

K-12 Science
Instructional Materials Review – 2009

Update to the State Board of Education

July 17, 2009

Office of Superintendent of Public Instruction



Big Picture Overview

Science Instructional Materials Review and Recommendations

- **Guiding Legislation:**
 - **2008 Second Substitute House Bill (2SHB) 2598**
 - Revised K–12 science standards presented to Legislature by December 1, 2008
 - Final revised standards adopted by OSPI in June 2009
 - **2009 ESSB 5414, Section 5 (7)(c):**
 - By June 30, 2009 OSPI shall present to the SBE recommendations for no more than three basic science curricula each for:
 - Elementary and Middle Grade Spans
 - Not more than three recommendations for **each of the major high school courses** within the following science domains: Earth and space science, physical science, and life science

Science Key Dates

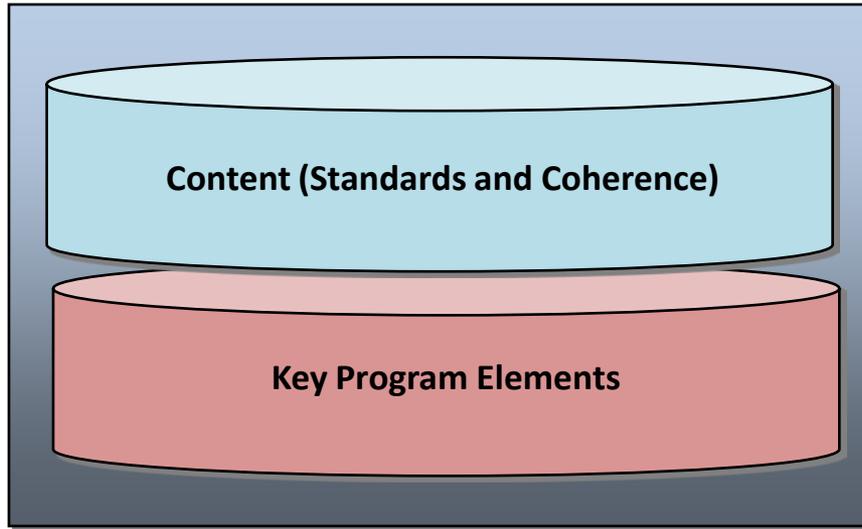
Curricula Recommendations and Instructional Materials Reviews

	K-12 Core Review and Recommendations	K-12 Supplemental Materials Review
Review Week	May 11 – 15, 2009	June 9 – 12, 2009
OSPI shares Preliminary Results with SBE Science Panel - seeks input	Input sought - June 24, 2009	TBD, if necessary
OSPI Presents Core Recommendations to SBE	June 30, 2009	Not applicable
SBE presents official comments to OSPI on recommendations	Within two months of June 30, 2009	Not applicable
OSPI Presents Final Curricula Recommendations	Following SBE comment	Not applicable
OSPI posts Final Reports to the web	Following SBE comment	By July 24, 2009

K-12 Core Review Facts

- ▶ 69 reviewers reviewed 85 individual products (program–grade range) from 20 publishing houses
- ▶ 402 individual readings
- ▶ Over 29,000 data elements collected
- ▶ Each product received 4–5 independent readings
- ▶ Each reading completed in an average of 6 hours

Evaluation Framework



The first two processes occurred during Review Week.



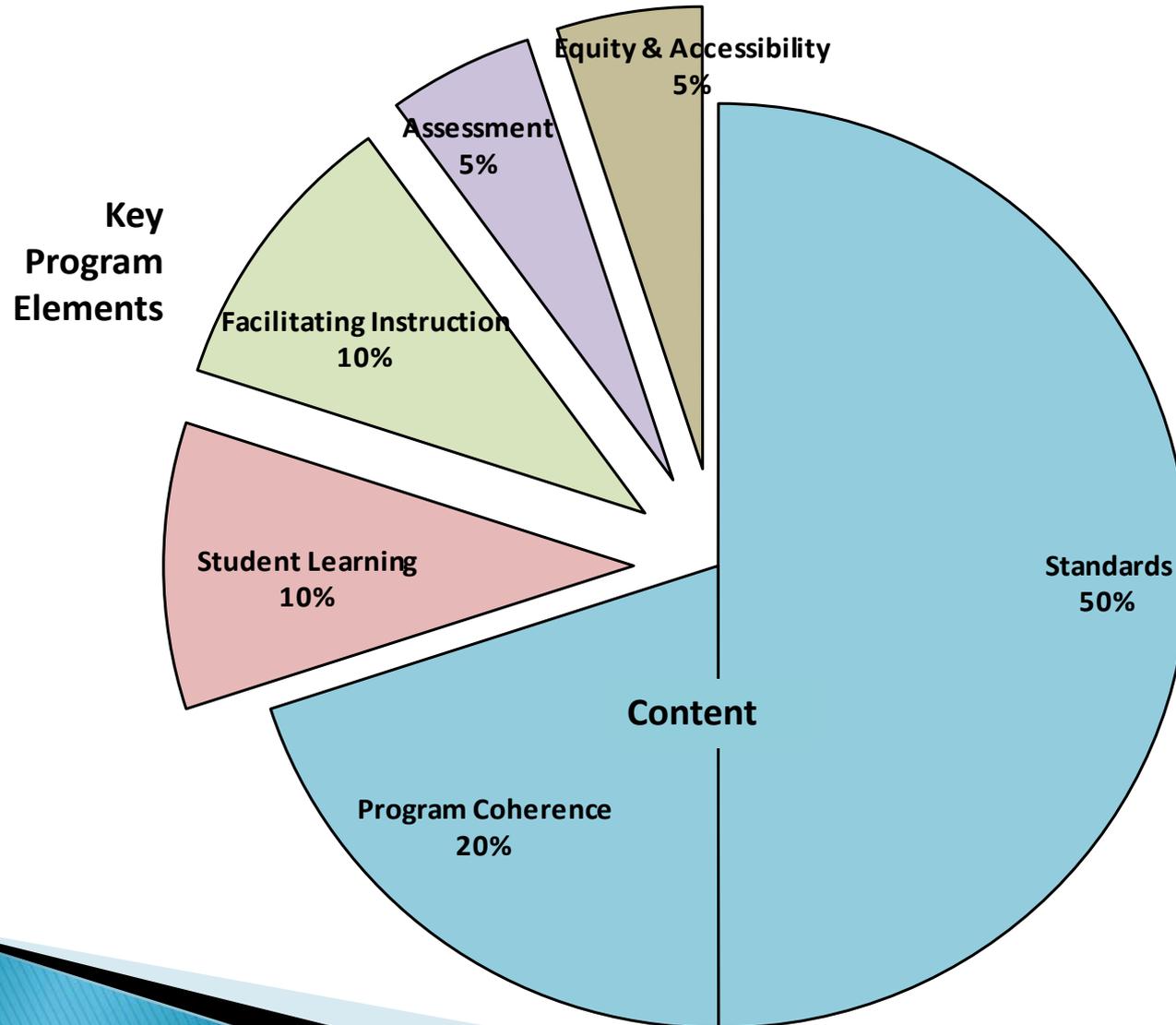
After the Review Week, top scoring programs were reviewed by a small group for conceptual development quality. They created a narrative evaluation.

