



Overcoming Non-Response: Lessons Learned Migrating to a Web-Based Platform and Offering a Multi-Ethnic Response Option

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Ellen A. Sawtell, Viji Sathy, and David A. Skrobela

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The Numbers

- Nearly 1.5 million students graduate each year having taken the SAT®
- When students register to take the SAT, they are asked to fill out a 42-item questionnaire
- In the mid-1990s, web registration for the SAT began
- By 2002, 44% of the graduating cohort registered on the web

The Population & The Instrument

- The SAT is primarily taken by juniors and seniors in high school
- The SAT¹ is a test that measures critical reading, math, and writing
- The SAT questionnaire includes questions about:
 - High school coursework and activities
 - College preferences and aspirations
 - Demographic information

¹ Writing was added in March 2005

Reports on the Cohort

- Summary reports are produced based on the graduating class of seniors
 - If you last took the SAT as a junior (in January 2005) your scores will be part of a summary report on all seniors graduating in 2006
- Issue-Time lag for results
 - Impact of questionnaire modification in 2003 has impact on about 75% students

Web increase → Non-response increase

- Key questions in which non-response caused the most concern:
 - Ethnicity
 - Mother's Education
 - Father's Education
 - Parental Income
 - High School GPA
 - First Language Spoken
 - Best Language Spoken

The Web Questionnaire in 2002-03

Describe Yourself

— Select Your Choice —

Languages

What language did you learn to speak first?

- English only
 English and another language
 Another language

What language do you know best?

- English
 English and another language about the same
 Another language

Key research questions were **not required**

...and these questions were scattered across **multiple screens**

What is your parents or guardians' highest level of education?

Education	Mother (or female guardian)	Father (or male guardian)
Grade school	<input type="radio"/>	<input type="radio"/>
Some high school	<input type="radio"/>	<input type="radio"/>
High school diploma or equivalent	<input type="radio"/>	<input type="radio"/>
Business or trade school	<input type="radio"/>	<input type="radio"/>
Some college	<input type="radio"/>	<input type="radio"/>
Associate or two-year degree	<input type="radio"/>	<input type="radio"/>
Bachelor's or four-year degree	<input type="radio"/>	<input type="radio"/>
Some graduate or professional school	<input type="radio"/>	<input type="radio"/>
Graduate or professional degree	<input type="radio"/>	<input type="radio"/>
I don't know.	<input type="radio"/>	<input type="radio"/>

[Reset](#)
[Reset](#)

Grade Point Average

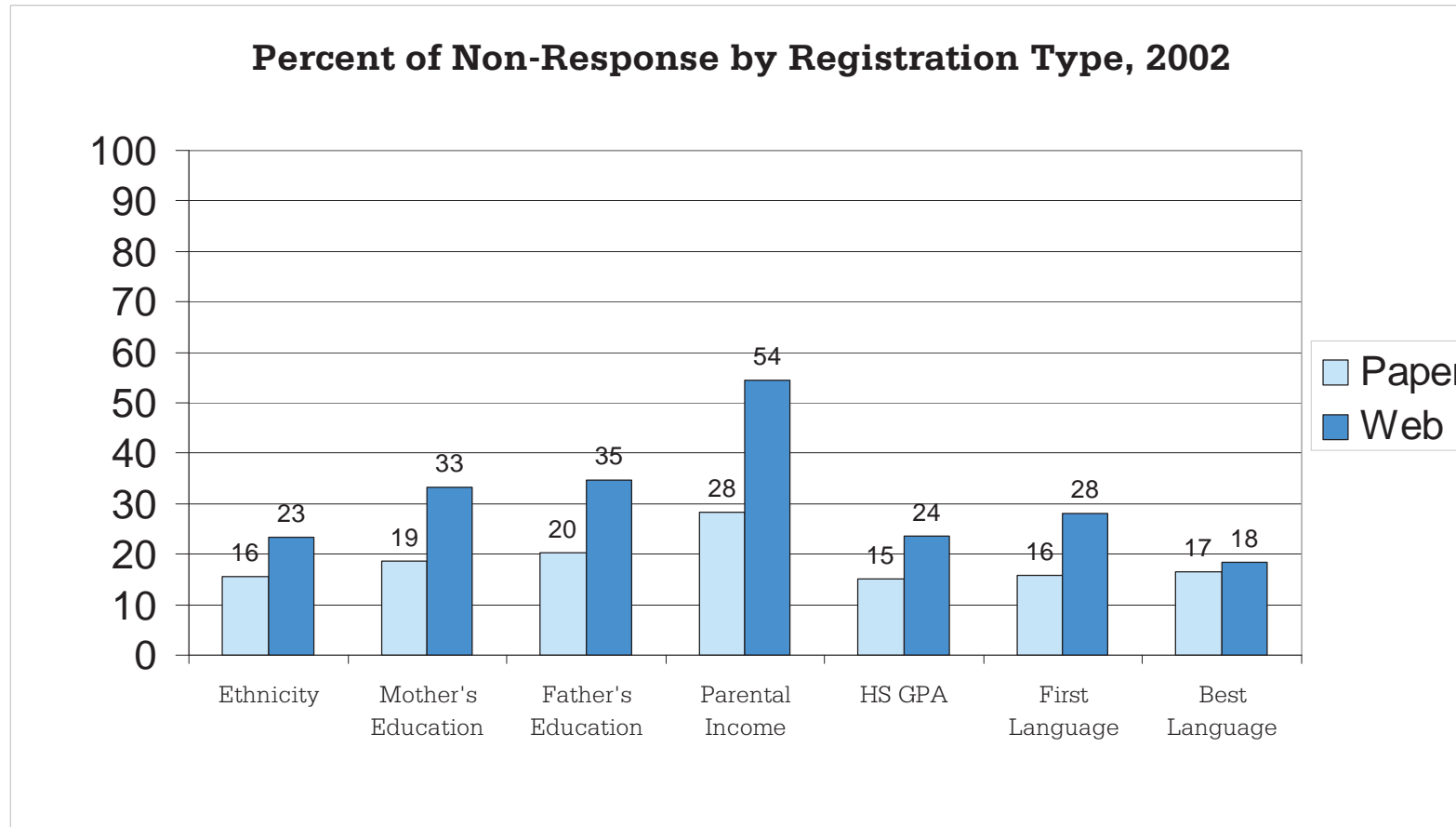
Select your cumulative high school average for all academic subjects.

