

Content Comprehension Strategy Intervention: A Model for Developmental Reading

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*National Association of Developmental Education (NADE)
Annual Conference 03-12-2010*

The research reported here was supported by the Institute of Education Sciences, U.S. Department of Education, through Grant R305G060106 to Teachers College, Columbia University. The opinions expressed are those of the authors and do not represent views of the Institute or the U.S. Department of Education.

Content Comprehension Strategy Intervention (CCSI)

- Purpose: prepare upper-level developmental reading and developmental English students for comprehension of dense, expository text; provide sustained practice in a single content area

- Developed in collaboration with a panel of developmental education and disciplinary faculty
- Several iterations, revisions based on data, and review by instructors and external consultants
- Fully-developed intervention now available (IES “Goal 2” project)

- Three Development Sites:
 - Bronx Community College
 - Norwalk Community College
 - Los Angeles Pierce College

Theoretical Context

- Close relationship of reading and writing ability (Fitzgerald & Shanahan 2000)
- Teaching writing and reading comprehension together promotes learning of content (De La Paz, 2007; Klein, 2000; Nokes, Dole & Hacker, 2007)
- Written summarization reveals level of text comprehension (Brown & Day, 1983)
- Literacy performance affected by level of engagement (Guthrie et al., 2004)
- Contextualized instruction may promote learning

Contextualization

- Definition: “developing new skills, knowledge, abilities, and attitudes in students by presenting new subject matter in meaningful and relevant contexts: contexts of previous experience, real-life, or the workplace” (Carrigan, 2008, p. 1)
- Material presented in the context of what is required and relevant in a selected area

- Concept of contextualization has been discussed since the late 1800s (John Dewey)
- Now used in Career and Technical Education more than traditional academic programs
- Has potential for developmental education students

Characteristics of CCSI

- Curricular supplement
 - 10 units designed for use over one semester, approximately 2 hours per unit
- Self-directed, self-paced
- Can be adapted for use with a variety of content-area texts

Focus of the Intervention (Three Key Skills)

- Written Summarization
 - Supporting the search for main ideas in a source text
 - Supporting comprehension strategies
- Vocabulary development
- Question-formulation

Other Skills

- Traditional reading comprehension practice (multiple-choice questions)
- Writing of paragraphs to express opinions on controversial topics, self-scoring to increase awareness of quality requirements

Contextualization in CCSI

- Two kinds of contextualization
 - Single theme – Science text (introductory anatomy and physiology)
 - Multiple themes – Generic text from developmental education textbooks
- Recommendation: use either science or generic, not mixture

Contextualization, cont'd

- Within each unit, all skills contextualized in a single text

Anatomy and Physiology Text

- Less and more difficult text on same topic interspersed
 - Odd numbered units: middle-school level
 - Even numbered units: introductory college level
- See units for examples of text (handouts and projected on screen)

Generic Text

- All approximately same level of difficulty, passages taken from developmental education textbooks (see handout and examples projected on screen)

Written Summarization

- Answer main idea questions
- List main ideas
- Write summary with text and answers present

Vocabulary Development

- Student selects words from list, uses dictionary, defines in own words to explain meaning to friend.

Question-Formulation

- Student generates question based on text

Opinion-Paragraph Writing

- Controversial topics
 - Write one or two paragraphs expressing view, reason for view, and three details to support reason
 - Part of full persuasive essay (counterargument and rebuttal not requested in prompt)

Writing Rubric for Opinion-Paragraph Writing

- 6-point rubric based on university measure
- Student scores own opinion paragraphs
- Instructor can also score, and discuss differences between students' and instructor's scores in class

(See handout and unit projected on screen)

