

Questioning the Strategic Vision, LLC, Civics Studies

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Abstract: Polling organization Strategic Vision, LLC, has been placed under suspicion of fraud. Others have statistically sifted through hundreds of results. Instead, this paper takes a particular approach, carefully examining surveys attributed to them – civics quizzes purportedly administered to Arizona and Oklahoma high school students. Several factors strongly suggest that the data is fraudulent.

To conduct the polls in one weekend, including contacting over 10% of Arizona private school students, would have been formidable. Not enough methodological information exists to confirm proper procedures. Next, published results are significantly worse than prior studies, even considering differences between multiple-choice and free response questions. The results are also significantly worse than those from a comparable group of Oklahoma 12<sup>th</sup> graders and a group of undergraduates adjusted for ability differences. Finally, reported incorrect answers have highly suspect distributions, with the tally of different wrong replies much smaller than what would be expected.

Over the past few months, the Georgia-based polling company Strategic Vision, LLC has become entangled in controversy. The American Association for Public Opinion Research (AAPOR), a voluntary association of polling professionals not including Strategic Vision, LLC, raised objections to the lack of detail provided in their results. They issued a rare public objection (AAPOR 2009). This led others to become concerned about potential fraud. Nate Silver of the website [www.fivethirtyeight.com](http://www.fivethirtyeight.com) attempted (2009) to look at published results from a quantitative simulation perspective, but his initial attempt made many debatable distributional assumptions. A later guest post by Michael Weissman (2009) provided a better mathematical examination of poll trailing digits. Looking at the variation through Fourier analysis, Weissman presented a p-value of 0.00019, statistically significant evidence of doubt.

On October 7, 2009, Carl Bialik of the Wall Street Journal published an article summarizing the situation, noting that “the conflict has shed light on an inconvenient truth about widely reported political polls: Verifying their numbers is nearly impossible.” This paper attempts that challenging task, the verification for two reports, studies of civics knowledge among high school students in Arizona and Oklahoma.

Matthew Ladner described the Oklahoma results in the September 2009 issue of *Perspective*, the magazine of the Oklahoma Council of Public Affairs (2009b). Much of the text also appears in an earlier publication by Ladner, a June policy report from the Goldwater Institute entitled “Freedom from Responsibility” (2009a). Both reports are available online. The executive summary of the Arizona report states its purpose. “To determine students’ level of basic civic knowledge, we surveyed Arizona high school students with questions drawn from the United States Citizenship and Immigration Services (USCIS) item bank, which consists of 100 questions given to candidates for United States citizenship.” Citizenship candidates pass by correctly answering 6 out of 10 questions selected from the item bank. “The service recently reported a first-try passing rate of 92.4 percent.”

Compared to citizenship candidates, the high school students were extremely ill informed. The results indicated that only 3.5% of the surveyed public Arizona high school students would pass the citizenship test. No public school student scored higher than 7 out of 10. Arizona private school students passed 13.8% of the time. The Oklahoma results were worse; of 1,000 questioned, only 2.8% scored 6 or more, and no student had more than 7 correct. When taking the quiz (included as the Appendix), I missed only the question on the Constitution as the supreme law of the land. It was difficult to believe that my score of 9 bested over 2,000 public school students.

In this paper, the first section describes how the poll was ostensibly administered. The second section focuses on how the results compare to similar studies. The third section provides the results from a quick poll of my college students. The fourth section contains an evaluation of reported incorrect answers. Overall, in both methods and results, there are profound concerns about the quality of this data.

## Methodology Examination

Page 4 of the Arizona report contains information about the design.

Strategic Vision, LLC conducted the poll of 1,350 Arizona public high school students on November 21-23, 2008. A separate sample of private school students was taken during the same period. The polls were conducted via telephone with live callers. They have a margin of error of +/- 3 percent. The telephone surveyor called a sample of Arizona high school

students and read the following statement: “On the next 10 questions, I will be asking you questions about American government and history. Give me your best answer, and it is permissible to respond “I don’t know.”

The Arizona report actually combines results from two datasets, 1,350 mixed students and 1,350 private students. Ladner’s summary of data was given to David Safier, who with permission posted it online at Blog for Arizona (2009). While not impossible to conduct so many interviews in three days with live calls, this would be a non-trivial task. The full survey had 35 questions, including inquiries on aspects of students’ schools. Taking roughly 10 minutes per completed interview, at a 100% response rate 20 to 25 surveyors would be employed full-time over the weekend. Further comment from Ladner on a blog indicates that the survey was to draw phone numbers from marketing lists (2009c). This would likely lead to a high response rate, making this feasible, yet difficult and expensive.