- A+ 97-100
 A 93-96
 A- 90-92
 B+ 87-89
 B 83-86
 B- 80-82
 C+ 70-79
 C 73-76
 C- 70-72
 D+ 67-69
 D 65-66
 E/F Below 65

What is the approximate combined income of your parents before taxes last year?

<input type="radio"/> Less than \$10,000	<input type="radio"/> About \$40,000 to \$50,000
<input type="radio"/> About \$10,000 to \$15,000	<input type="radio"/> About \$50,000 to \$60,000
<input type="radio"/> About \$15,000 to \$20,000	<input type="radio"/> About \$60,000 to \$70,000
<input type="radio"/> About \$20,000 to \$25,000	<input type="radio"/> About \$70,000 to \$80,000
<input type="radio"/> About \$25,000 to \$30,000	<input type="radio"/> About \$80,000 to \$100,000
<input type="radio"/> About \$30,000 to \$35,000	<input type="radio"/> More than \$100,000
<input type="radio"/> About \$35,000 to \$40,000	<input type="radio"/> I don't know.

Web increase → Non-response increase



Actions Taken to Intervene

- In 2002-03, a committee met to identify which questions are needed most for scoring, test validity, and equity
- In May 2003, questions on the web were reordered, moving seven key questions to the beginning

Changes Applied to Questionnaire

- Noted 'For research only' on parental questions
- Removed option for students to 'Reset' or respond 'I don't know'
- Added "I do not wish to respond" option
- Removed 'Cancel' option to exit
- Required all first-time web registrants to go to questionnaire
- If respondent left 'key questions' blank, question reloads

A Current Look at the Web Questionnaire

DESCRIBE YOURSELF ? Help

Please choose a response from the menu below:

* Required

FOR RESEARCH ONLY ? Help

Your answers to the following three questions will be used for research purposes only, in ways that ensure your privacy. They will not be sent to your high school or any colleges.

Mother's (or female guardian's) highest level of education:

* Required

Father's (or male guardian's) highest level of education:

* Required

Approximate combined income of your parents before taxes last year. Include taxable and nontaxable income from all sources:

* Required

GRADE POINT AVERAGE ? Help

Please select a grade point average. * Required

<input checked="" type="radio"/> A+ (97-100)	<input type="radio"/> C (73-76)
<input type="radio"/> A (93-96)	<input type="radio"/> C- (70-72)
<input type="radio"/> A- (90-92)	<input type="radio"/> D+ (67-69)
<input type="radio"/> B+ (87-89)	<input type="radio"/> D (65-66)
<input type="radio"/> B (83-86)	<input type="radio"/> E/F (Below 65)
<input type="radio"/> B- (80-82)	<input type="radio"/> I do not wish to respond
<input type="radio"/> C+ (77-79)	

