

***Early Childhood Education  
& Full-Day Kindergarten:  
Effects on K-12 Outcomes***

**Basic Education Finance Joint Task Force  
October 21, 2008**

**Steve Aos**

Assistant Director

Washington State Institute for Public Policy

Phone: (360) 586-2740

E-mail: [saos@wsipp.wa.gov](mailto:saos@wsipp.wa.gov)

Institute Publications: [www.wsipp.wa.gov](http://www.wsipp.wa.gov)

## Previous Legislative Assignments

### ✓ Pre-School for Low-Income Youth

Assignment from the 2003 Legislature to conduct an economic analysis of prevention and early intervention programs.

### ✓ Full-Day vs. Half-Day Kindergarten

Assignment from the 2006 Legislature to study the cost and benefits of several K-12 options.

**In 2004, we conducted a systematic review of every rigorous evaluation in the United States since 1965**

Outcomes for <u>LOW INCOME</u> 3 & 4 year olds	Number of Studies	Average Result
High School Graduation	10	On-time graduation increases from 62% to 68%
K-12 Grade Repetition	24	Percent repeating a grade drops from 13% to 8%.
K-12 Special Education	23	Percent using special ed drops from 12% to 8%
Standardized Test Scores	27	2 to 4 percentage point increase in met-standard rate
Crime	8	Pct. with conviction by age 30 drops from 24% to 17%
Public Assistance	3	No significant effect
Teen Births (under 18)	4	No significant effect
Child Abuse and Neglect	1	Pct. with a substantiated case drops from 12% to 7%

## Is Early Childhood Education for Low-Income 3 and 4 Year Olds a Good Investment?

(2005 dollars, life-cycle present value)