Evaluation Parameters Defined

- ▶ Content:
 - Standards and Coherence
- ▶ Key Elements:
 - Student Learning
 - Facilitating Instruction
 - Equity and Access
 - Assessment

See page 23–24 of report document.

Scales and Weights



Initial Recommendations

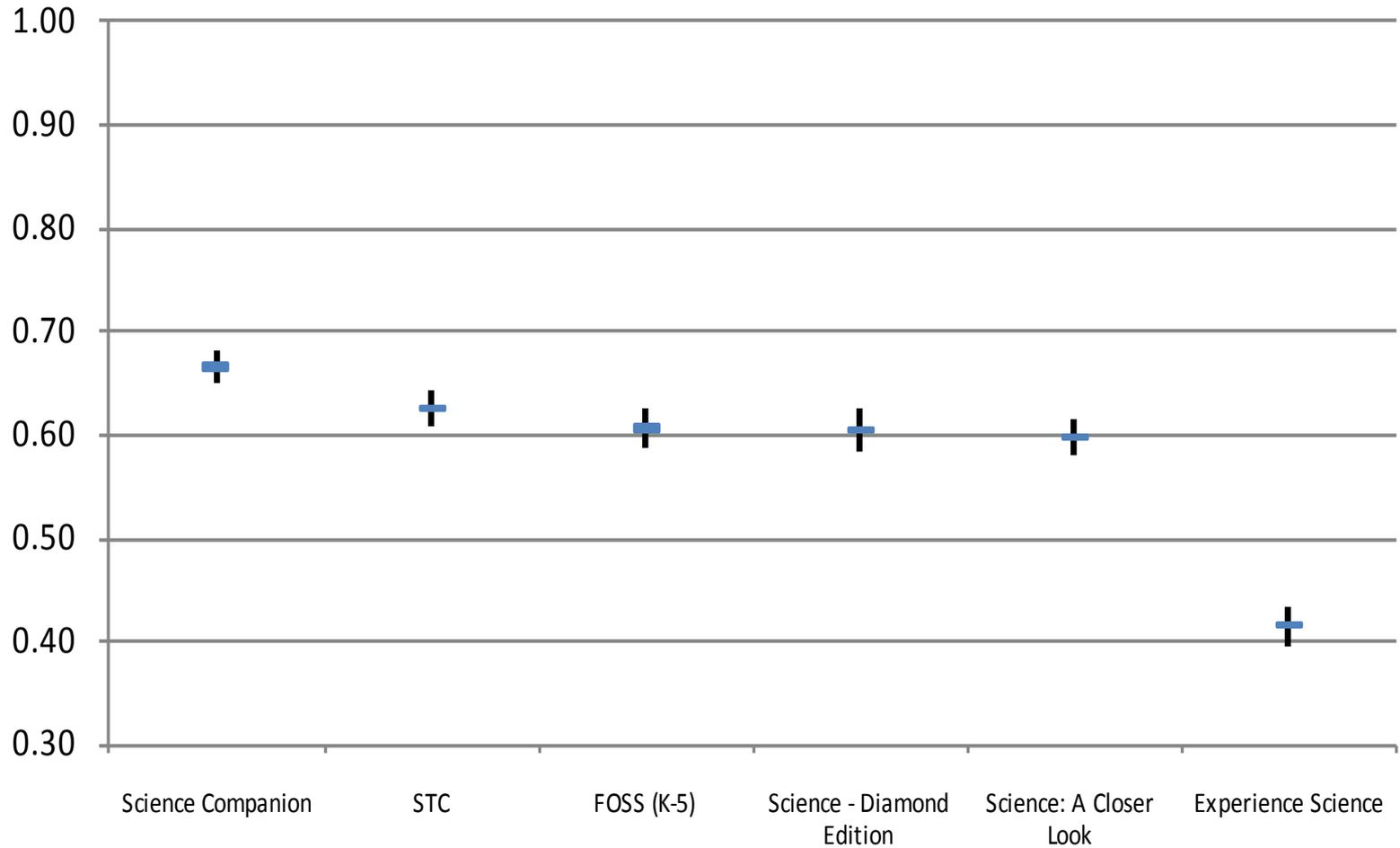
- ▶ Composite Score
 - Content and Key Elements in the pre-determined percentages
- ▶ Initial Selection made on the basis of:
 - A Composite Content Score of 0.7 or above
 - Within a 95% level of confidence

