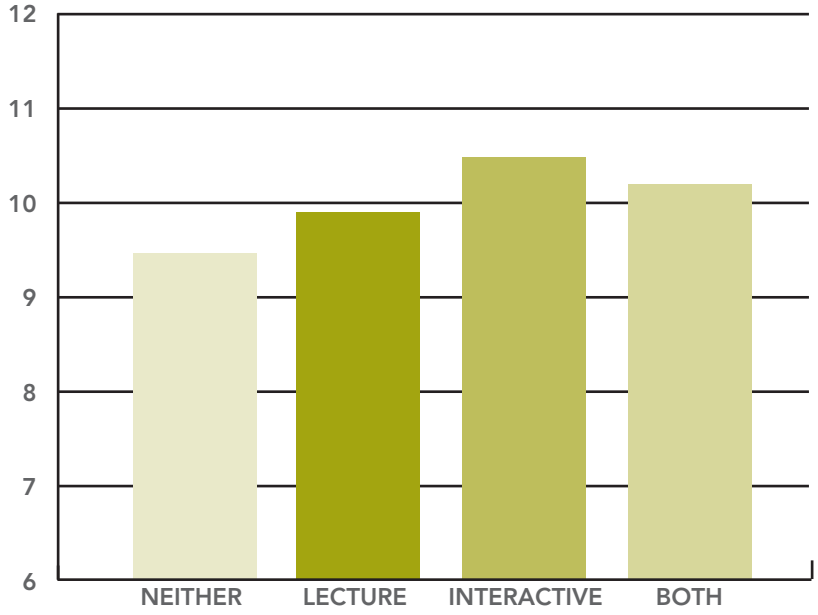
Figure 8. Level of positive attitudes toward ethnic minorities' rights by educational group[a]



[a] Positive attitudes toward the rights of ethnic minorities is a 4-item IRT scale assessing students' agreement with the following statements: All ethnic groups should have equal chances to get a good education in this country, All ethnic groups should have equal chances to get good jobs in this country, Schools should teach students to respect members of all ethnic groups, and Members of all ethnic groups should be encouraged to run in elections for political office.

Note: ANOVA results indicate that group differences are statistically significant. Lecture, Interactive, and Both are all greater than Neither. Also, Interactive and Both are greater than Lecture.

Figure 9. Sense of efficacy in discussing issues by educational group[a]



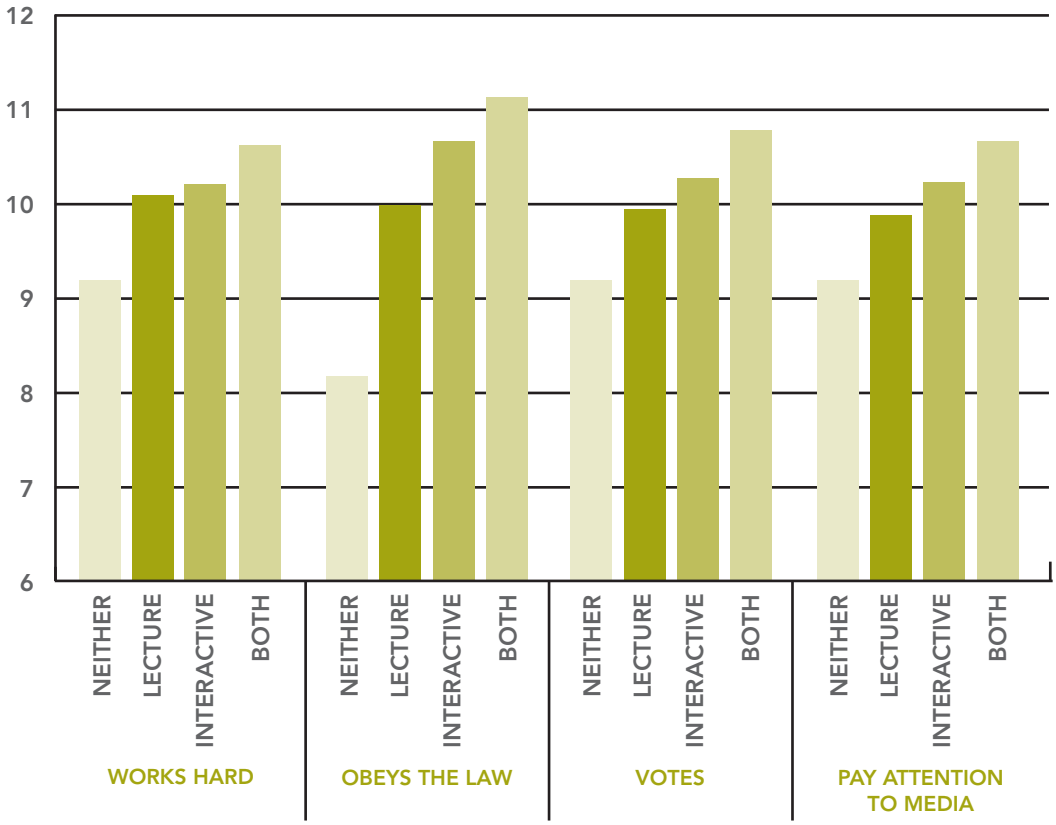
[a] Efficacy in discussing issues is a 4-item IRT scale assessing students' agreement with the following statements: When political issues or problems are being discussed I usually have something to say, I am able to understand most political issues easily, I know more about politics than most people my age, and I am interested in politics.