The 1,350 private school students would form a sizable subset of the population. Online school resource listing EducationBug estimates that there are about 11,000 private high school students in Arizona (2009). This figure is in line with the latest federal Private School Universe Survey, where in Table 15, Arizona private schools reported 2,593 high school graduates in 2006-07 (Broughman et al 2009). A sample of 1,350 pupils, out of 11 or 12 thousand, comprises slightly over 10% of the population. Though last year’s seniors would have graduated, there should still be plenty of former underclassmen that remember being polled. This could be verified.

In the Oklahoma article, there are two separate paragraphs in the section “Oklahoma High-School Students and the U.S. Citizenship Test.”

Last month OCPA commissioned a national research firm, Strategic Vision, to determine Oklahoma public high-school students' level of basic civic knowledge. The firm's surveys have been used by Time, Newsweek, and USA Today, and National Journal's "Hotline" has cited them as some of the most accurate in the country. The margin of error for this particular survey is plus/minus three percent. . . .

In Oklahoma, the telephone surveyors called a sample of 1,000 public high-school students and read the following statement: "On the next 10 questions, I will be asking you questions about American government and history. Give me your best answer, and it is permissible to respond ‘I don't know.'"

There is insufficient information to establish trust in the methodology. Helpful data includes more precise call dates, a source for the sampling frame, and refusal rates.

### Comparisons to Other Studies

If true, the poor performance exhibited by these students argues for fairly drastic measures. Some editorial writers, including USA Today (2009), suggested that the citizenship test be made a graduation requirement. To examine the truthfulness of the outputs, I searched for prior student surveys on civics information.

People have worried about American civics education for quite a while. For example, in 1917 Anna Michener wrote a research report about civics education in New York City public schools. Despite this enduring consternation, national representative testing began only fairly recently. The National Assessment of Educational Progress (NAEP) administered the first systematic effort in 1985 and 1986. Ravitch and Finn (1987) wrote a book about the mediocre results from this multiple-choice test. Among the 7,812 students, “the average student correctly answered

54.5 percent of the questions that he/she attempted” (p. 46). Only a few questions had high marks; one was to select the author of the Declaration of Independence, where 87.4% of students correctly chose Thomas Jefferson. (p. 263)

After this first examination, the NAEP began fairly regular testing in history and civics. Tests on history were given in 1994, 2001, and 2006, while civics was assessed in 1988, 1998 and 2006. Given in grades 4, 8, and 12, these tests included multiple choice and free response questions. Reports about the nationally representative samples of several thousand students are available online through the National Center for Education Statistics (2009). Two questions on this survey appear in earlier work. On the 1994 U.S. History test, 71% of eighth graders selected Thomas Jefferson as the author of the Declaration of Independence (1996:page x). The 1988 and 1998 Civics examinations asked 12<sup>th</sup> graders about the parts of the US Congress. In 1988, 77% filled the right bubble for the House of Representatives and the Senate, while 1998 students answered correctly 72% of the time (2001:17).

Beyond the NAEP tests, in January 2008, Common Core, an organization devoted to fostering “a full core curriculum,” decided to re-examine a subset of questions from the 1986 NAEP test. They employed RMA Research to conduct a nationwide telephone poll of 1,200 17-year-olds, based on names purchased from a prescreened list. Hess (2008) wrote about the results. On the 22 multiple-choice history questions, the average mark was 73%. On the Declaration of Independence question, he reported 87% correct, similar to the 1986 NAEP study (p. 7).

While these percentages are much higher than current numbers, an adjustment must be made for question format. The above NAEP results and Common Core’s replication used multiple-choice questions. The Arizona and Oklahoma surveys asked for a free response. As Dr. Ladner notes in the Oklahoma article, “an open-answer format represents a much higher standard than a multiple-choice-format exam.” To attempt to estimate the effect of question format, I searched for a comparable scenario. Anderson and Kanzler (1985) studied high school US history classes. Control students taking a multiple-choice test averaged about 72% correct. An equivalent class answered the same questions in multi-digit test format. On multi-digit tests, students select a code from hundreds of possible answers. Guessing is very difficult, yielding results very close to free response. The experimental group scored only 52%, a proportional reduction of 28%.