Elementary (K–5) Recommendation

- ▶ None of the materials met the 0.7 Composite Score
 - No preliminary recommendations
 - SBE Science Panel to give input to Superintendent Dorn for final recommendations



Elementary School Composite Scores with 95% Confidence Intervals



Elementary School Curriculum Usage (grades K–5)

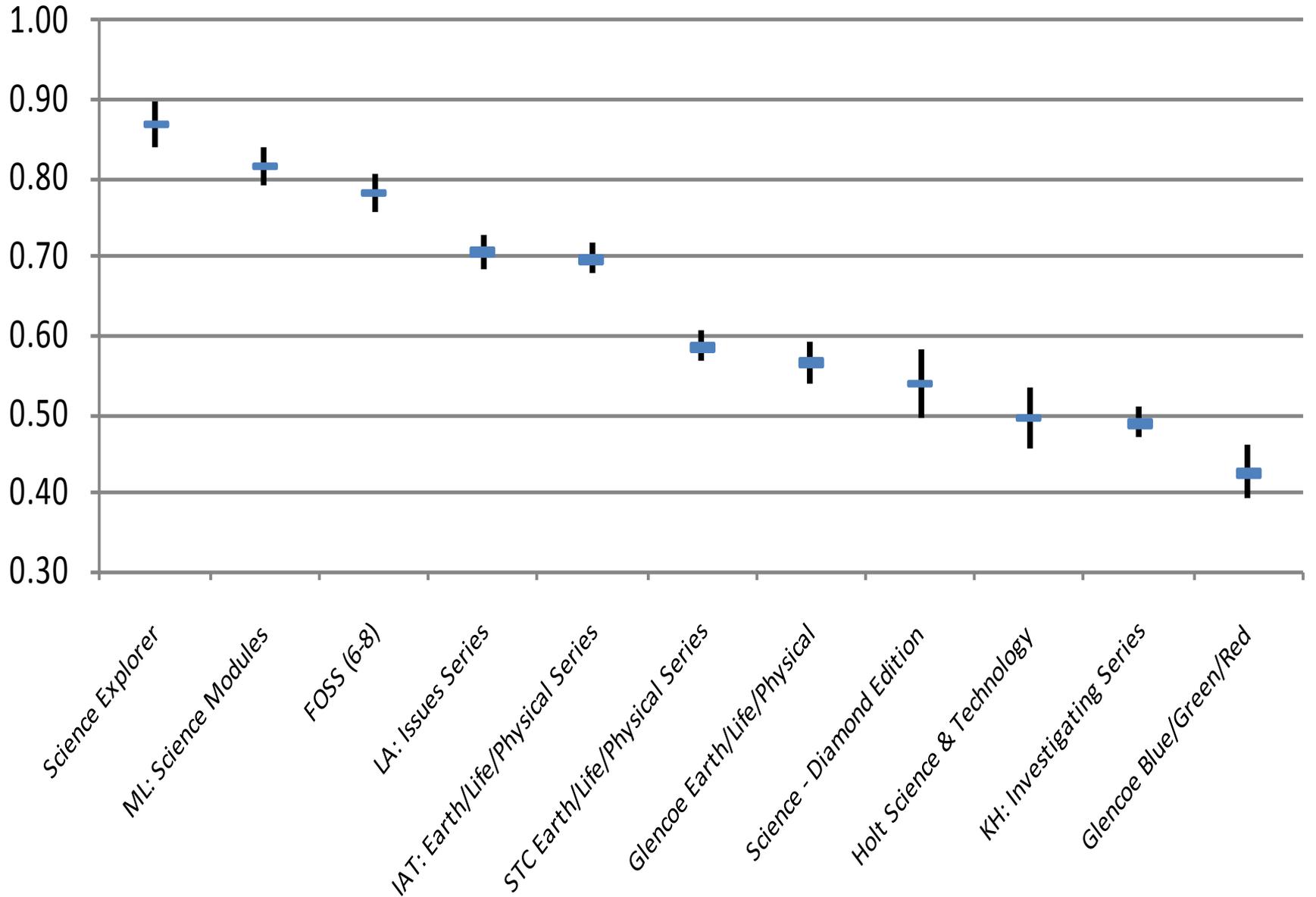
- ▶ Data was reported by 230 districts (78% of the state)
 - 92% of the state's Elementary student population represented
- ≈ 49% using *Full Option Science Study* (FOSS)
- ≈ 21% using *Science & Technology for Children* (STC)
- ≈ 25% using a *Blended* set of materials from multiple publishers

Middle School (6–8) Recommendations

- ▶ *Science Explorer* (Pearson–Prentice Hall)
- ▶ *McDougal Littell: Science Modules* (Holt McDougal)
- ▶ *Full Option Science System (FOSS)* (Delta Education)



Middle School Composite Scores with 95% Confidence Intervals



Middle School Curriculum Usage (grades 6–8)

- ▶ Data was reported by 187 districts (64% of the state)
 - 89% of the state's Middle School student population represented
- ≈ 16% using *Science & Technology for Children (STC) Middle School*
- ≈ 11% using *Prentice Hall Science*
- ≈ 53% using a *Blended* set of materials from multiple publishers

High School

- ▶ **Biology**
 - *Biology: A Human Approach* (Kendall/Hunt, BSCS)
 - *Insights in Biology* (Kendall/Hunt)
- ▶ **Chemistry**
 - *Active Chemistry* (It's About Time Publishing)
- ▶ **Earth and Space Science**
 - *EarthComm* (It's About Time Publishing)



High School Recommendations– cont.