Note: ANOVA results indicate that group differences are statistically significant; Interactive and Both are greater than Neither.

civic education. The group difference in willingness to obey the law is especially stark. Students in the Interactive and Both education groups are also more likely than students in the Neither group to agree that it is important to "vote" and "follow political issues in the media."

In summary, for the knowledge-based and attitudinal competencies, receiving a civic education with an interactive focus was especially beneficial (either alone or in combination with traditional teaching). For the outcomes that are behavioral in nature, it was the combination of lecture and interactive teaching that was the most beneficial. Students in the Interactive and Both groups consistently had higher behavioral competency levels, especially in comparison to students in the Neither group. Students who experience the type of civic education that combines interactive- and lecture-based learning experiences also have stronger norms of social responsibility, meaning they think that it is important for citizens to maintain the social order by doing things such as working hard and obeying the law. Students who do not experience either type of civic education (i.e., in the Neither group) consistently have the lowest attitudinally based competencies, including less positive attitudes toward minority groups and placing relatively little importance on obeying the law.

Figure 10. Norms of social responsibility by educational group[a]



[a] Norms of social responsibility are assessed with single items measuring the extent of students' agreement that a good adult citizen should work hard, obey the law, vote, and pay attention to issues in the media.

Note: ANOVA results indicate that group differences in students' agreement that it is important to "work hard" are statistically significant. Lecture, Interactive, and Both are all greater than Neither. ANOVA results indicate that group differences in "obeys the law" are statistically significant. Lecture, Interactive, and Both are all greater than Neither. Also, Both is greater than Lecture. ANOVA results indicate that group differences in "votes" and "pays attention to media" are statistically significant. Both and Interactive are greater than Neither. Also, Both is greater than Lecture.

RESULTS FROM THE CURRENT STUDY: MULTILEVEL ANALYSIS

In the previous section we provided descriptive information regarding group differences in 21st Century skills and competencies tested with basic statistical techniques. This section of the report presents results from more sophisticated statistical analyses in which we use information about civic education experienced in the classroom to predict 21st Century skills. The advantage of this analysis is that it provides a more precise estimation of the relation between exposure to civic education and the 21st Century skills and competencies, especially since the analyses control for important demographic characteristics including gender, race, immigrant status, and SES. Utilizing a 2-level analysis allows for the investigation of measures considered at the individual student level together with measures of the school-level environment.

In the previous sections the categorical variables (Neither, Lecture, Interactive, and Both) were used to divide the sample into four groups. In this section we use as predictors the continuous scales that were divided at the median to construct the educational groups (the open class climate and traditional teaching scales). Controlling for student demographic characteristics, we examine here how the experience of an open class climate and of traditional teaching predicts four of the skills/competencies: economic knowledge, media literacy skills, positive attitudes toward the rights of minorities, and sense of efficacy. Results of these level-1 analyses are in Appendix A, Table 2.

In addition to examining the role of individual students' civic education, aggregate measures of the average civic education in the school were included. The responses of individual students within a school were averaged to create the aggregate measures. Therefore, there is a measure of school climate (aggregate or average of students' open class climate for discussion scale scores) and school traditional teaching (aggregate or average of students' traditional teaching scale scores), as well as school SES (aggregate or average of students' SES). Finally, we examined interactions between the school SES and school climate, and between school SES and school traditional teaching. The results of the level-2 analyses are in Appendix A, Table 2. Key findings, including significant interactions, are discussed below.