I also explored results where groups of students received identical questions, but gave the answer in varying format. Duchastel (1981) tested British secondary school groups on reading comprehension after reading a historical passage. On the multiple-choice test, the mean was 80% correct. The short-answer average was 68%, a proportional reduction of 15%. Chan and Kennedy (2002) graded college macroeconomics students. On equivalently worded questions with an expected difference, unadjusted multiple-choice answers were correct 77% of the time. The short-answer form had 50% correct, a 35% proportional reduction.

Based on this research, I considered two scenarios to estimate open-response proportions. The equivalent option reduced multiple-choice percentages by 33%, and the cautious option reduces applies a 50% reduction. Table 1 contains the original multiple choice, equivalent 33% reduced, cautious 50% reduced, Arizona, and Oklahoma results.

Table 1: Comparisons to Older Studies

Question	Original	33% reduction	50% reduction	Arizona	Oklahoma
Declaration of Independence,	87%	58%	43%	25%	14%

1986 NAEP 12 <sup>th</sup> grade					
Declaration of Independence, 1994 History 8 <sup>th</sup> grade	71%	47%	35%	25%	14%
Declaration of Independence, 2008 Common Core 12 <sup>th</sup> grade	87%	58%	43%	25%	14%
Parts of Congress, 1988 Civics 12 <sup>th</sup> grade	77%	51%	38%	23%	27%
Parts of Congress, 1998 Civics 12 <sup>th</sup> grade	72%	48%	36%	23%	27%

Current students in Arizona and Oklahoma appear much less knowledgeable than prior groups. To compare historical and current results, I chose a two-sample proportion test. All samples claim to be representative, and all have large sample sizes. To remain statistically conservative, I compared the mean adjusted figures under 50% reductions with the higher state's results. Moreover, I considered all groups to have sample size 1,000, the smallest value (Oklahoma students). The null hypothesis is that the two populations have the same proportion; the alternative is that the Arizona/Oklahoma average is less.

For the question about the Declaration of Independence, the reduced average of 40% against Arizona's 25% gives  $Z = 7.25$  and a p-value around 0.00000000005, less than one in a billion. On the question about the two parts of Congress, the reduced average of 37% versus Oklahoma's 27% yields  $Z = 4.74$  and a p-value of 0.000001, one in a million. There is exceedingly strong evidence against the null hypothesis of equal results.

In response to the results, other people have generated current data. Wayne Greene of the Tulsa World newspaper wrote several articles and received mostly higher anecdotal results (2009). Oklahoma state representative Ed Cannaday acquired more systematic data. He asked every school in his district to administer the test to 12<sup>th</sup> graders. 325 students from 10 schools took the test. The high school seniors averaged 78% correct, a statistically significant increase from the 28% reported by OCPA (2009).

### University Comparison

I administered the study to my undergraduates at Bellarmine University, a small Catholic college in Louisville, Kentucky. On September 30, 2009, I covered it in Math 314 on probability, while students in Math 200, introductory course "Statistics and Society," were polled on October 5. They did not have prior knowledge of the situation; in the middle of class, I told them that we would do a data collection exercise. I verbally asked the questions, and the students wrote down their answers. After all 10 questions were asked, I told them about the situation and we discussed the possibilities.

I have 41 response sheets, 33 from Math 200 and 8 from Math 314. My results do not directly estimate Arizona and Oklahoma high school student knowledge. My students are older, with more schooling and life experience. However, the students felt that their performance would have been roughly the same in high school; the additional schooling has not meant much. Since only 5 students had a political science course during college, I find no reason to disagree. More importantly, the Bellarmine student population is not the same as the high school student population. My university enrolls primarily above-average students. According to data provided

to US News and World Report (2009), 55% of freshmen were in the top quartile of their high school class and 83% were in the top half. Additionally, some students come from private schools, which do somewhat better in the Arizona report. My students also thought that a few high school kids would intentionally give false answers. Since contacted people have opted onto a marketing list, and can easily refuse the phone survey, this should be infrequent, yet still possible. To account for population differences and potential fake answers, I will compare my students to the top half of the high school population.