▶ Integrated Science:

- *Science: An Inquiry Approach* (Kendall/Hunt)
- *Coordinated Science* (It's About Time Publishing)
 - (No Life Standards included in this material)

▶ Physical Science:

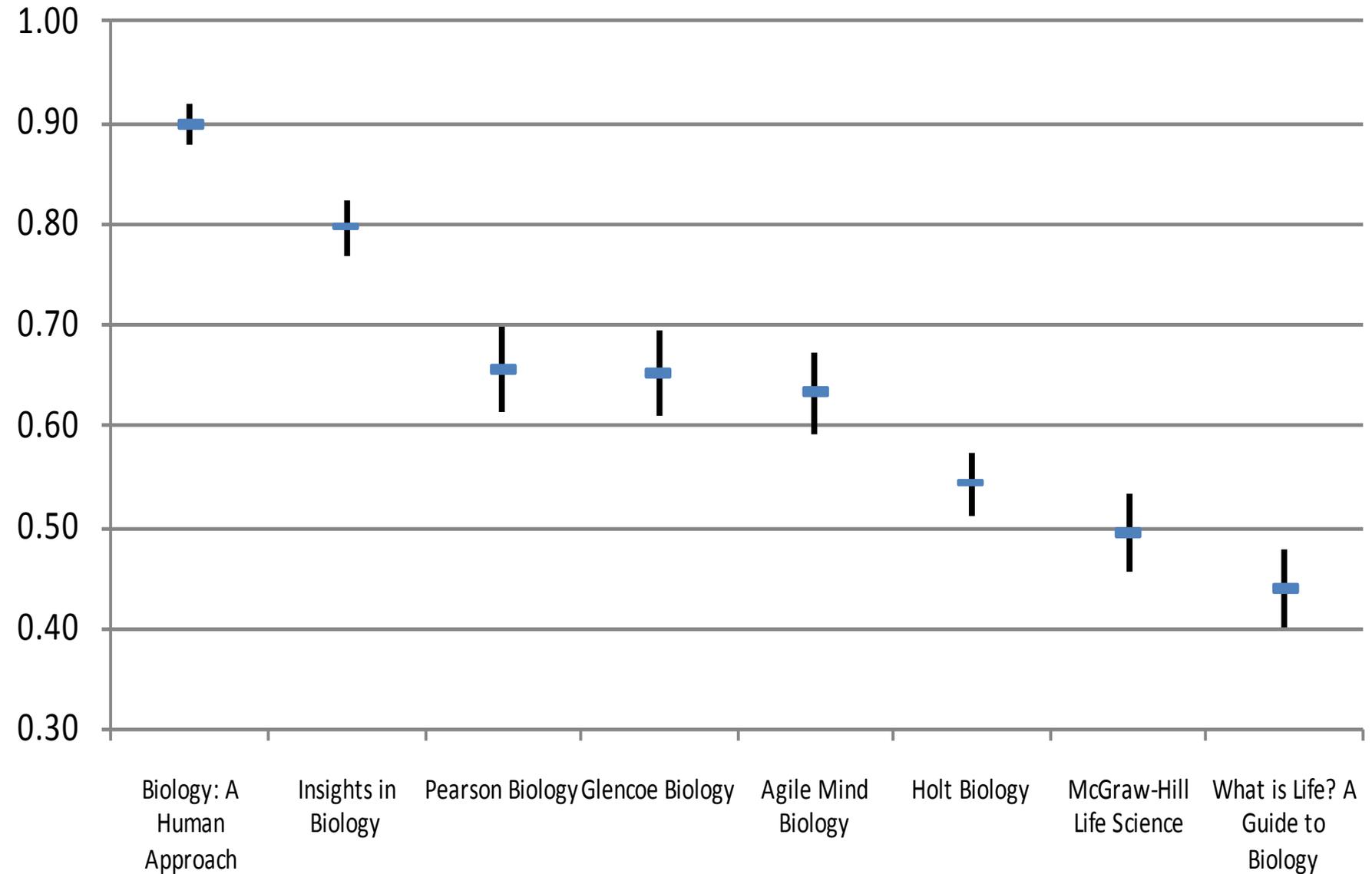
- *Active Physical Science* (It's About Time Publishing)
- *Foundations of Physical Science*