LANGUAGES

What language did you learn to speak first? * Required

English only

English and another language

Another language

I do not wish to respond

What language do you know best? * Required

English

English and another language about the same

Another language

I do not wish to respond

• All key research questions are required

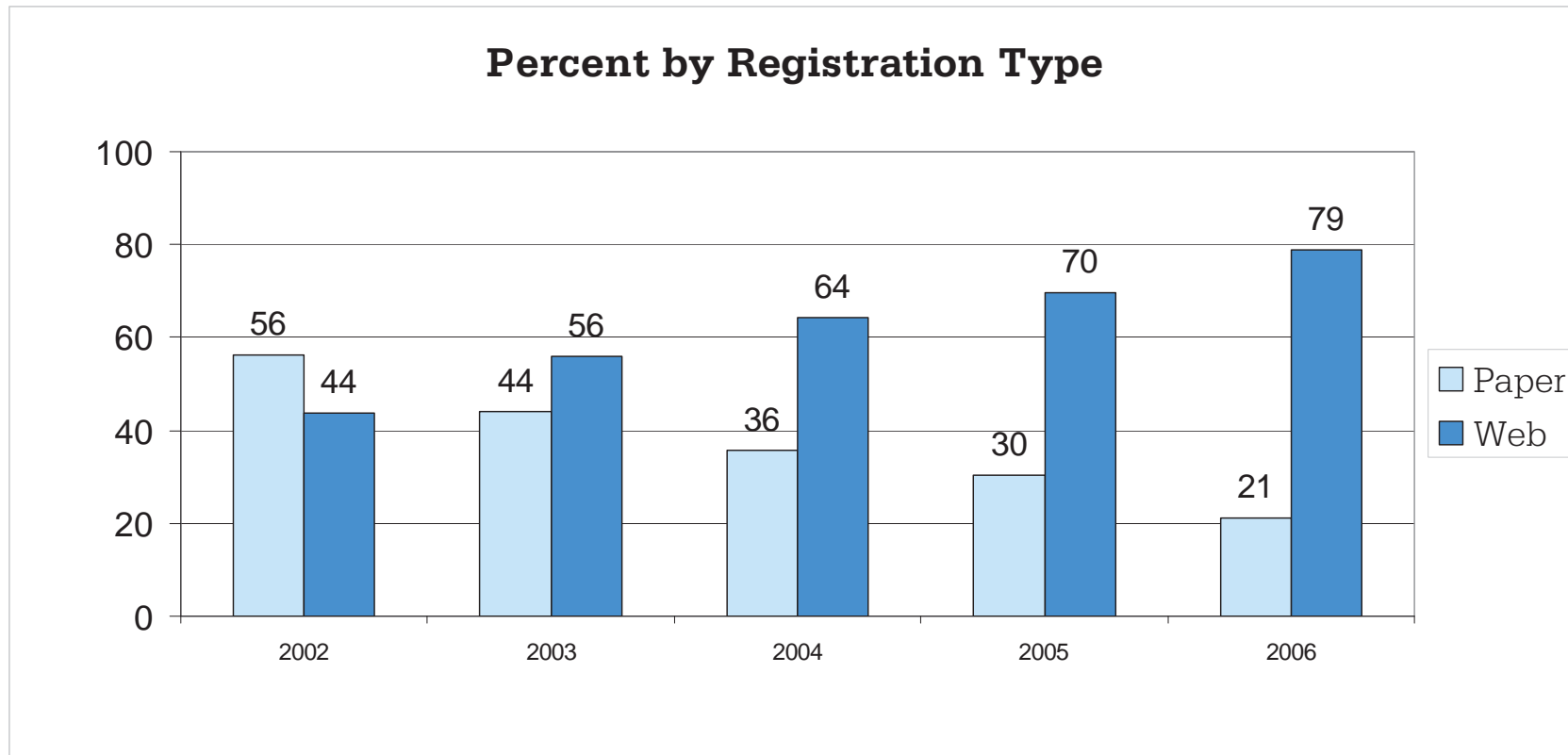
• Language is included, to indicate that some of the questions are for 'Research purposes only'

• All questions are on the (same) first screen of the Web questionnaire

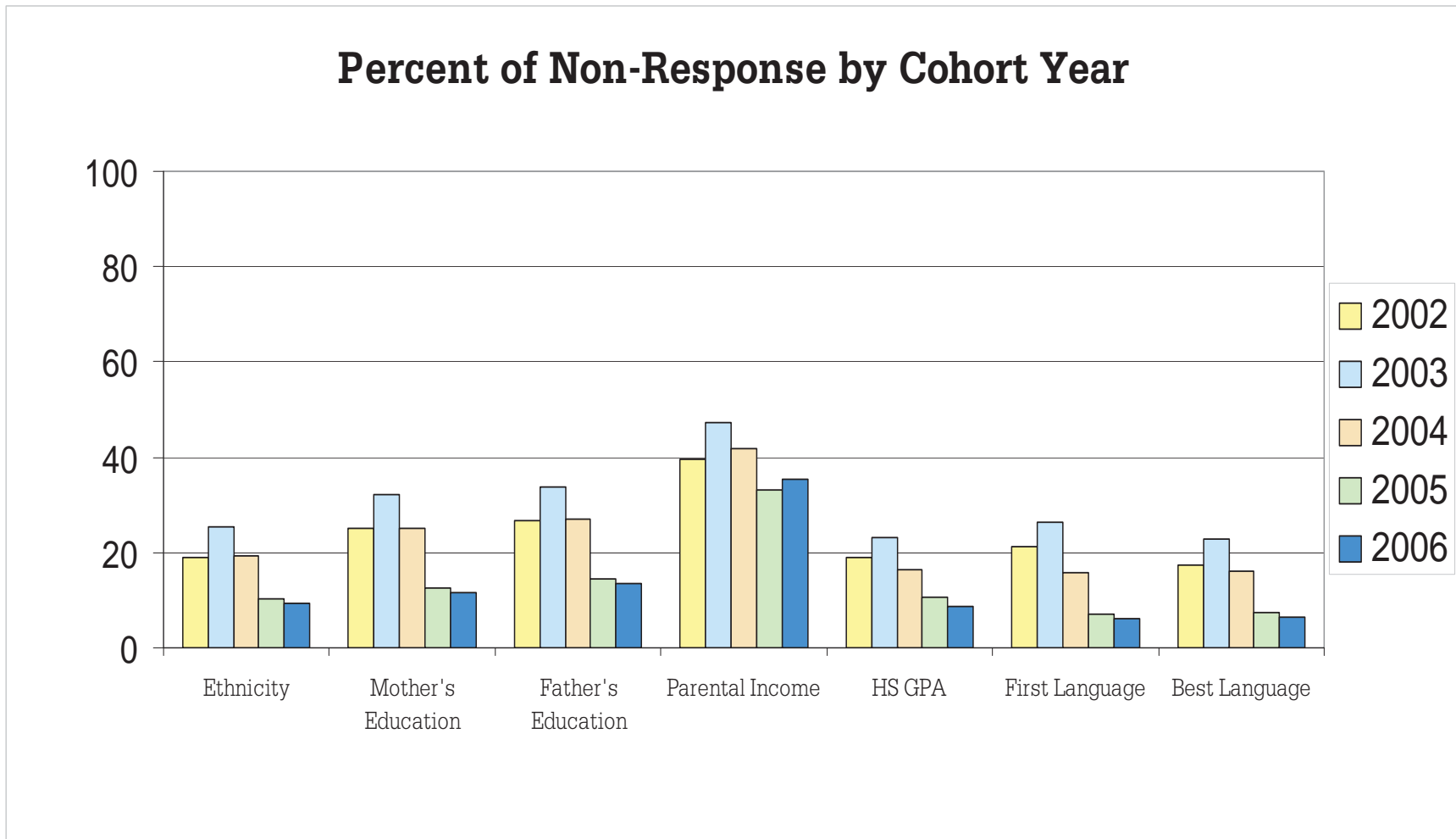
Two Years Ago We Committed To:

- Review non-response percent in the 2005 cohort
- Current effort underway to see if the question prompt is contributing to non-response in the ethnicity question
- Explore ways to match students as they come to the website to answer the questionnaire a little at a time

Registration Patterns have changed dramatically over the last 5 years



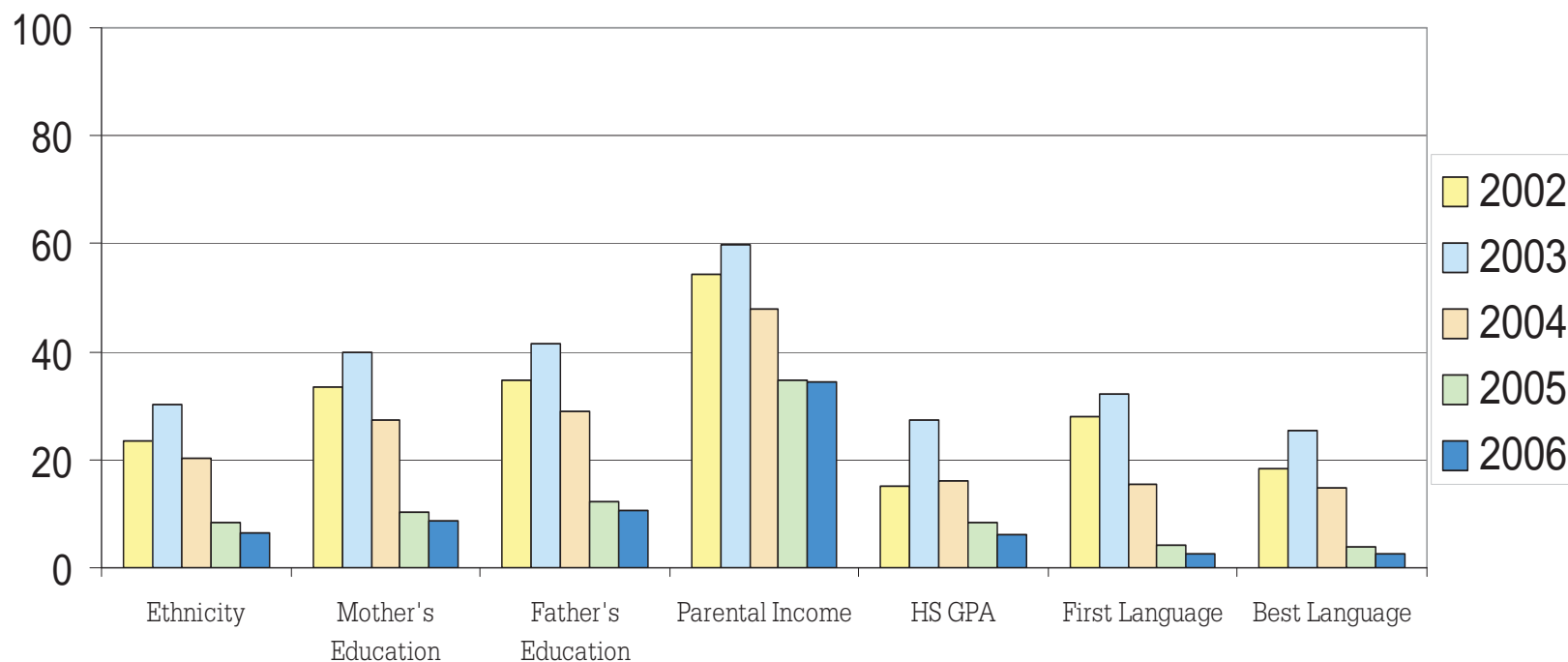
Non-Response in Key Questions²



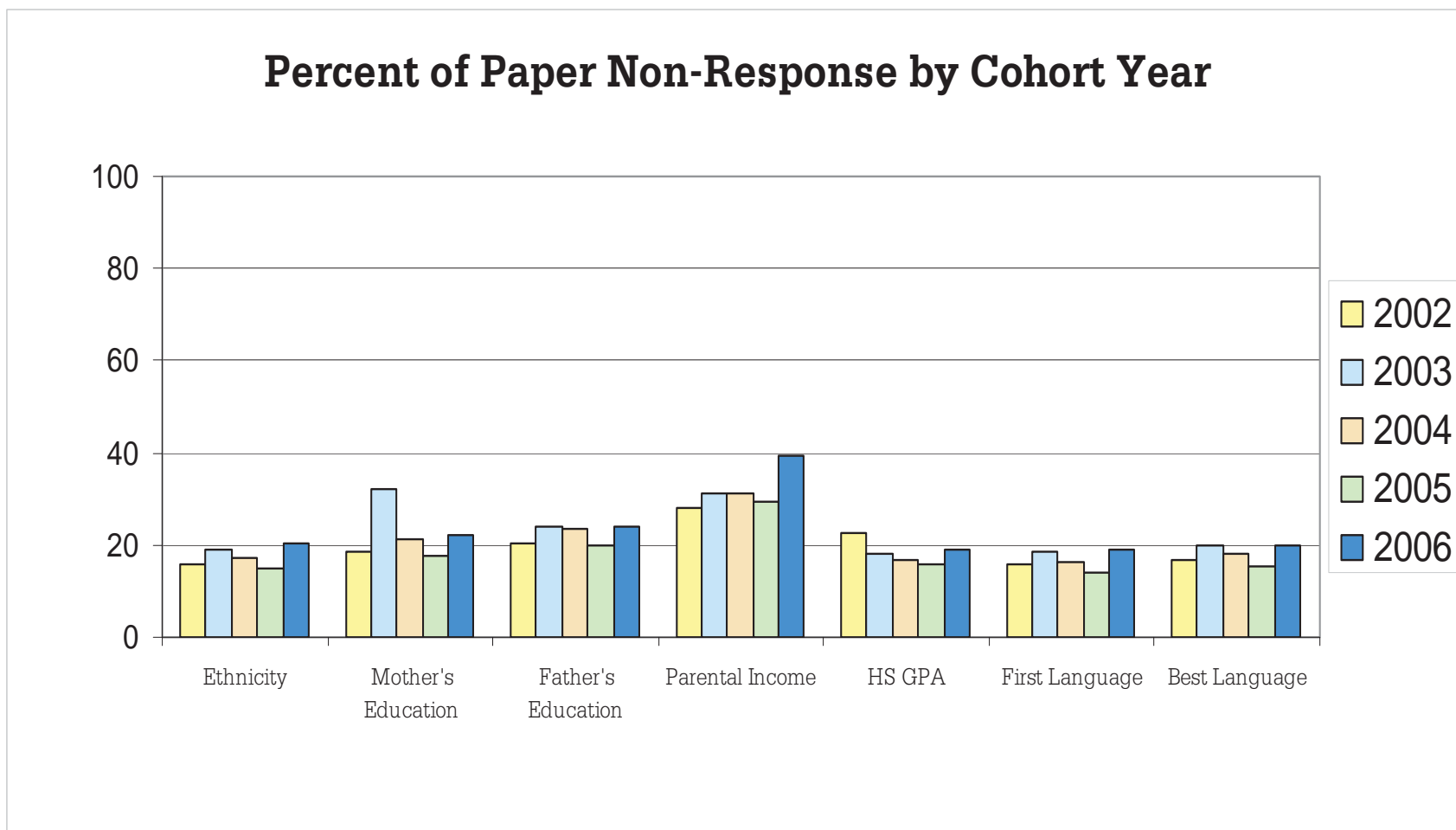
² GPA moved from item #1 to #5

Non-Response in Key Questions (Web)