Table 2 contains question-by-question results for Bellarmine, Arizona, and Oklahoma students. It also includes a column called “Adjusted Top Half.” This column conservatively adjusts for the difference in samples. It assumes that all correct answers came from the better half of students in the better state. For example, on the Bill of Rights question, Oklahoma has the higher percentage at 26%. If none of the lower half of students answered correctly, then 52% of the upper half of the students would have done so. The Adjusted Top Half is 52%. Bellarmine students were 83% correct, a substantially higher score than the comparative figure.

Table 2: Question by Question Results

Question	Bellarmino	Adjusted Top Half	Arizona	Oklahoma
Constitution	10%	60%	30%	28%
Bill of Rights	83%	52%	25%	26%
Two Parts of Congress	80%	54%	23%	27%
Supreme Court justices	49%	20%	9%	10%
Declaration of Independence	78%	50%	25%	14%
East Coast ocean	85%	100%	59%	61%
Major political parties	100%	100%	50%	43%
US Senator term	32%	30%	15%	11%
First President	95%	54%	27%	23%
Executive branch leader	83%	58%	26%	29%

Examining the outcomes, on the Constitution question, Bellarmine students do much worse than pupils in the states. The results for the ocean, major political parties, and senator term are in line with the adjusted top half. On the remaining six questions, Bellarmine students do much better. I note that the introductory Math 200 course had covered polling, so the students should have done very well on the political party question. I will account for this in later statistical tests.

Overall, Bellarmine students averaged 6.95 correct out of 10. Table 3 contains overall results. 31 of the 41 (76%) would pass with 6 correct, and 25 (61%) scored 7 or more. Nine got at least 9 correct. Apparently, they did better than every one of over 2,000 public school students in Arizona and Oklahoma. This is difficult to believe; at least an occasional public school student should have enough interest in government to get 8, 9, or 10.

Table 3: Overall Results for Bellarmine Students

# Correct	0	1	2	3	4	5	6	7	8	9	10
# Students	0	0	0	1	2	7	6	7	9	8	1
% Students				2%	5%	17%	15%	17%	22%	20%	2%

The upper half of the Arizona public school results includes the top 567 out of 1,134 scores – all students with 7, 6, 5, and 4 correct, plus 231 students at 3. Overall, the mean is 3.92 out of 10. For Arizona private school students, the upper half mean is 4.93; for Oklahoma public school students, the upper half mean is 3.85. To account for the political party question, I make the very conservative decision to remove all correct answers. The new mean of 5.95 remains a full point higher than comparable Arizona private school students and 2 points above public school students.

The number of correct answers has no probability distribution, making it difficult to perform a statistical test on the means. A computable option examines pass rate. 2.8% of Oklahoma public students, 3.5% of Arizona public students, and 13.8% of Arizona private students got passing marks on the citizenship test. For this comparison, I need to remove the bottom half of the high school population where nobody passes. This doubles the rates to 5.6%, 7.0%, and 27.6%, respectively. Because of the political party question, the minimum Bellarmine passing score becomes 7 out of 10, where 25 (61.0%) made this mark.

Statistically, I want to compare these figures. Given a sample of 41 people, with the adjusted pass rates, what is the probability that 25 or more would pass? This can be found with the binomial distribution. For the Oklahoma public school pass rate of 5.6%, and the Arizona public school rate of 7.0%, the p-value is less than  $10^{-10}$ , less than one in a billion. The Arizona private school rate of 27.6% makes the probability slightly more likely, 0.000008, roughly 8 in a million. This is still very uncommon. After accounting for the disparity between the high school and college populations, and the political party question, the pass rates appear highly divergent.

## Answer Graphics

Another concern arises in the reported answer graphics, which have highly irregular distributions. A few questions have strange results, such as the Monroe Doctrine, John Adams, and Michael Jackson, yet not all do. The lack of an “Other” category in open-ended response is extraordinary. Rare answers should consistently be separated from the “Don’t Know” category; if separately less than 1%, they should be grouped as “Other”.

I went through my papers and collected every answer, correct and incorrect. To confirm these results, I asked Bellarmine undergraduate Tom Jacobs to also compile the answers. This section contains the double-checked responses, one table for each question. In the table of responses, the correct answer appears first. Incorrect answers are listed in alphabetical or numerical order. When a survey included an “Other” category, I placed it next to last. Blank “Don’t Know” Responses always appear at the end. For each answer, I list the percentage from Bellarmine students, Arizona public school results from the Goldwater Institute report, Arizona private school results from the online data table, and Oklahoma results from the OCPA report.