▶ Physics

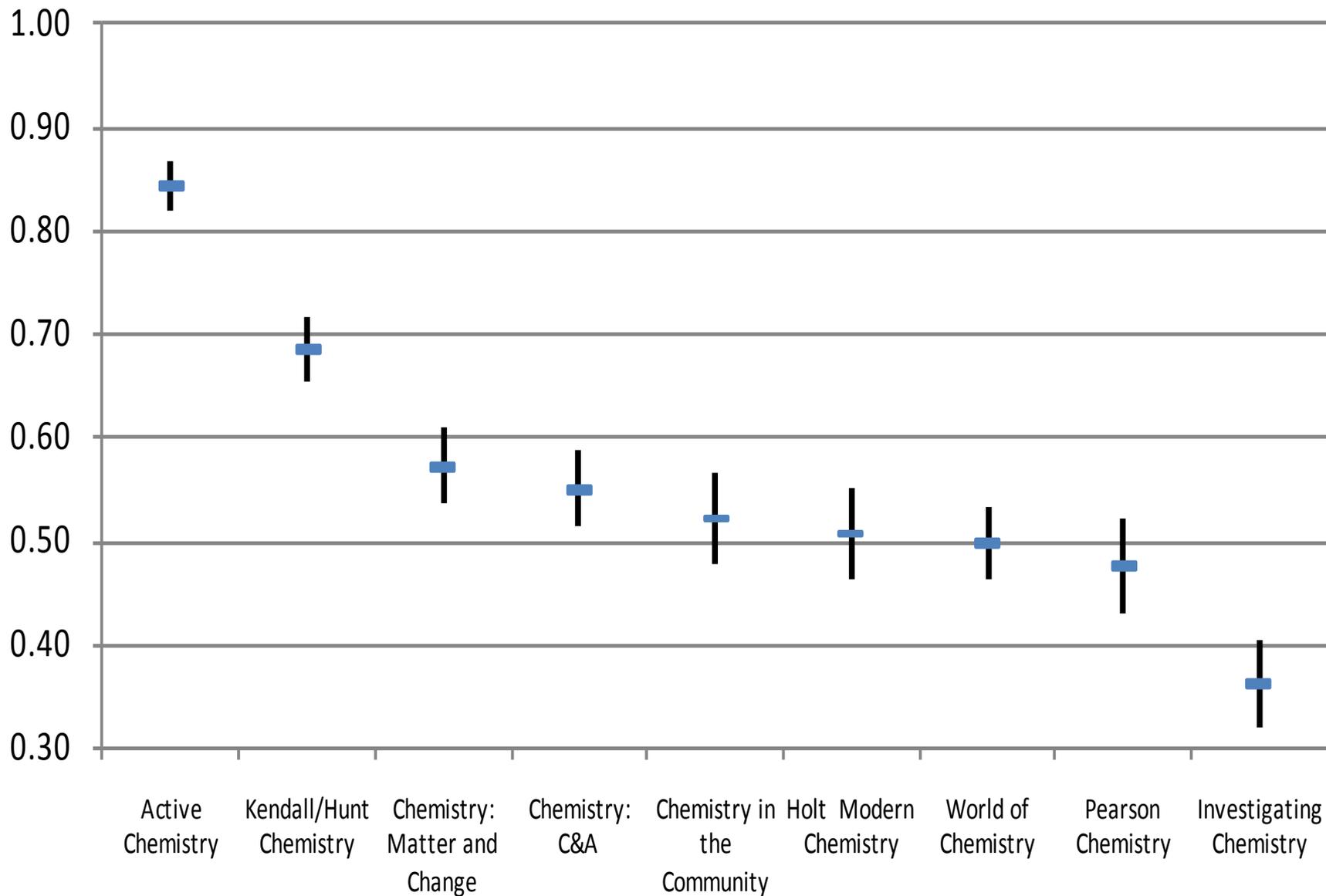
- *Active Physics* (It's About Time Publishing)



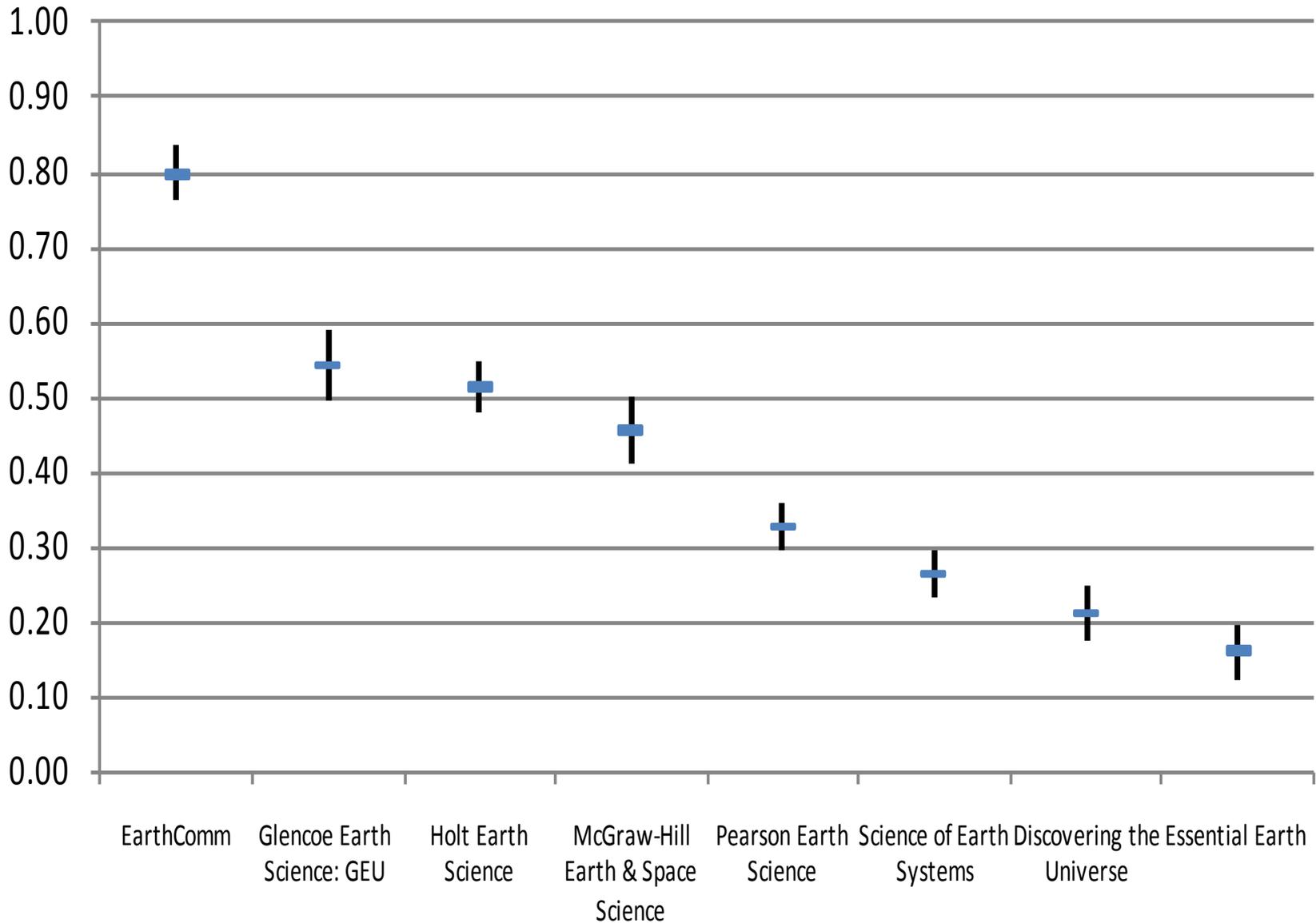
HS Biology Composite Scores with 95% Confidence Intervals