ANALYSIS OF INDIVIDUAL STUDENTS' CIVIC EXPERIENCES (LEVEL 1)

Individual students' experience of civic education through traditional teaching was positively related to their economic knowledge, media literacy skills, positive attitudes toward the rights of minorities and sense of efficacy in discussing issues. Similarly, experiencing civic education through open discussion and the sharing of diverse ideas predicted higher scores on all four outcomes. The experience of an open classroom climate for discussion was a particularly strong predictor of positive attitudes toward the rights of minorities. This corresponds to the finding discussed earlier, but the fact that SES has been controlled for here strengthens the analysis.

ANALYSIS OF THE SCHOOL ENVIRONMENT (LEVEL 2)

Considering a second level of analysis, school measures were also positively related to students' outcomes. Note that the effect of these measures can be interpreted as "over and above" the individual students' experience. For example, schools that are characterized by higher levels of traditional teaching have students with higher media literacy skills and more positive attitudes. This relation exists regardless of whether a particular individual student responded that he or she had experienced traditional teaching. Similarly, open classroom climate in the school as a whole was positively related to positive attitudes over and above an individual student's experience of an open climate for discourse.

School SES was positively related to students' economic knowledge, media literacy skills, and attitudes toward the rights of minorities. Note that the relation was especially strong for the knowledge-related outcomes. There were

also two interactions involving school SES and the school's level of traditional teaching (details below). There were no interactions involving the school's level of open climate. That means that students experiencing more open climate for classroom discussion had higher scores on these 21st Century knowledge-related and attitudinally-related competencies no matter what the SES level of their school.

INTERACTIONS BETWEEN THE SCHOOL ENVIRONMENT (LEVEL-2 INTERACTIVE EFFECTS)

Overall, students attending schools with higher levels of traditional teaching had higher media literacy skills. Students attending higher-SES schools also had higher media literacy skills. These two main effects interacted for a compounded interactive effect such that the level of one measure affected the influence of the other. This interaction is illustrated in Figure 11.

This graph shows that higher levels of traditional teaching were especially beneficial in schools where the average student is of low or average SES. In these lower-SES schools, students' skills increased by at least a standard deviation as the level of traditional teaching changed from low to high. Conversely, in high-SES schools, the level of traditional teaching was not important for students' media literacy skills and even had a slightly negative influence. One interpretation is that using high levels of traditional teaching can serve as an equalizer, bringing the knowledge and skills of students in low-SES schools closer to the skill levels of students in more affluent schools.

An interaction also occurred between school SES and school traditional teaching in regard to students' sense of efficacy in discussion (see Figure 12 on page 28). In contrast to the first interaction, higher levels of traditional teaching were less beneficial in relation to efficacy for students in low-SES schools. Students attending low-SES schools with high levels of traditional teaching had a lower sense of efficacy in discussing social and political issues than students attending low-SES schools with low levels of traditional teaching. The opposite relation occurred in high-SES schools, where more traditional teaching was associated with higher student efficacy.

Figure 11. Interaction between school SES and school traditional teaching on students' media literacy skills