### Benefits

Increased high school graduation

**\$9,966**

Reduced K12 grade repetition

**\$206**

Reduced K12 special education

**\$135**

Reduced crime

**\$5,068**

Reduced child abuse & neglect

**\$1,919**

Reduced alcohol and drug abuse

**\$278**

Offset child care costs

**\$1,897**

**Total Benefits Per Youth**

**\$19,469**

### Main Source of Benefits

Increased earnings

Lower K12 Costs

Lower K12 Costs

Lower CJS & Victim \$

Lower CWS & Victim \$

Increased earnings

Lower CC Costs

**Cost Per Youth**

**\$7,709**

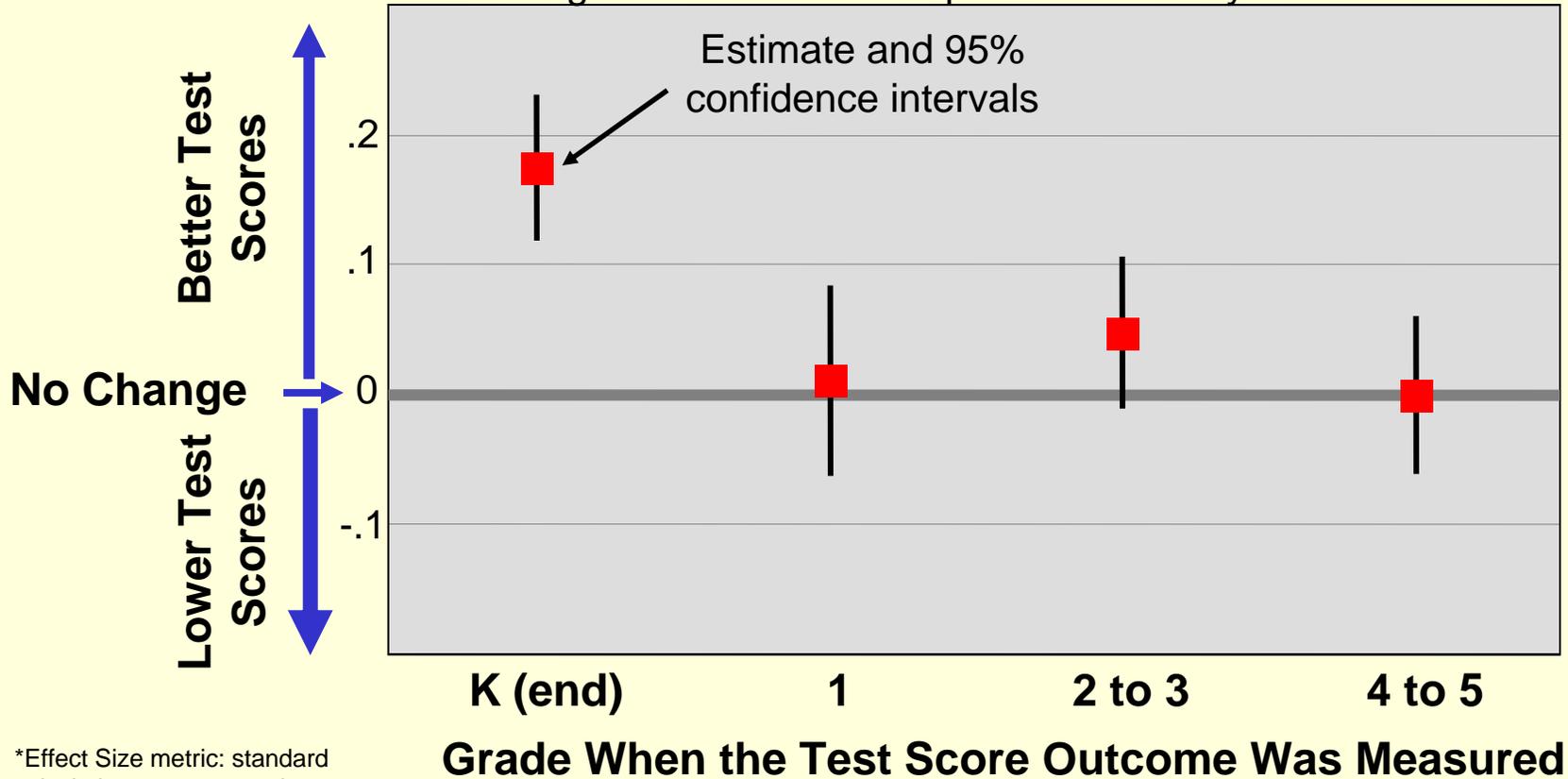
**Benefits Per Dollar of Cost**

**\$2.53** (8 to 10% ROI)

# Does Full-Day Kindergarten Improve Test Scores?

(The results of 23 statistically-sound studies of the effect of full-day K compared to half-day K on student test-score outcomes)

The change in test scores compared to half-day K\*



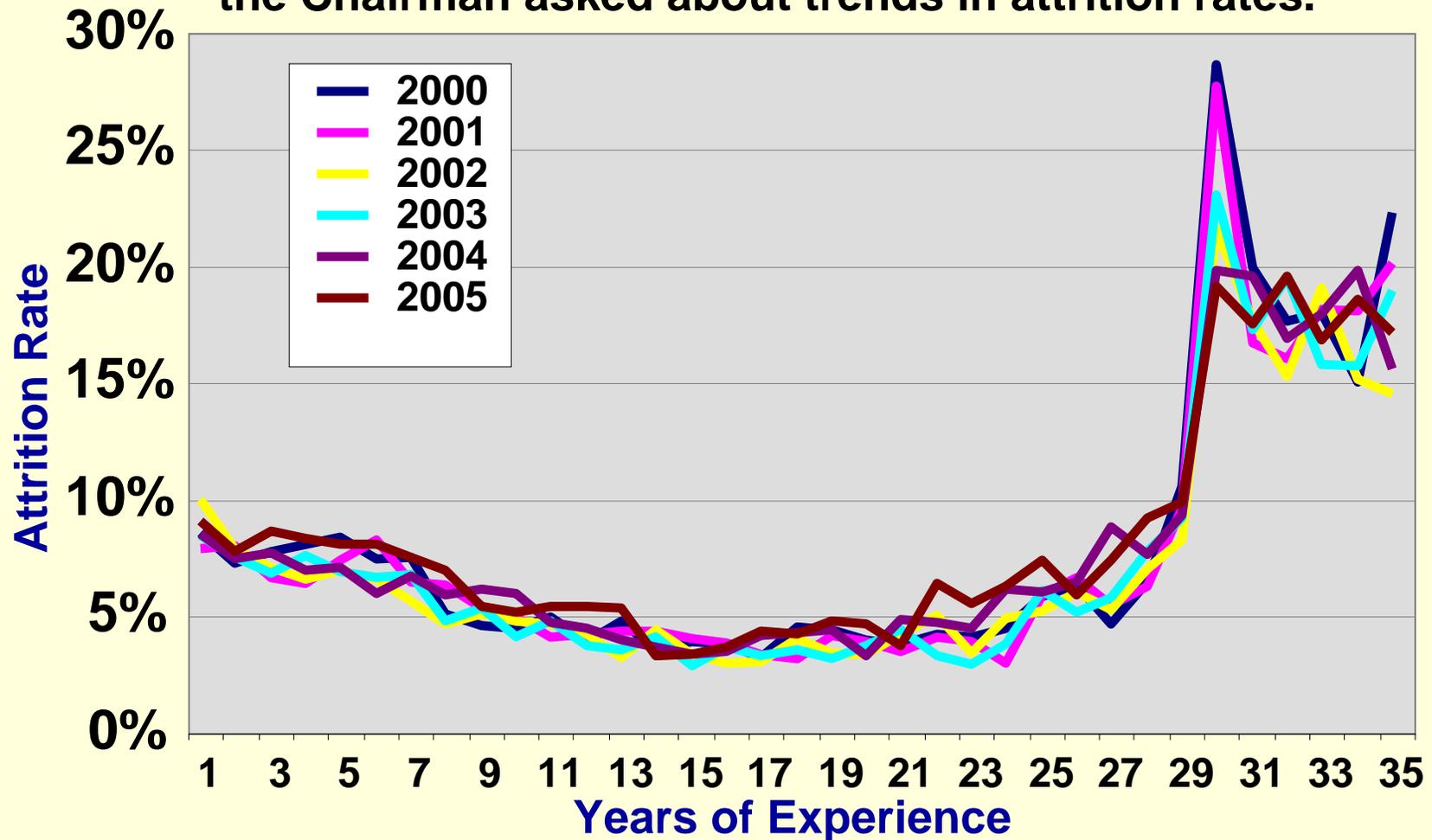
\*Effect Size metric: standard deviation test score units.

## ***Full-Day v. Half-Day K Conclusions***

- 1. Does full-day K improve test scores?**
  - ✓ Effects are significant at the end of kindergarten,
  - ✓ But they erode quickly between grades 1 and 3.
  
- 2. Different Effect for low-income students?**
  - ✓ No. Test score gains at the end of K are about the same and benefits erode at about the same rate.
  
- 3. What are the economics of full-day K?**
  - ✓ To generate long-term benefits, public policies need to examine how to sustain the early gains from investments in full-day kindergarten.
  - ✓ Experimentation seems warranted.

# Teacher Attrition Rates in Washington

At the October 20, 2008 meeting of the Task Force, the Chairman asked about trends in attrition rates.



\*Attrition = a teacher who does not appear in the system as of the latest year for which we have data.