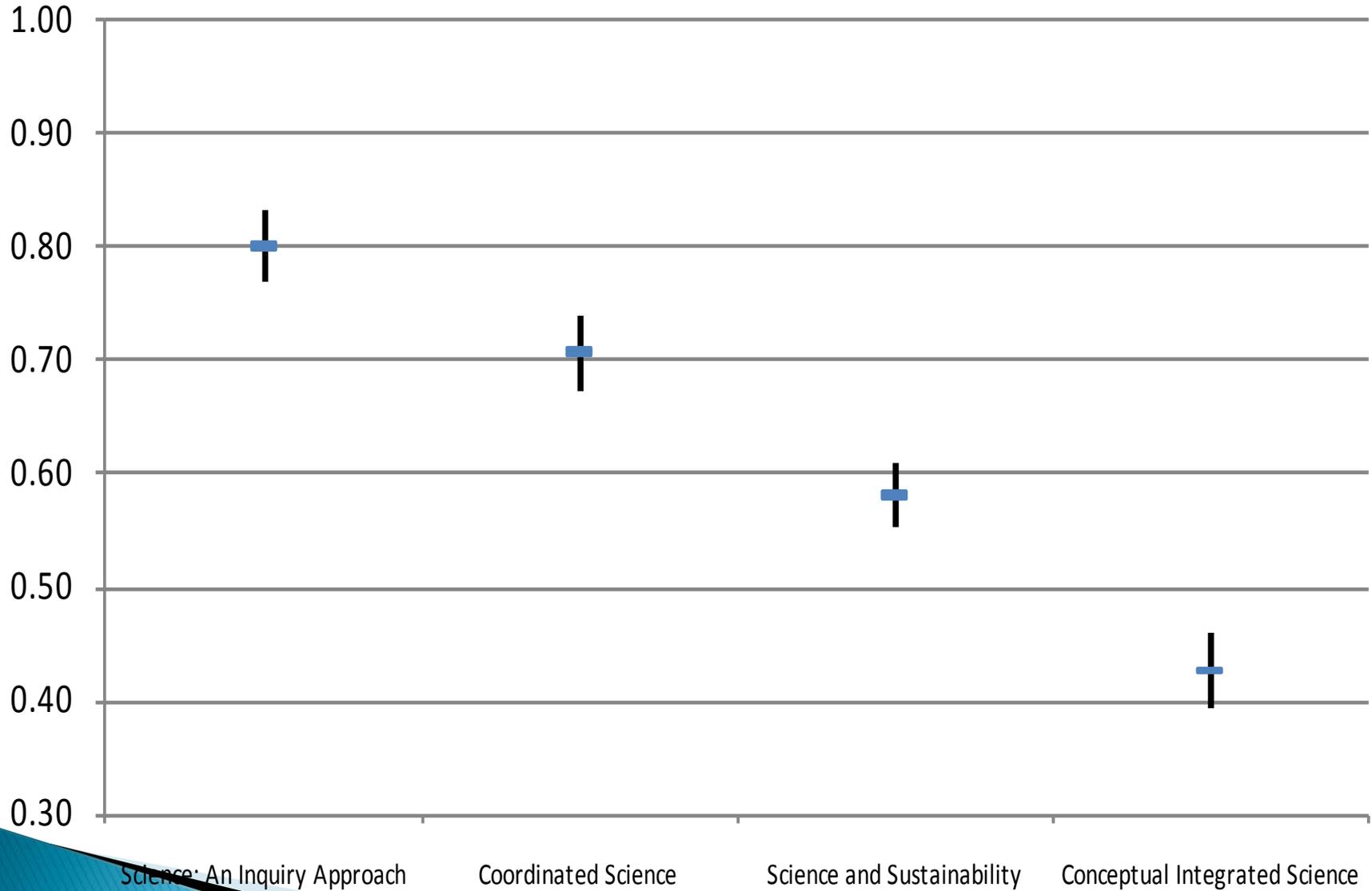
HS Chemistry Composite Scores with 95% Confidence Intervals