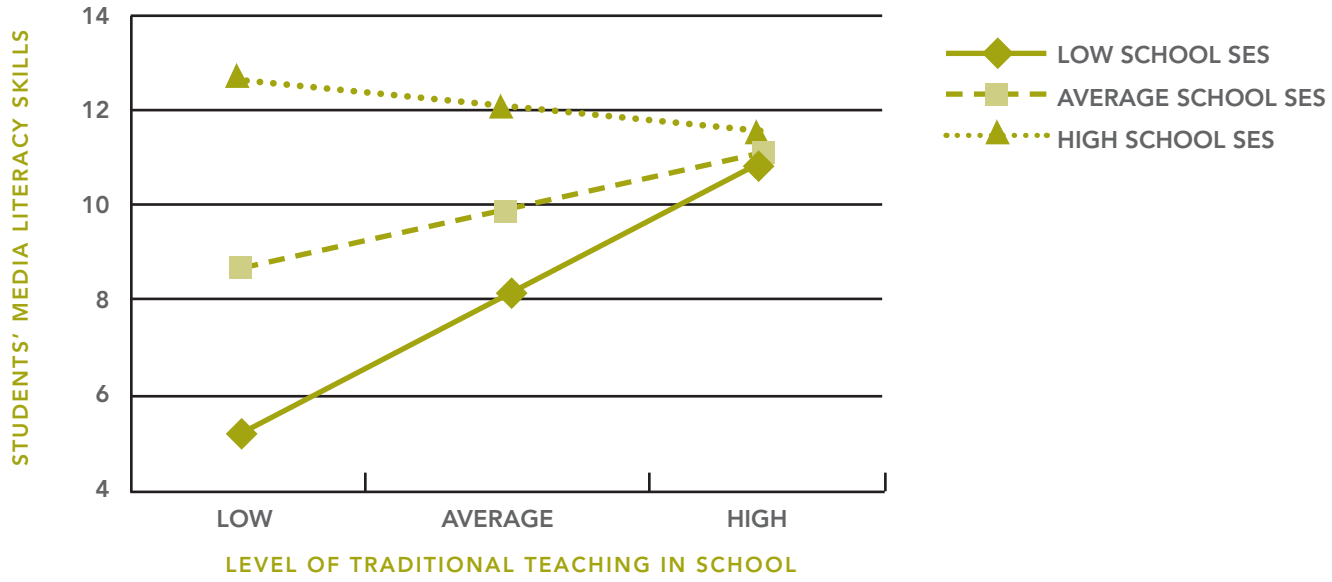
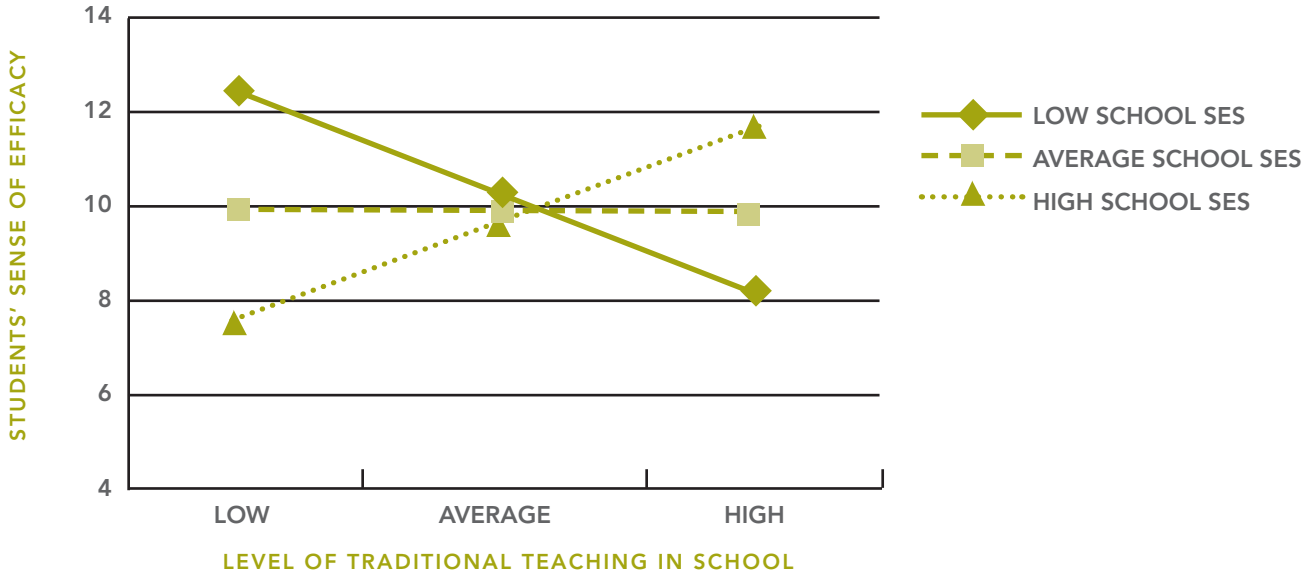