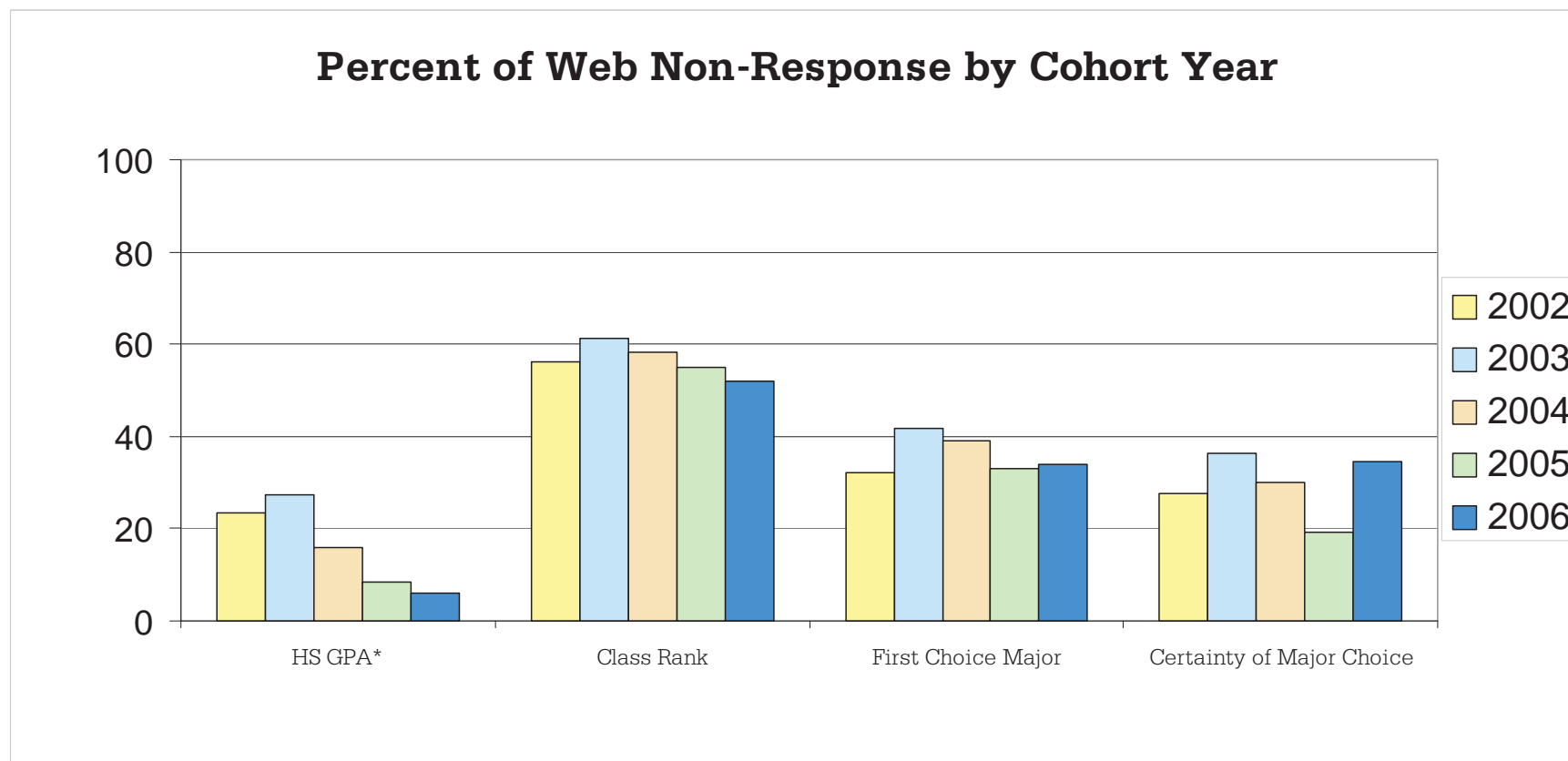
Percent of Web Non-Response by Cohort Year



Non-Response in Key Questions (Paper)



Non-Response in Questions that moved back³



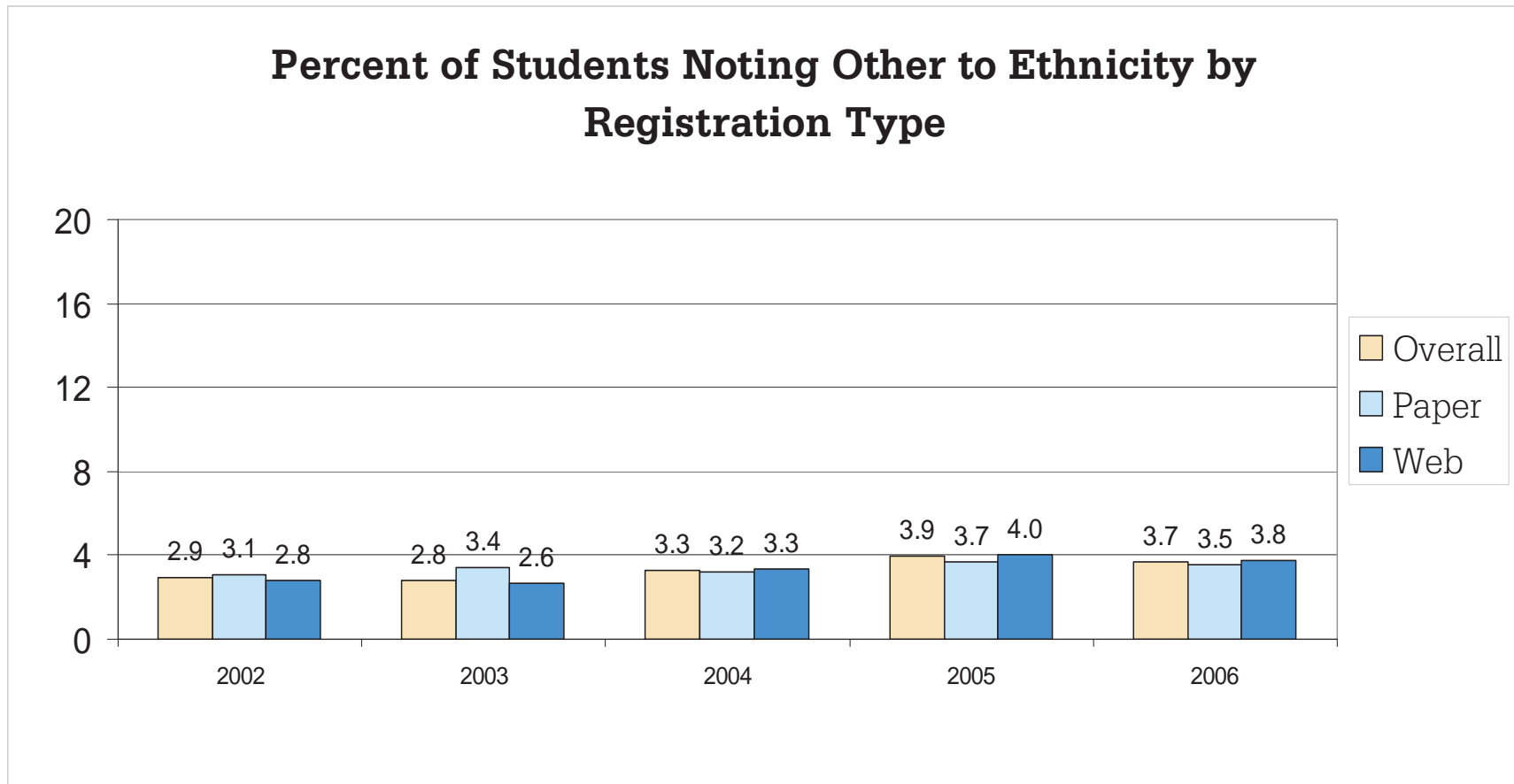
³ Questions that moved to accommodate key questions; does not include 4 alternate major questions