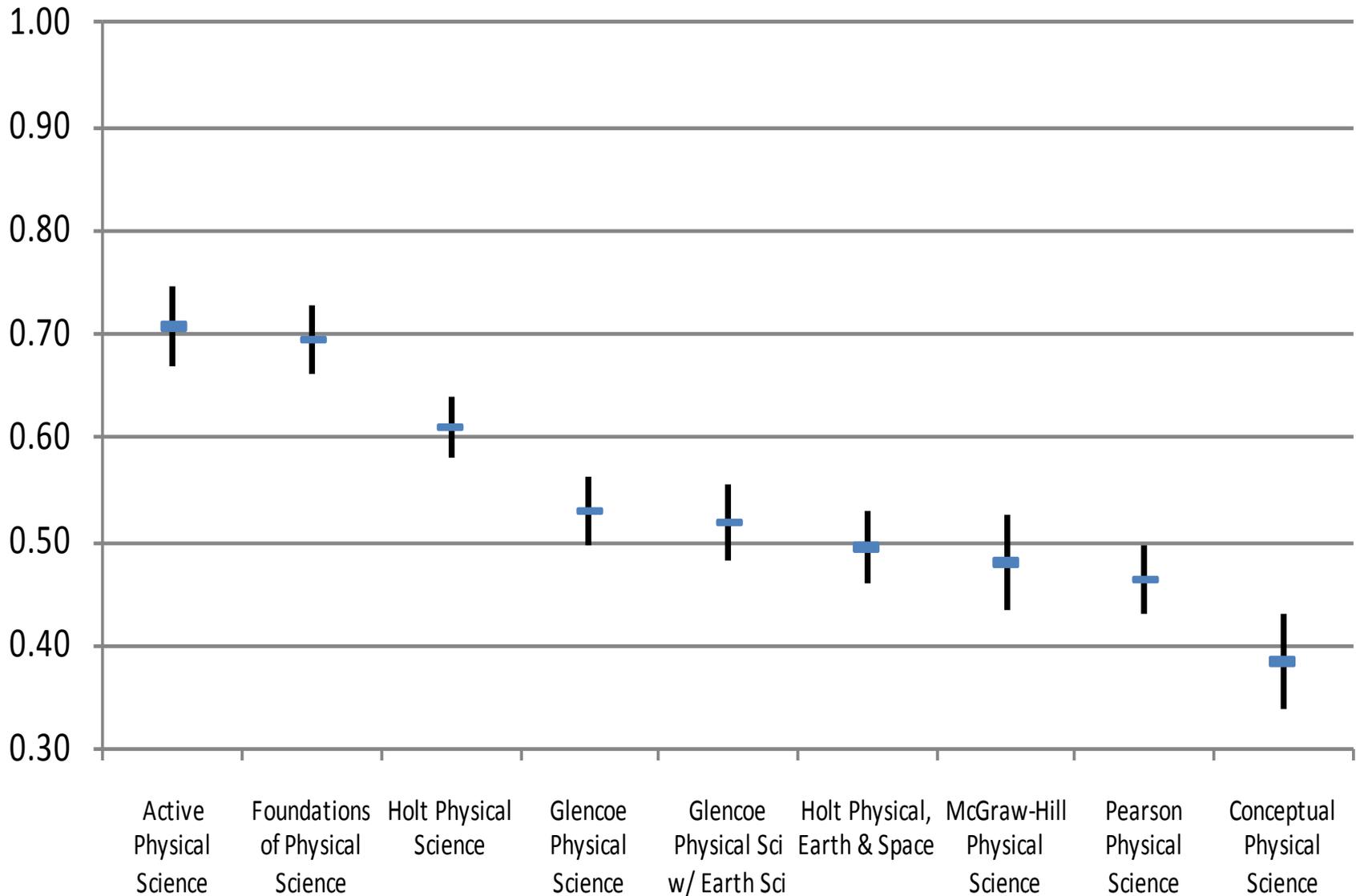
HS Earth Science Composite Scores with 95% Confidence Intervals



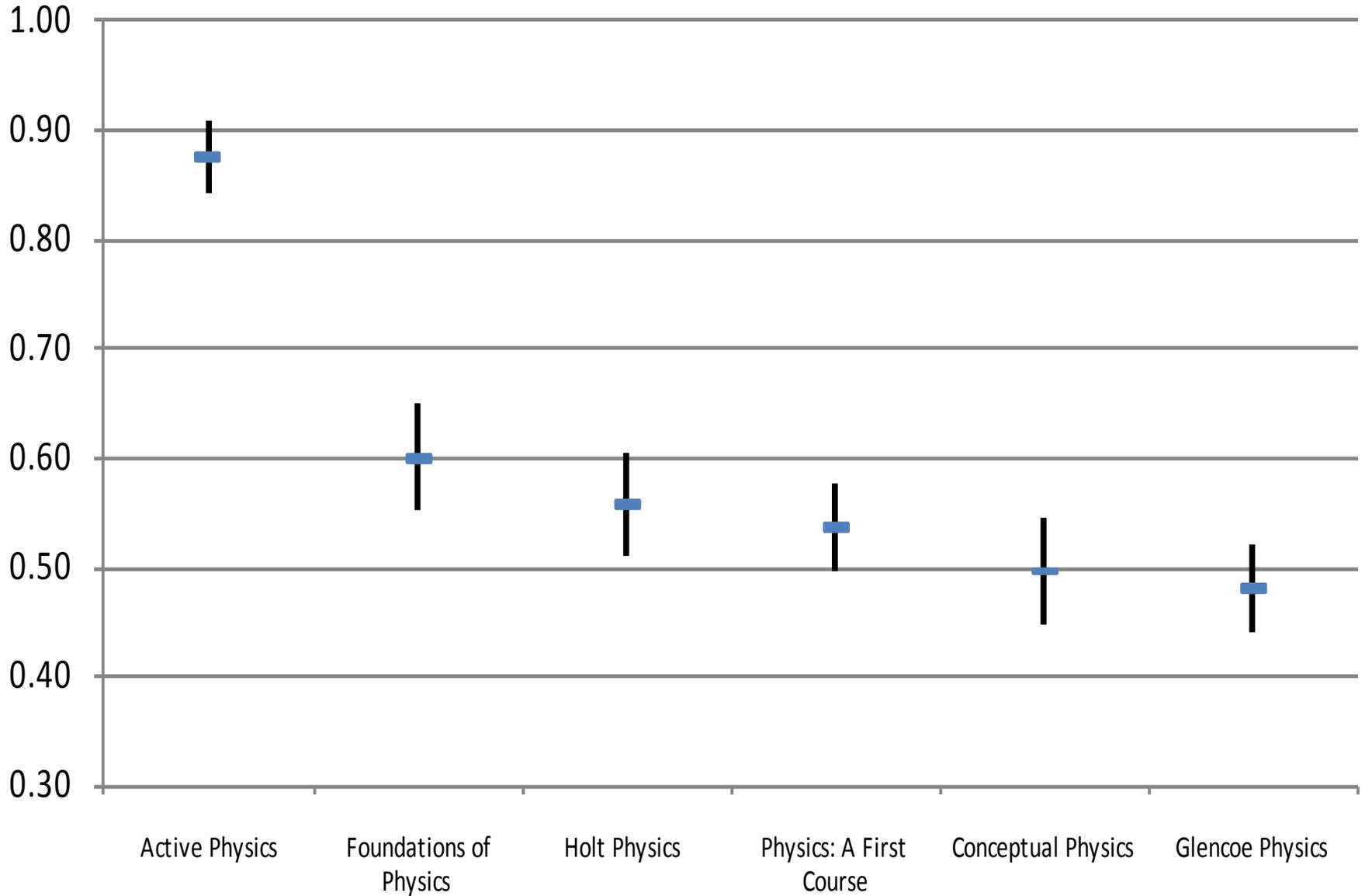
HS Integrated Science Composite Scores with 95% CI's