I include commentary after each table, but I do not perform statistical tests. Since most answers are unordered, it is difficult to use a statistical test such as the Kolmogorov-Smirnov test to compare the distributions. I focus on visual, critical comparison. For most questions, the reports’ answer distributions are nearly impossible to believe when compared to actual answer distributions. The strongest evidence appears in Questions 3, 4, and 8. The reported results contain fewer different wrong answers, from over 1,000 students, than my Bellarmine sample of 41. I find this unbelievable.

1. What is the supreme law of the land?

	Bellarmino	Arizona Public	Arizona Private	Oklahoma
Constitution	10%	29%	41%	26%
Be Nice	2%			
Bill of Rights			10%	5%
Declaration of Independence		24%	17%	17%
Don't mess with Momma Nature	2%			
Emancipation Proclamation				3%
Freedom	5%			
Gettysburg Address			3%	4%
Golden Rule	10%			
Government	7%			
Justice for all people	2%			
Liberty and justice for all	2%			
Life, liberty, and the pursuit of happiness	7%			
Manifest Destiny	2%			
Monroe Doctrine				2%
Possession	2%			
Thou shall not kill	2%			
To each his own	2%			
United we stand, divided we fall	2%			
Other			2%	
Don't Know (Blank Answer)	39%	47%	28%	41%

This was the most confusing question. The wording “supreme law” led many of my students to think of a phrase or slogan, instead of a document. High school students may think of a document instead of a slogan. That may explain the difference, though it is extremely unlikely that two samples had no Other category for unusual or humorous responses, such as “Don’t Mess with Momma Nature.”

2. What do we call the first ten amendments to the Constitution?

	Bellarmino	Arizona Public	Arizona Private	Oklahoma
Bill of Rights	83%	25%	39%	26%
Constitution		12%	21%	
Declaration of Independence	2%	16%	5%	16%
Equal Rights	2%			
Gettysburg Address				6%
Monroe Doctrine				4%
New Deal				2%
Ten Commandments				3%
Don't Know (Blank Answer)	12%	48%	35%	43%

The statistical distribution says little. Thinking about how students answer questions, I find it extremely strange that a double-digit percentage of Arizona students would give a reply stated in the question to the question. Answering “Constitution” requires ignoring basic instinct about how a test is constructed.

3. What are the two parts of the U. S. Congress?

	Bellarmine	Arizona Public	Arizona Private	Oklahoma
Senate and House of Representatives	80%	23%	42%	27%
Democrats and Republicans	2%			
Executive and Legislative	5%			
Governor and President				3%
House of Representatives, House of Execs.	2%			
Legislative and Judicial	7%			
President and Congress				8%
President and Supreme Court				4%
Don't Know (Blank Answer)	2%	77%	58%	58%

The Arizona samples have no listed wrong answers, and Oklahoma includes just three. Given that Bellarmine students gave four different wrong replies from a sample size of just 40 students, it is implausible that nobody in Arizona gave a wrong answer, instead replying “I don’t know.” The Oklahoma distribution has only minuscule plausibility. At the very least, Strategic Vision, LLC, failed to record unusual wrong answers, a serious breach of statistical conduct.

4. How many justices are on the Supreme Court?

	Bellarmine	Arizona Public	Arizona Private	Oklahoma
Nine	49%	9%		10%
Three	5%			
Five				5%
Six	2%		13%	11%
Seven	15%	8%		
Eight	5%	11%	16%	15%
Ten		13%		21%
Twelve	5%	16%	33%	7%
Thirteen	7%			
Fifteen			29%	
Thirty one	2%			
Thirty nine	2%			
Don't Know (Blank Answer)	7%	42%	10%	31%

The correct answer of 9 Supreme Court Justices does not appear in the Arizona private school survey. It is unbelievable that over 300 pupils would give the unusual answer of 15 – lacking innate meaning in American government, unlike 12 or 13 – while 0 provided the correct number. Additionally, on this question, the variety of incorrect responses I received in my 41 replies apparently exceeds the variety of surveys 25 times larger. This is incredible.