*GPA moved from item #1 to #5

What's a Researcher To Do?

- When you have so much to ask:
 - Identify most important items and ask them first
 - Identify core questions and link answers over time with unique identifier
 - Explore feasibility of adding 'I do not wish to respond' and/or reloading question once

Response Rate vs. Question Bias



Special Study to Examine Multi-Ethnic Response Option

- In October 2005, the College Board conducted a study evaluating two different question formats enabling students to indicate multiple ethnicities.
- Students nationwide participating in the October 2005 SAT test administration had one of two ethnicity questions printed on the last page of their test booklet.

Instructions appearing on the last page of the test booklet:

The following questions are for research purposes only. Answering is voluntary and will not affect your scores in any way. The College Board is trying to determine how best to collect information about students to ensure that our tests and services are useful to all. Your responses will be kept confidential and will not be shared with anyone outside the College Board. Please mark your answers in the space provided on page 8 of your answer sheet. Thank you for your assistance.



(Back of Answer Booklet)

2-Part Question

1. How do you describe yourself? (Select ALL that apply.)
 - (A) American Indian or Alaska Native
 - (B) Asian, Asian American, or Pacific Islander
 - (C) Black or African American
 - (D) Mexican or Mexican American
 - (E) Puerto Rican
 - (F) Other Hispanic, Latino, or Latin American
 - (G) White
 - (H) Other
2. Which one of these groups would you say best describes your race/ethnicity? (Mark only one.)
 - (A) American Indian or Alaska Native
 - (B)...

3-Part Question

1. Which one of these groups would you say best describes your race/ethnicity? (Mark only one.)
 - (A) American Indian or Alaska Native
 - (B) Asian, Asian American, or Pacific Islander
 - (C) Black or African American
 - (D) Mexican or Mexican American
 - (E) Puerto Rican
 - (F) Other Hispanic, Latino, or Latin American
 - (G) White
 - (H) Other
2. Are you multi-racial or multi-ethnic?
 - (A) Yes
 - (B) No
3. If you answered yes to question 2, please select ALL of the groups below that describe your race/ethnicity.
 - (A) American Indian or Alaska Native
 - (B) ...

Test-Takers

- Students nationwide participated in the study (N = 484,850).
 - 204,249 responses to 2-part question
 - 199,409 responses to 3-part question
- However, non-response in the study was higher in both formats of the special study questions than non-response in the SAT Q (filled out by students prior to taking the test).

A Look at Non-response in the Study

	Non-Response N	Non-Response %
SAT Q	40,367	8.3
2-part Special Study Question	38,294	15.8
3-part Special Study Question	42,898	17.7

What did responses to the special study questions tell us about ethnic non-responders in the SAT Q?