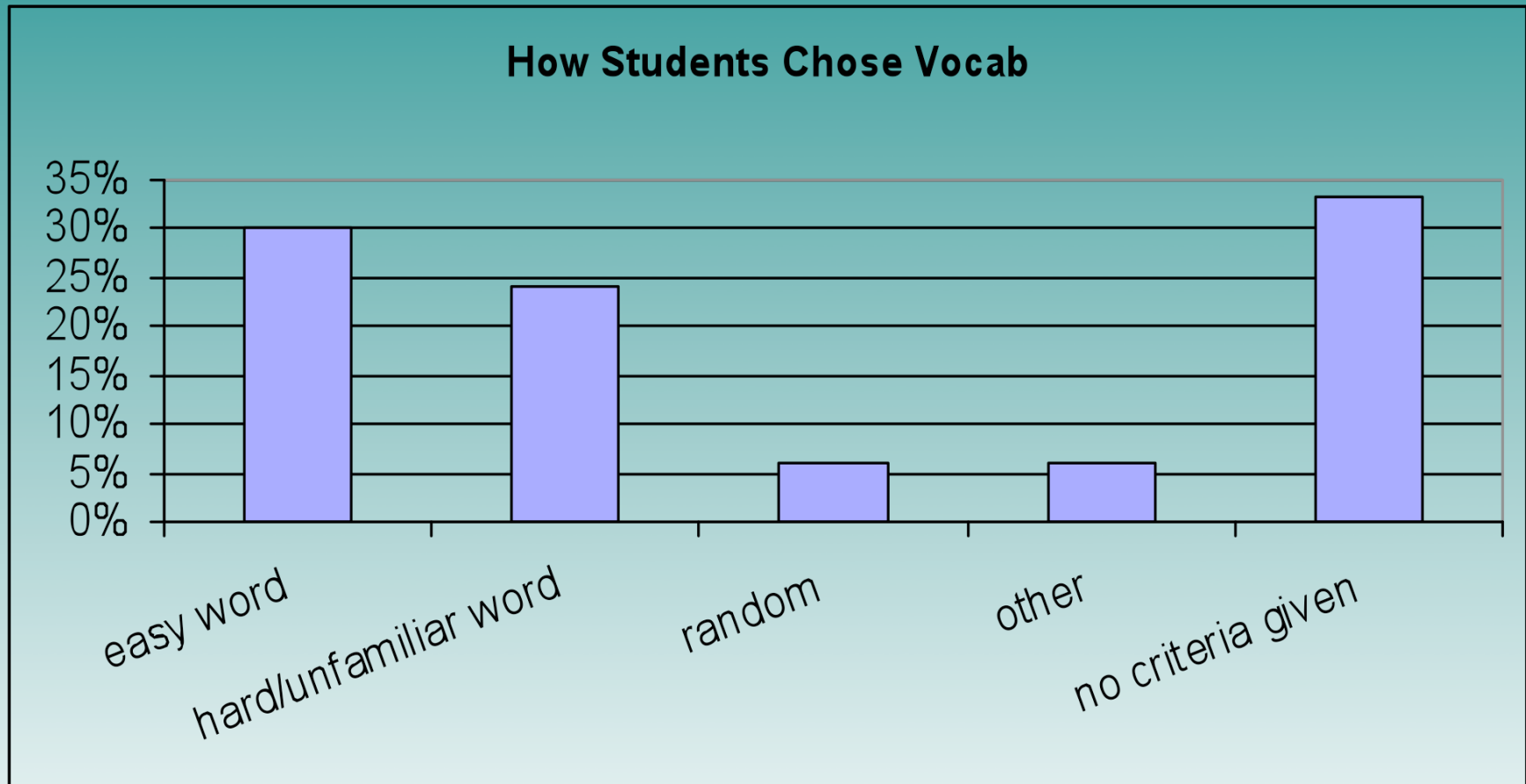
Research on CCSI

- Interviews with students and faculty
- Pre-post gain

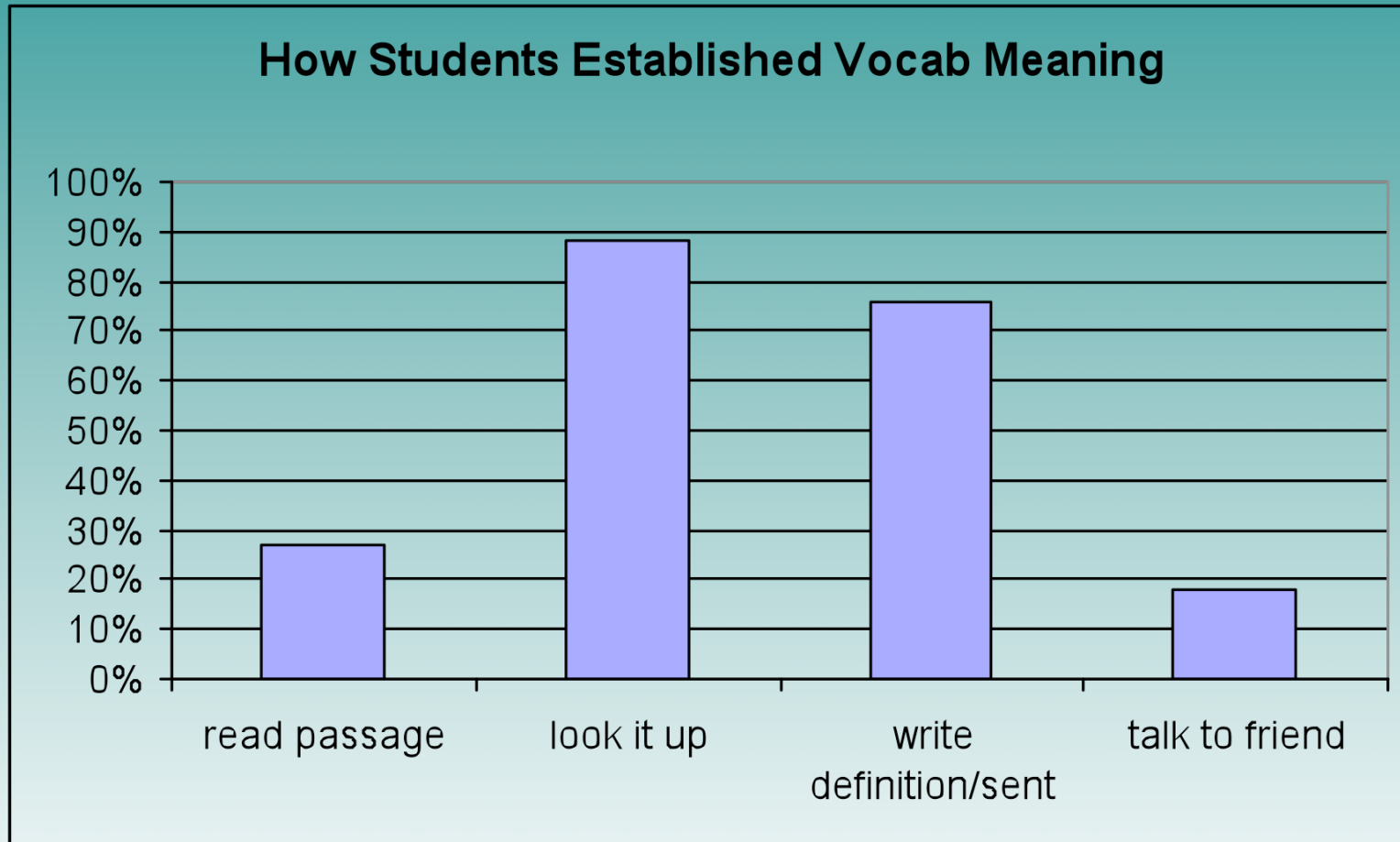
Interviews with Students and Teachers

- What (and when) is a foundational skill? Who teaches it?
- Reading teachers teach reading; writing teachers teach writing.
- Students: I think I know what I know, maybe.
- Teachers: We think we know what we know, certainly.
- The reflective practitioner, starting when?