5. Who wrote the Declaration of Independence?

	Bellarmino	Arizona Public	Arizona Private	Oklahoma
Jefferson	78%	25%	44%	14%
Adams	2%	4%	5%	
Founding Fathers	2%			
Franklin	2%		11%	
Hancock	2%			
Michael Jackson				2%
Lincoln	2%	5%		24%
Madison	2%			
Obama				7%
Washington		13%	8%	19%
Other		2%	1%	
Don't Know (Blank Answer)	7%	50%	32%	34%

I am surprised by the relatively small proportion of Other answers, given the variety provided by my students. Plus, in Oklahoma, would 1000 real teenagers give only four wrong names? That's less than my Bellarmine sample. Thinking about answers, while the proportion that names George Washington seems high, given the emphasis on the first President this is not unbelievable (unlike #9 which directly asks about him).

6. What ocean is on the east coast of the United States?

	Bellarmino	Arizona Public	Arizona Private	Oklahoma
Atlantic	85%	59%	63%	61%
Indian		3%	2%	3%
Pacific	15%	9%	9%	11%
Don't Know (Blank Answer)		29%	26%	25%

The only two logical alternatives are Pacific and Indian, so these results are not surprising, though I am slightly taken aback that so many respondents would make no reply.

7. What are the two major political parties in the United States?

	Bellarmino	Arizona Public	Arizona Private	Oklahoma
Democratic and Republican	100%	50%	60%	43%

Communist and Democrat	3%		
Communist and Republican	5%	11%	
Green and Socialist	1%		
Other	12%		
Don't Know (Blank Answer)	38%	31%	46%

The Math 200 course, 33 of my 41 students, had earlier covered political polling as an example of data collection. Also, almost all college students are old enough to vote. Therefore, it is not surprising that all my students were correct; I'm pleased with that. Of the ten questions, this is the one where the difference in population is most apparent.

Given the current political climate, "Communist" puzzles me, with "Socialist" a more likely alternative, but I have little empirical evidence on this question.

8. We elect a U. S. Senator for how many years?

	Bellarmine	Arizona Public	Arizona Private	Oklahoma
Six Years	32%	15%	39%	11%
Two	34%	14%	6%	5%
Four	12%	21%	8%	17%
Five	2%			
Seven	2%			
Eight	5%	9%	9%	
Nine	2%			
Ten		6%	5%	33%
Sixteen	2%			
Life	2%			
Don't Know (Blank Answer)	5%	36%	33%	34%

If truly free-response, a larger sample should have more variety, not less. There are more distinct wrong answers in the size 41 sample than those with more than 1000 observations. For instance, although I received several odd year counts (5, 7, 9), none appear in the Arizona and Oklahoma results. This is extremely hard to believe.

Looking at the answers, Bellarmine students' most common response – confusing the House term of 2 years with the Senate 6 year frame – is apparently much less popular among the high school students. The question clearly asks for a number of years, so providing an integer is straightforward. Despite that, 2 of my 28 wrong answers were blank, meaning some people still give up. However, having 7% of wrong answers be blank is much less than the 30% shown in the public and private samples.

9. Who was the first President?

	Bellarmine	Arizona Public	Arizona Private	Oklahoma
Washington	95%	27%	43%	23%
Adams		4%	4%	7%

Bush		4%	1%	5%
Clinton		3%		
Jackson			4%	
Jefferson	2%	18%	11%	15%
Kennedy		8%		3%
Lincoln	2%	21%	7%	18%
Madison			2%	
Monroe			3%	
Nixon				4%
Obama		2%	1%	5%
Reagan		3%		
Roosevelt		3%	4%	10%
Other			< 1%	
Don't Know (Blank Answer)		7%	19%	10%

Knowledge of Washington as first President is not universal, as two Bellarmine students showed. Nevertheless, it takes full suspension of disbelief to accept a result under 50%. Multiple people cited Obama, even though teenage high school students know at least the Bush years. While the other false answers given are Presidents, it is exceedingly strange that some of these choices would be that common.

#### 10. Who is in charge of the executive branch?

	Bellarmino	Arizona Public	Arizona Private	Oklahoma
President	83%	26%	38%	29%
Chief Justice		5%		5%
Congress			15%	
Governor		9%	10%	10%
Judicial	2%			
Senate (Senator)	2%			3%
Speaker of the House				2%
Supreme Court			9%	
United Nations			1%	
Other		7%	1%	
Don't Know (Blank Answer)	12%	53%	27%	51%

I do not have data to speak fully on this question, though I consider some false answers suspicious. Note that as written, Governor could also be considered correct. The citizenship test applies to federal government, but the questionnaire does not specify federal or state level.