- A percentage of students who did not indicate an ethnicity prior to test-day did actually respond to the special study ethnicity questions.
- Of those SAT Q Non-Respondents (n = 40,367) who participated in the study:

	N (%) indicating ethnicity	N (%) indicating multiple ethnicities
2-part	14,330 (35.5)	2,219 (5.5)
3-part	14,090 (34.9)	3,308 (8.2)
Total	28,420 (70.4)	5,527 (13.7)

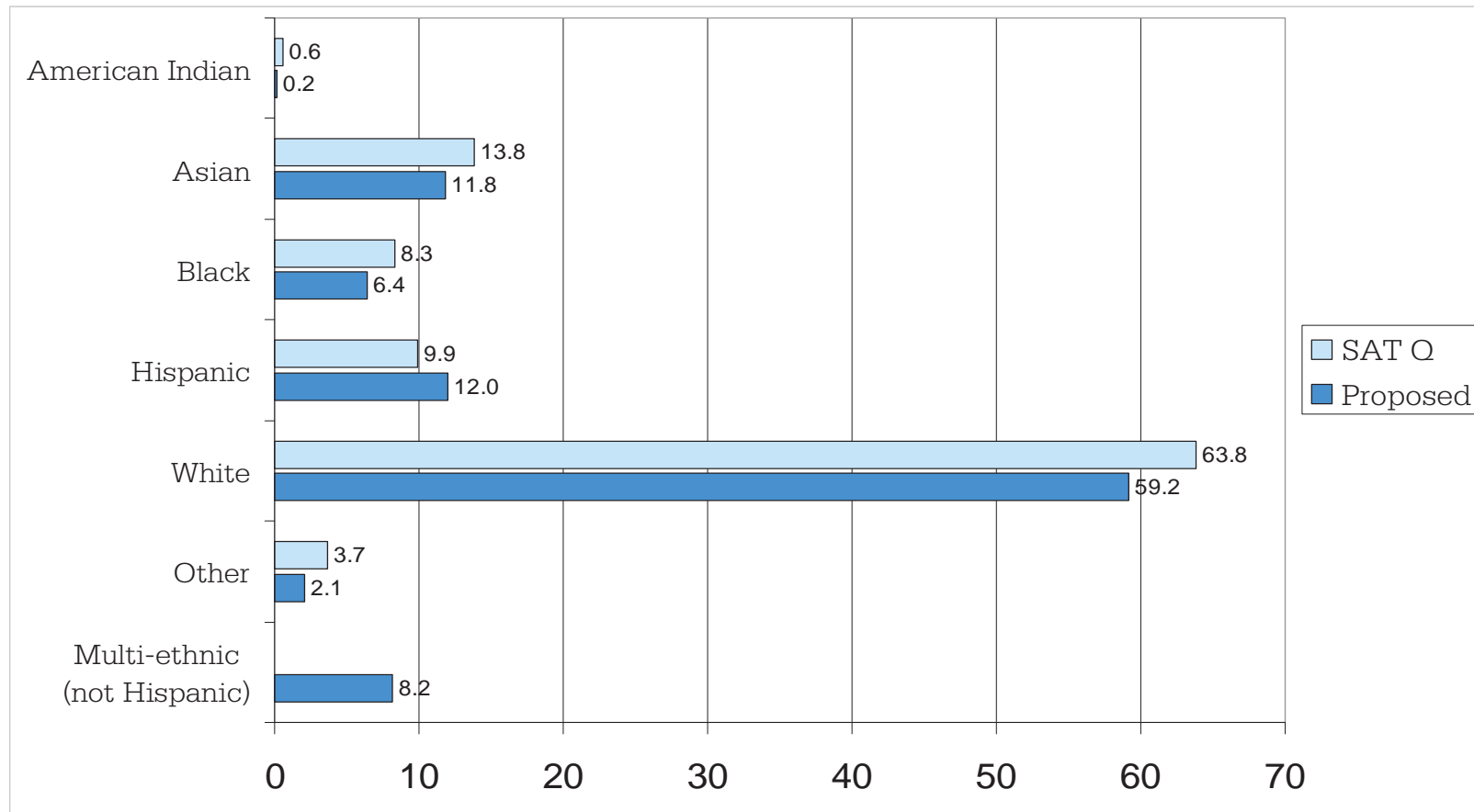
Results

- 77.4% of test-takers responded to the special study questions and the SAT Q (results based on this sample only).
 - 92.2% of these test-takers indicated the same ethnicity in the special study and on the SAT Q.
 - 13.5% of these test-takers moved from a single ethnic/racial category to multiple.
- If we look at the entire sample multi-ethnic/racial students make up 11.8%.

What did students who are multi-ethnic report as their ethnicity in the SAT Q?

	N	%
No Response	5,365	9.4
American Indian	1,178	2.1
Asian American	7,417	12.9
African American	6,996	12.2
Mexican	5,839	10.2
Puerto Rican	1,775	3.1
Other Hispanic/Latino	5,934	10.3
White	16,891	29.5
Other	5,957	10.4
<i>Total</i>	57,352	<i>100</i>

Impact to Proposed Reporting Categories for Ethnicity



Conclusions

- A similar study conducted in 1998 indicated that roughly 4.5% of students were multi-ethnic.* This current study suggests that this group may have tripled in 7 years.
- It is clear that the U.S. population is shifting and current data collection and reporting practices do not accurately capture this population.
- Collecting multi-ethnic data, however, can present a challenge.
 - Students may not respond, or respond inappropriately (checking all boxes)
 - It is unclear how data on these students should be reported or studied

*Wendler, Feigenbaum and Escandon (2001).

Future Research

- Explore ways to match students as they come to the website to answer the questionnaire a little at a time
- Collect multi-ethnic/multi-racial in “pilot” format for an extended period of time (1-2 yrs) in order to analyze in further detail
- Identify ways to capture multi-ethnic/multi-racial data without compromising trend data

Questions, Comments, Suggestions

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