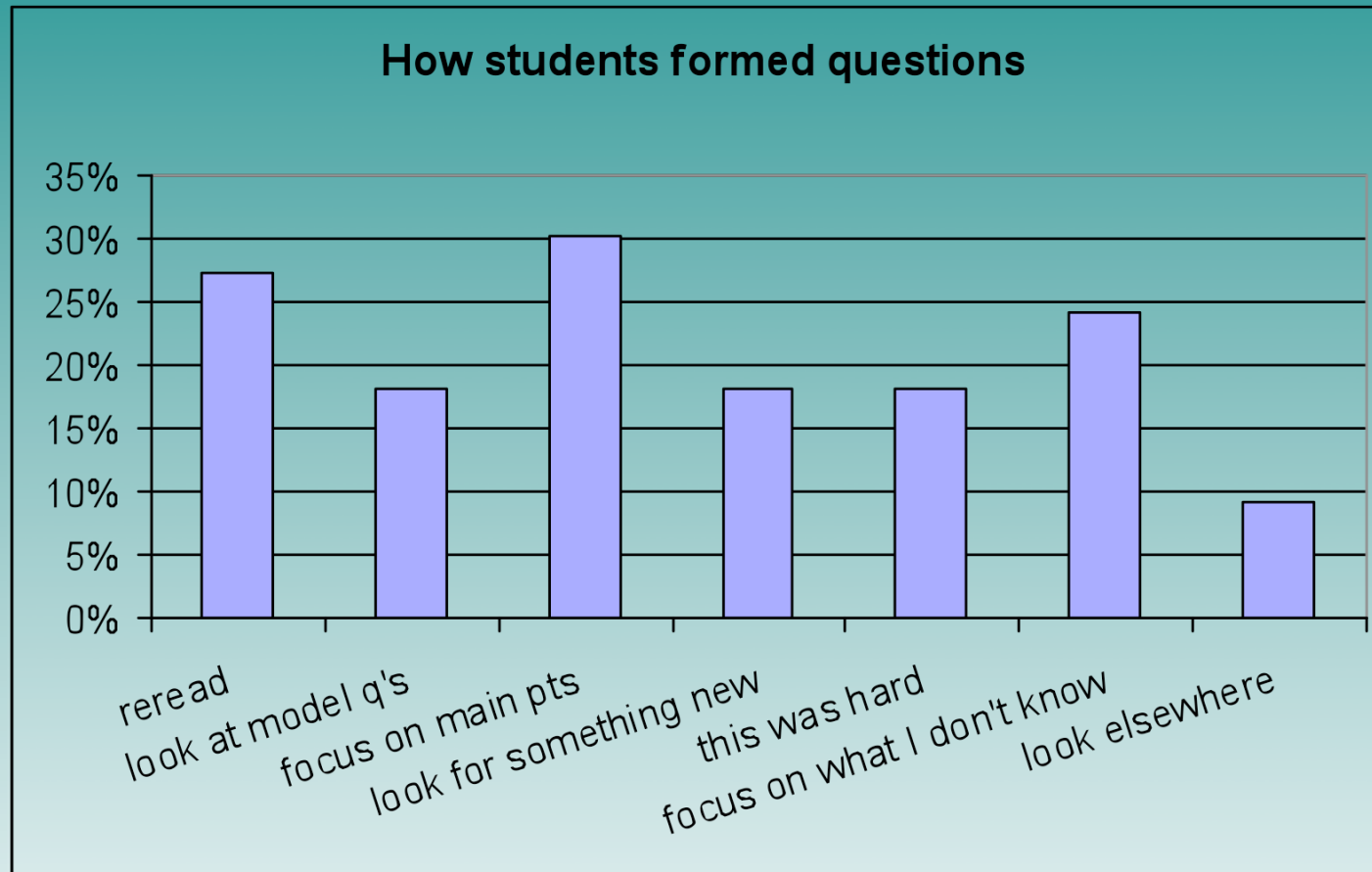
Interviews with Students



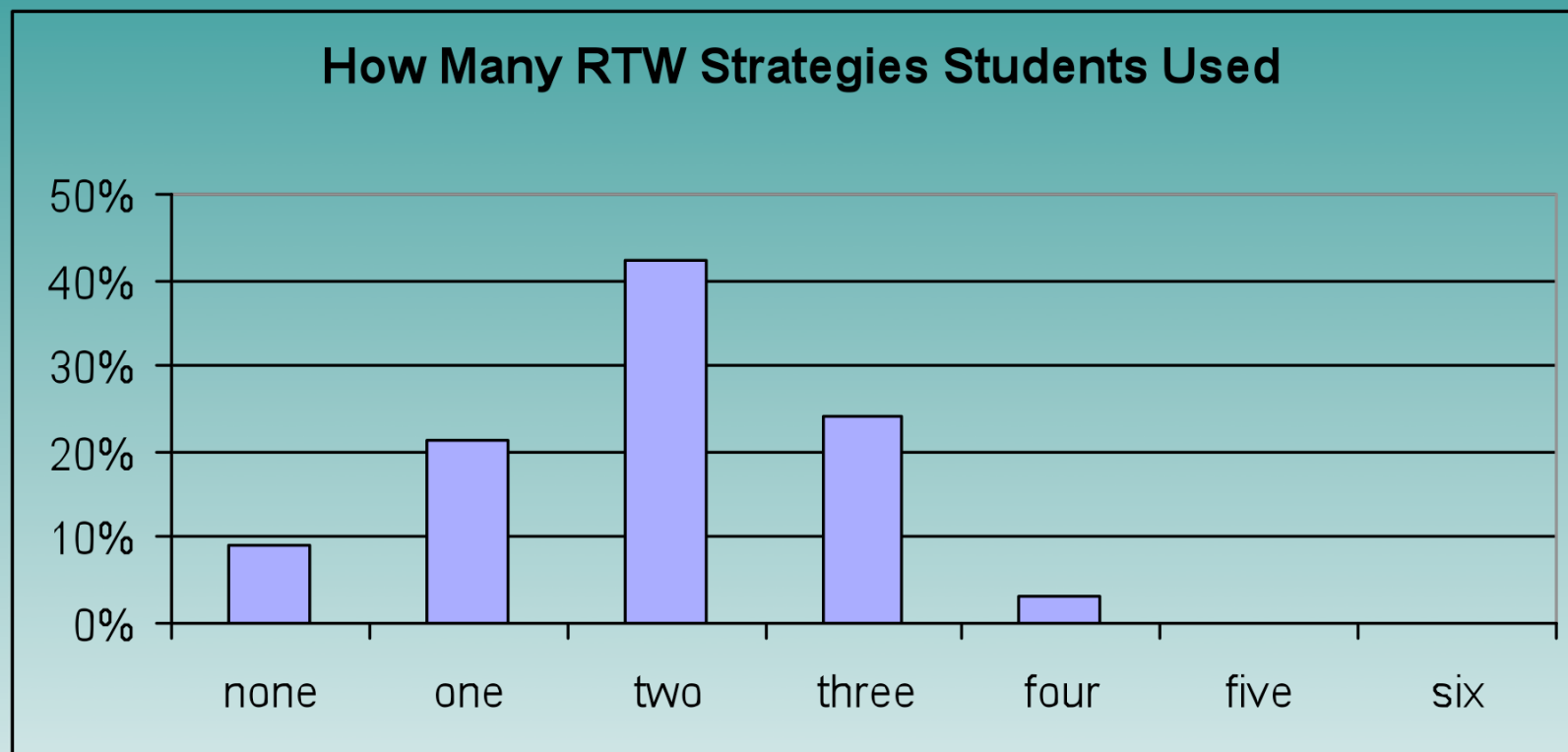
Interviews with Students , cont'd



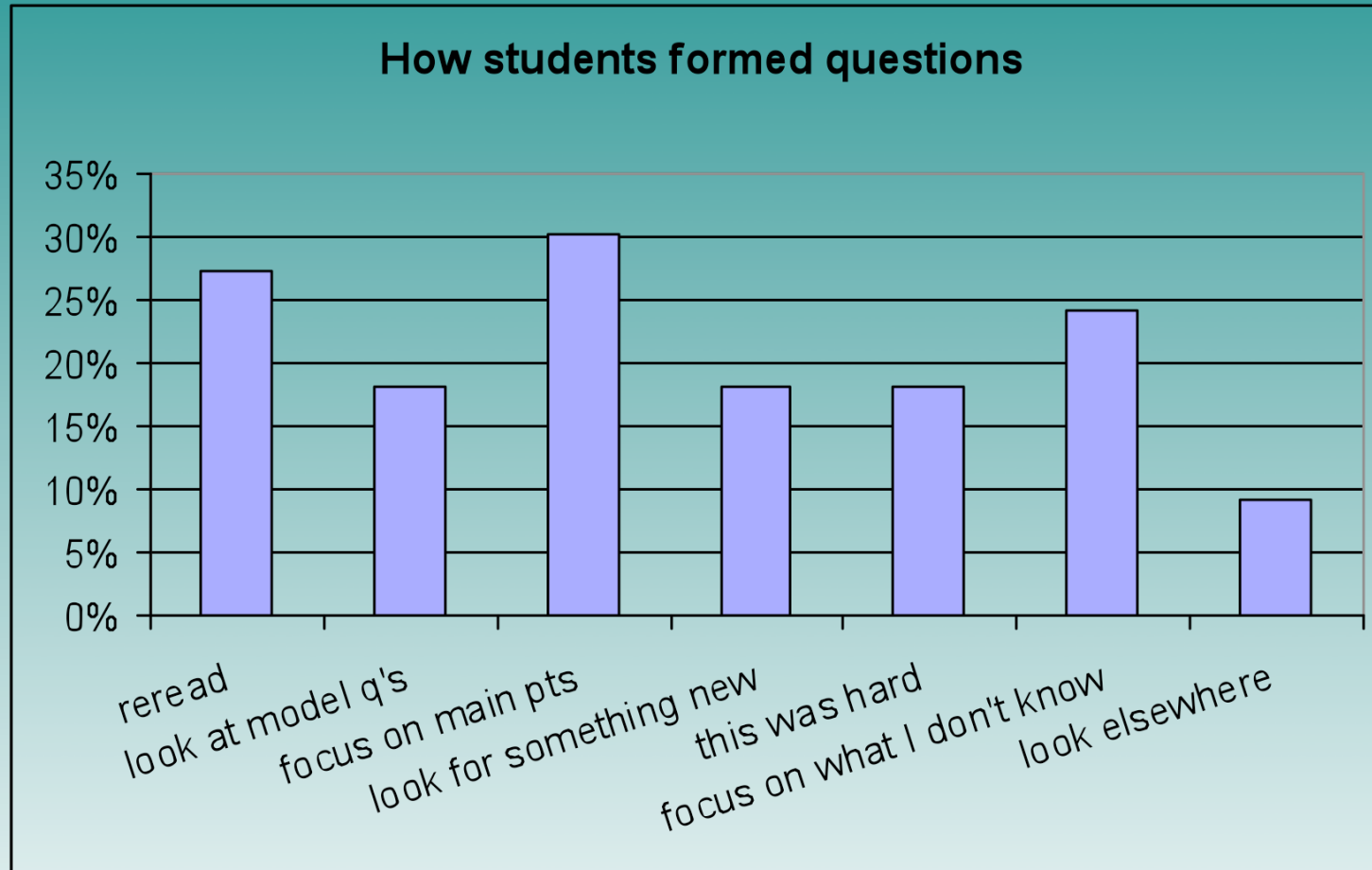
Interviews with Students , cont'd



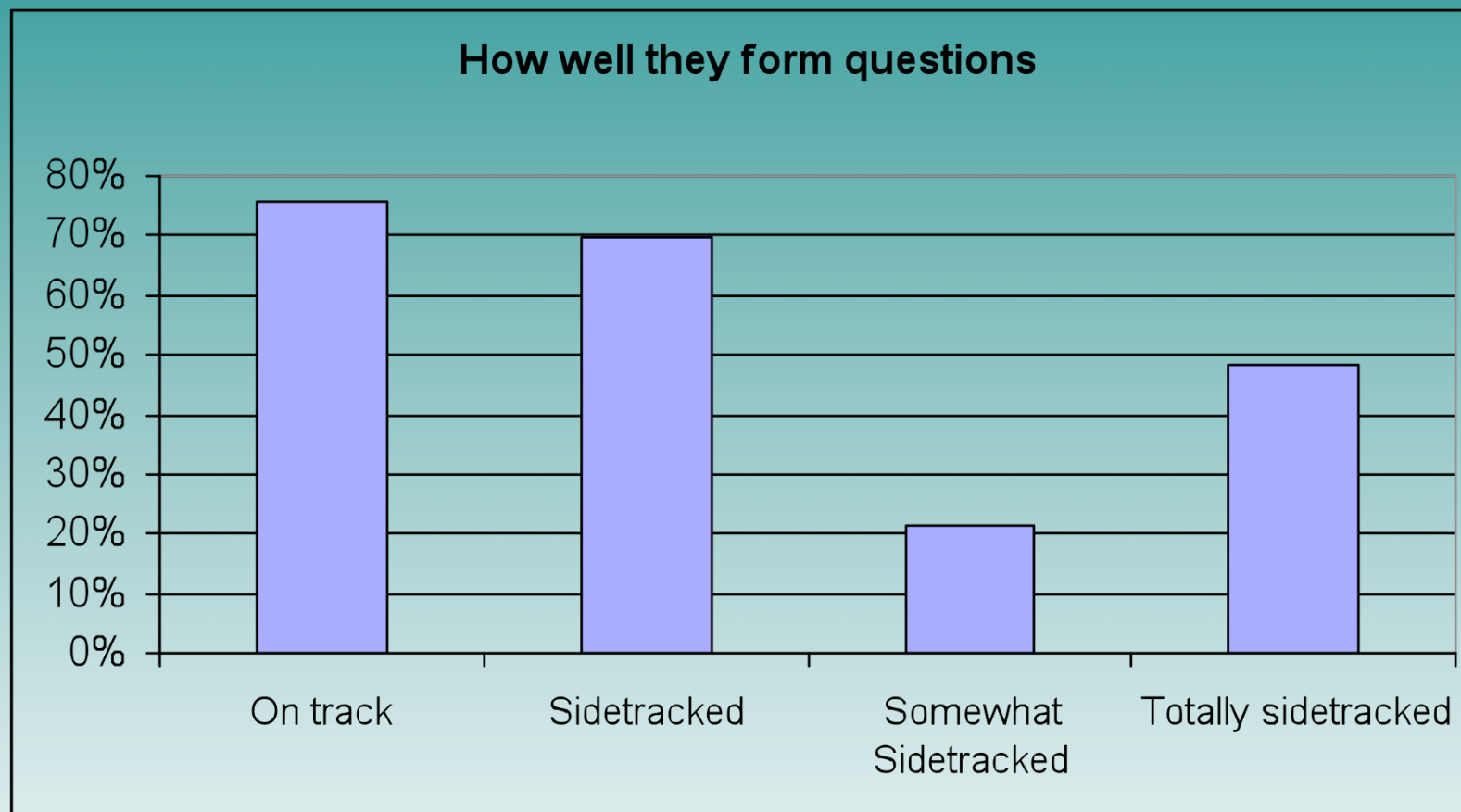
Interviews with Students , cont'd



Interviews with Students , cont'd



Interviews with Students , cont'd



Pre-Post Assessment

- Measures
 1. Written Summarization Test: student asked to write a summary of a passage from introductory college-level anatomy and physiology textbook, with text present
 - Inclusion of main ideas
 - Word count
 - Accuracy
 - Conventions