#### Conclusion

No one doubts the need for fundamental knowledge about US government. As one student remarked, “these are questions that we should know.” My students were not proud of their pass rate. To properly assess the situation, advocate for appropriate education, and track changes over

time, reliable accurate information needs to be obtained. Unfortunately, the Arizona and Oklahoma figures provided by Strategic Vision, LLC, do not meet the reliability standard.

- Provided methodology information is insufficient. To conduct the Arizona private school sample would require interviewing over 10% of the population, a daunting task that needs much more verification.
- Reported results come nowhere near comparative figures, even after adjusting for differences in question type. The comparison is highly significant.
- The Bellarmine college sample passes the citizenship test significantly more often than the comparison groups, the upper half of Arizona and Oklahoma students.
- No public school student scored 8, 9, or 10 correct, out of over 2,000 polled. For comparison, nine of 41 undergraduates reached this level.
- Distributions of wrong answers are nearly impossible to believe. For several questions, the number of incorrect options is smaller over 1,000 observations than Bellarmine results over 41.

Admittedly, none of this evidence is direct. Nevertheless, Thoreau once wrote, “Some circumstantial evidence is very strong, as when you find a trout in the milk” (1850). At this point, there are many fish swimming in sight. Report author Ladner has been forthcoming, even offering a spreadsheet containing the observations provided to him. While this confirms that the reports were properly generated from raw data, it does not confirm that the datasets sent to the Goldwater Institute and Oklahoma Council of Public Affairs consist of actual polled high school students.

At this point, I believe that the datasets provided by Strategic Vision, LLC, are fraudulent. If there is direct evidence validating the truthfulness of these results, such as the marketing lists and phone numbers to re-canvass for verification, I call upon Strategic Vision, LLC to release it.

Appendix: Survey Questions and Answers, from the Goldwater Institute report (Ladner 2009a)

1. What is the supreme law of the land?

Answer: The Constitution.

2. What do we call the first ten amendments to the Constitution?

Answer: The Bill of Rights.

3. What are the two parts of the U.S. Congress?

Answer: The Senate and the House.

4. How many Justices are on the Supreme Court?

Answer: Nine

5. Who wrote the Declaration of Independence?

Answer: Thomas Jefferson

6. What ocean is on the East Coast of the United States?

Answer: Atlantic

7. What are the two major political parties in the United States?

Answer: Democratic and Republican

8. We elect a U.S. Senator for how many years?

Answer: Six

9. Who was the first President?

Answer: Washington

10. Who is in charge of the executive branch?

Answer: The President

## References

American Association for Public Opinion Research. 2009. "AAPOR Raises Objections to Actions by Atlanta-Based Strategic Vision LLC." Deerfield, Illinois: AAPOR. Retrieved November 28, 2009

([http://www.aapor.org/AAPOR\\_Raises\\_Objections\\_to\\_Actions\\_by\\_Strategic\\_Vision\\_LLC.htm](http://www.aapor.org/AAPOR_Raises_Objections_to_Actions_by_Strategic_Vision_LLC.htm)).

Anderson, Paul S. and Eileen M. Kanzler. 1985. "Comparison of Cognitive Achievement in Objective Testing: Multi-Digit and Multiple-Choice Tests." Paper presented at the 69<sup>th</sup> annual meeting of the American Educational Research Association. Retrieved November 28, 2009 (<http://www.eric.ed.gov/ERICWebPortal/contentdelivery/servlet/ERICServlet?accno=ED260131>).

Bialik, Carl. 2009. "Some See Numerical Oddity in Pollster's Election Surveys." *Wall Street Journal*, October 7.

Broughman, S.P., Swaim, N.L., and Keaton, P.W. 2009. *Characteristics of Private Schools in the United States: Results From the 2007-08 Private School Universe Survey* (NCES 2009-313). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC. Retrieved November 28, 2009

(<http://nces.ed.gov/pubs2009/2009313.pdf>).

Cannaday, Ed. 2009. "Students Pass New Civics Survey." Oklahoma: Oklahoma Democrats. Retrieved November 28, 2009 (<http://www.okdemocrats.org/students-pass-new-civics-survey>).

Chan, Nixon, and Peter E. Kennedy. 2002. "Are Multiple-Choice Exams Easier for Economics Students?" *Southern Economic Journal* 68: 957-971.