HS Physical Science Composite Scores with 95% CI's



HS Physics Composite Scores with 95% Confidence Intervals



High School Curriculum Usage (grades 9–12)

Course	Materials Used	% of SD using	% of student pop.
Biology (128 SD reporting)	<i>Biology</i> (Prentice Hall)	≈ 29%	18%
	<i>BSCS: A Human Approach</i> (Kendall Hunt)	≈ 20%	12%
Chemistry (115 SD reporting)	<i>Chemistry</i> (Prentice Hall)	≈ 22%	12%
	<i>Modern Chemistry</i> (Holt)	≈ 22%	14%
Integrated (25 SD reporting)	<i>BSCS: An Inquiry Approach</i> (Kendall Hunt)	≈ 40%	6%
	<i>Integrated Coordinated Science for 21st Century</i> (It's About Time)	≈ 24%	2%
Physics (106 SD reporting)	<i>Physics: Principles & Problems</i> (Glencoe)	≈ 32%	18%
	<i>Conceptual Physics</i> (Prentice Hall)	≈ 24%	12%

Input Sought from SBE Science Panel

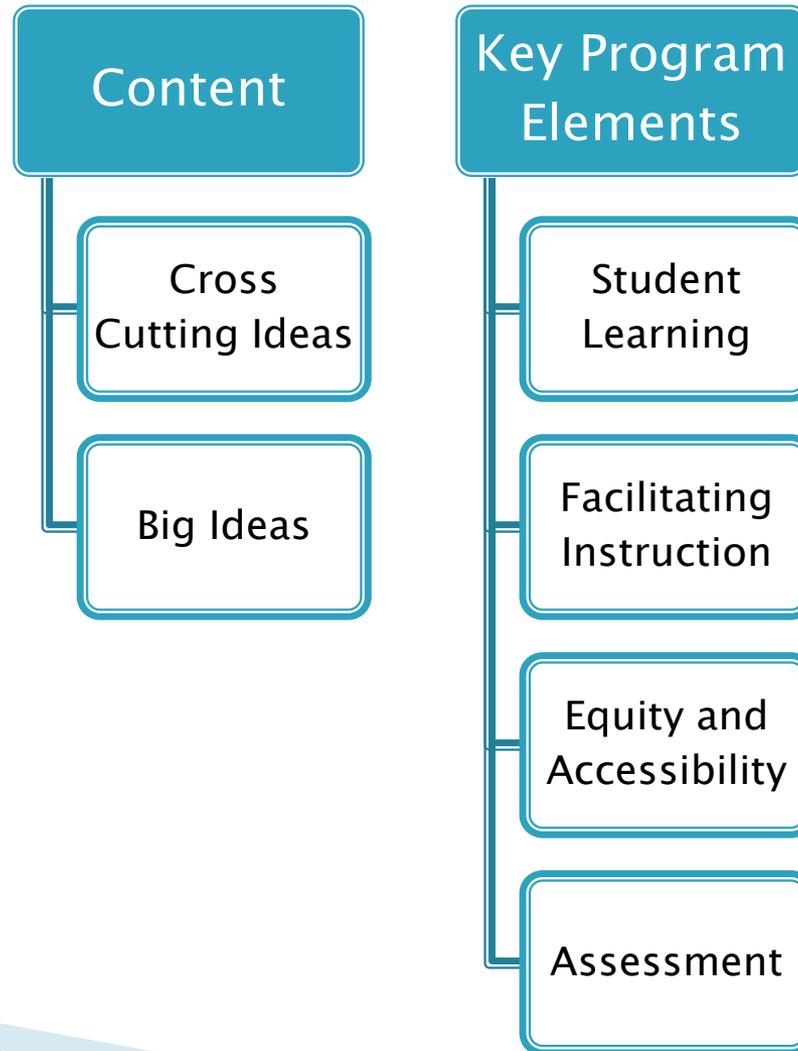
- ▶ Overall Recommendations
- ▶ Conceptual Development Reviews
- ▶ Elementary Curricula
- ▶ High School Integrated Science

Meeting on August 7th, 2009, 9a.m.–4 p.m. PSESD

K–12 Supplemental Materials Review

- ▶ No requirement to make recommendations
- ▶ Higher level review of alignment with “Cross-cutting and Big Ideas” from Revised Science Standards
- ▶ Results to be used in conjunction with the more detailed Core Review results

Supplemental Evaluation Framework



K-12 Supplemental Snapshot

- ▶ 43 publishers
- ▶ 99 programs reviewed
- ▶ 16 reviewers
- ▶ 1-2 readings per program
- ▶ Over 5800 data elements collected

Questions?

<http://www-dev.k12.wa.us/CurriculumInstruct/publishernoticesScience.aspx>