 - Paraphrasing

Measures, cont'd

2. Nelson-Denny Reading Test – generic text, addresses question of transfer of skill to different type of reading
 - Two scales: Comprehension and Vocabulary
 - Summed to create Total score

Pre-Post Change Within Subjects: Statistically Significant Results

- Inclusion of main ideas in written summary
 - Intervention group went from including 43% to 50% of the main ideas from source text
 - Comparison group did not change from pre to post (42% of main ideas)

Amount of Pre-Post Gain

Science Text vs. Business-as-Usual Comparison Group

- Analyses of post-test, controlling for pre-test, site, age, gender, race/ ethnicity, full- versus part-time college enrollment, and number of prior developmental education credits

Positive Findings for Gain on Written Summarization

- Intervention group included one-third of a standard deviation more main ideas from source text in their written summaries than the comparison group ($ES=0.34$, $p<.01$)

Interpretation: use of the intervention units contextualized in science, led to better written summarization as measured by number of main ideas included in the summary

Written Summarization Findings, cont'd

- Word count
 - Science intervention group wrote 0.42 SD more words in their summaries than the comparison group (ES=0.42, $p<.01$)
- Accuracy
 - Accuracy scores for intervention group were 0.26 SD higher than those of the comparison group, ($p<.05$)

- No difference between groups in gain on conventions or paraphrasing

Findings for Nelson-Denny Reading Text

- There was little gain on this measure, and the groups did not differ significantly.
 - Little generalization of skill from intervention to a generic measure.

Conclusions

- Intervention has positive effects on written summarization, a critical skill for achievement in college-level courses
- Use of intervention is not associated with change on an all-purpose reading test