Duchastel, Philippe C. 1981. "Retention of prose following testing with different types of tests". *Contemporary Educational Psychology* 6: 217-226.

EducationBug. 2009. "Arizona Private School Statistics." Utah: EducationBug. Retrieved

November 28, 2009 (<http://arizona.educationbug.org/private-schools/>).

Greene, Wayne. "Who's the guy on the \$1 bill?" *Tulsa World*, October 18.

Hess, Frederick M. 2008. *Still at Risk: What Students Don't Know, Even Now*. Washington, DC: Common Core. Retrieved November 28, 2009 ([http://www.commoncore.org/\\_docs/CCreport\\_stillatrisk.pdf](http://www.commoncore.org/_docs/CCreport_stillatrisk.pdf)).

"Independence Day" [Editorial]. 2009. *USA Today*, July 2. Retrieved November 28, 2009 (<http://blogs.usatoday.com/oped/2009/07/our-opinion-independence-day.html>).

Ladner, Michael. 2009a. *Freedom From Responsibility: A Survey of Civic Knowledge Among Arizona High School Students*. Phoenix: Goldwater Institute. Retrieved October 10, 2009 (<http://www.goldwaterinstitute.org/file/3212/download/3212>).

Ladner, Michael. 2009b. "Mourning Constitutional." *Perspective*, September 2009. Retrieved October 10, 2009 (<http://www.ocpathink.org/publications/perspective-archives/september-2009-volume-16-number-9/?module=perspective&id=2321>).

Ladner, Michael. 2009c. "Civic Knowledge Polling Controversy." Phoenix: Jay P. Greene's Blog. Retrieved November 28, 2009 (<http://jaypgreene.com/2009/11/12/civic-knowledge-polling-controversy/>).

Michener, Anna. 1917. *Instruction in Civics in New York City High Schools: A Statistical Survey*. New York: Bureau of Municipal Research.

National Center for Education Statistics. 2009. "The Nation's Report Card". Washington, DC: National Center for Education Statistics. Retrieved November 28, 2009 (<http://nces.ed.gov/nationsreportcard/>).

Office of Educational Research and Improvement. National Center for Education Statistics. 1996. NAEP 1994 U.S. History Report Card, by A.S. Beatty, C.M. Reese, H.R. Persky, and P. Carr. Washington, DC: U.S. Department of Education. Retrieved October 10, 2009 (<http://nces.ed.gov/nationsreportcard/pdf/main1994/96085.pdf>).

Office of Educational Research and Improvement. National Center for Education Statistics. 2001. The Next Generation of Citizens: NAEP Civics Assessments—1988 and 1998, NCES 2001—452, by A.R. Weiss, A.D. Lutkus, W.S. Grigg, and R.G. Niemi. Washington, DC: U.S. Department of Education. Retrieved October 10, 2009 (<http://nces.ed.gov/nationsreportcard/pdf/main1998/2001452.pdf>).

Ravitch, Diane and Chester E. Finn Jr. 1987. *What do our 17-year-olds know?* New York: Harper & Row.

Safier, David. 2009. "Fooled Gold? Another look at the G. I. Civics Test." Phoenix: Blog for Arizona. Retrieved November 28, 2009 (<http://arizona.typepad.com/blog/2009/11/fooled-gold-another-look-at-the-gi-civics-test.html>).

Silver, Nate. 2009. "Strategic Vision Polls Exhibit Unusual Patterns, Possibly Indicating Fraud." New York: FiveThirtyEight.com. Retrieved November 28, 2009 (<http://www.fivethirtyeight.com/2009/09/strategic-vision-polls-exhibit-unusual.html>).

Thoreau, Henry David. 1850. *Journal*. Reprinted by Princeton, NJ: Princeton University Press, 1981, volume 3.

U.S. News and World Report. 2009. "Bellarmine University". New York: U.S. News and World Report. Retrieved October 20, 2009 (<http://premium.usnews.com/best-colleges/louisville-ky/bellarmino-1954>).

Weissman, Michael. 2009. "Seen Through Sharper Statistical Lens, Anomalies in Strategic Vision Polling Remain." New York: FiveThirtyEight.com. Retrieved November 28, 2009 (<http://www.fivethirtyeight.com/2009/10/seen-through-different-statistical-lens.html>).