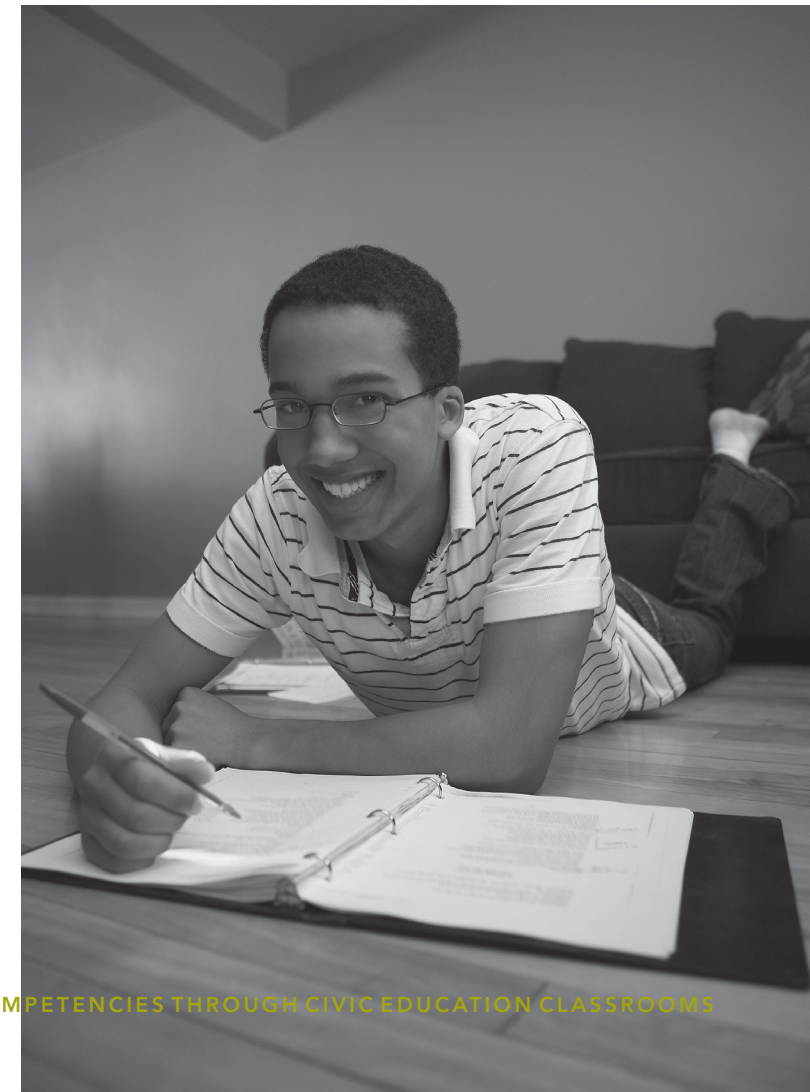
Figure 12. Interaction between school SES and school traditional teaching on sense of efficacy when discussing social and political issues



SUMMARY OF MULTILEVEL ANALYSIS

The HLM analyses support the findings from the descriptive graphs in the previous section. The experience of a traditional civic education, in which teachers focus on conveying specific content, predicts various measures of 21st Century skills and competencies. Likewise, students who experience civic education through the respectful discussion of different ideas about issues also have higher skills and competencies.

The school environment also relates to 21st Century skills and competencies, with school SES having a particularly strong relation. Interactive effects indicate that higher levels of traditional teaching in the school can have enhanced benefit or detriment in low-SES schools depending on the outcome being examined.



IMPLICATIONS FOR SCHOOL PRACTICES AND POLICY

In this report we have shown that interactive classrooms where teachers and students are encouraged to express, respect, and understand different sides of social issues are beneficial in developing adolescents' 21st Century skills and competencies. The approach found in traditional civic education classrooms, characterized by lecture and a focus on content, also shows positive effects, especially when combined with interactive discussion. In fact, to foster most 21st Century competencies, a combination of these two kinds of learning experiences is most positive for students. But there are differences in the findings for particular competencies. In fostering content knowledge of economics and media literacy, going beyond traditional ways of content-based teaching to add discussion and interaction is especially effective. In schools with many students from homes with few educational resources, however, a traditional focus is important. In fostering behaviors such as collaboration and positive attitudes toward diverse groups, discussion and other interactive practices are especially important.

For the development of a range of outcomes relating to 21st Century competencies, the combination of both traditional and interactive practices seems to be the most beneficial. An open classroom climate in which issues are discussed and individuals' opinions respected are an essential part of this combination. There is no competency outcome where an education that is based on lecturing and use of the textbook alone is superior to an interactive discussion-based focus. Combining interactive-classroom and lecture-based teaching with a strong content base has an especially substantial influence on behavioral and attitudinal outcomes, however.

Civic-related classrooms that fail to implement either a traditional or an interactive education fail to adequately prepare students for their futures. More than a quarter of ninth-grade students in the United States were receiving neither of these types of civic education in 1999, perhaps because of instruction that was poorly organized or did not get students involved. This finding should be of concern. These students have low levels of 21st Century skills and competencies, indicating that they are not prepared to be functioning members of society or the workforce. Additionally, these students are more likely to drop out of high school (or complete only the minimum required for a diploma) and to place little importance on being law-abiding. Having a substantial group that does not value the role of education and does not understand the importance of the rule of law is a cause for concern.

The founding document of the Campaign for the Civic Mission of Schools, *The Civic Mission of Schools Report,* identified six promising practices. The first two practices, providing content-instruction and incorporating discussion of local national and international issues, correspond closely to the lecture-based and interactive educational groups we have identified. The current analysis shows that these two practices are not antithetical to each other. Educators need to find creative ways to combine them, and the field as a whole needs to find ways to minimize the number of students who experience neither type of civic education. This group of students is especially likely to be deficient in knowledge and skills vital in the workplace, to have limited experience with cooperation and understanding others, to feel uncomfortable expressing opinions constructively, to hold negative attitudes toward minority groups, and to think it not very important to work hard or obey the law. This group is also especially likely to expect to drop out of school or to obtain no education past high school. That about one-quarter of the students who are now young adults experienced neither of the effective types of civic education by the ninth grade suggests a serious problem. Teacher in-service education is one way to address this problem in the future (Torney-Purta, Barber, and Richardson, 2005).

BROADER IMPLICATIONS

This analysis of 21st Century competencies with 20th Century assessment tools applied to a nationally representative sample has been informative. It has shown, among other things, that although these elements may be assessed within an integrated and holistic framework, it is also valuable to separately consider cognitively-based competencies (content knowledge of economics and media literacy skills), behavior (e.g., collaborating in groups), and attitudes or dispositions (e.g., openness to racial diversity).

Some educational methods that predominate in civic-related subjects have a broader potential impact than might be obvious. Educators and advocates who are currently promoting the strengthening of civic-related education in schools may be tempted to focus narrowly on the student's role as a future citizen who is grounded in knowledge of democratic principles and prepared to vote. It is also appropriate to attend to the student's future role as a productive worker who is grounded in positive attitudes toward work and obedience to the law, understands economic processes, is confident about expressing opinions, and can be collaborative with a diverse range of co-workers. Civic education that blends interactive discussion with a strong content focus can contribute to all of these 21st Century competencies. These approaches should be a regular feature of formal education and should also be encouraged in groups that operate in collaboration with schools.

Appendix A: Multilevel Models of School Effects on Students' 21st Century Skills

TABLE 2. RESULTS OF HLM ANALYSES

	Economic knowledge	Media literacy skills	Rights attitudes	Sense of efficacy
FIXED EFFECTS				
Intercept	9.71***	9.70***	9.84***	10.06***
School measures				
School traditional	.37	1.08*	.86*	-.09
School climate	.51	.14	.98*	.55
School SES	2.35***	2.17***	.89**	-.33
SES x traditional	-1.27	-1.71+	.36	2.01**
SES x climate	.33	-.14	-.98	.90
Student measures				
Traditional teaching	.43***	.40***	.36**	.22+
Open climate	.41***	.40***	.89***	.44**
Female	-.28	.79***	2.17***	-.92***
Asian	.33	.36	1.80***	-.21
Black	-1.85***	-1.97***	.32	.39
Latino	-.73*	-.68*	1.16**	.15
Multiracial	-.14	-.58	.79	-.02
American Indian	-3.06**	-2.51*	.21	2.64**
Immigrant	-.28	-.80**	-.52+	.81*
SES	.97***	.84***	.44***	.83***
RANDOM EFFECTS				
Intercept	1.18***	1.44***	.35**	.45**
Level-1 error	17.67	17.11	20.39	23.30

Note: The table contains HLM coefficients (under fixed effects) and variance components (under random effects). All variables have been centered on their grand mean.

+ p < .10, * p < .05, ** p < .01, *** p < .001

Because of the extensive controls used in HLM, it has become standard practice to interpret findings at the p < .10 level.

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WEB SITES

American Bar Association Division for Public Education (Publications and Training Opportunities):
http://www.abanet.org/publiced

Assessment and Teaching of 21st Century Skills (Working Papers):
http://www.atc21s.org

The Center for Information and Research on Civic Learning and Engagement (Reports, Working Papers, and Data):
http://www.civicyouth.org

Civic Mission of Schools Campaign (Publications and links to Civic Education Organizations and Programs):
http://www.civicmissionofschools.org

IEA Civic Education Study (Publications, Reports, and Assessment Instruments):
http://www.terpconnect.umd.edu/~jtpurta

National Center for Learning Citizenship (Policy Paper and Database of Items for Assessing Civic Education):
http://www.ecs.org/qna

National Council for the Social Studies (Standards, Publications, Training Opportunities):
http://www.socialstudies.org

Partnership for 21st Century Skills (Reports):
http://www.21stcenturyskills.org

U.S. Department of Labor (SCANS Report):
http://wdr.doleta.gov/SCANS/whatwork

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