# Recruitment, Retention and the Mathematics and Science Teacher Shortage

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**and**
**The Consortium for Policy Research in Education**

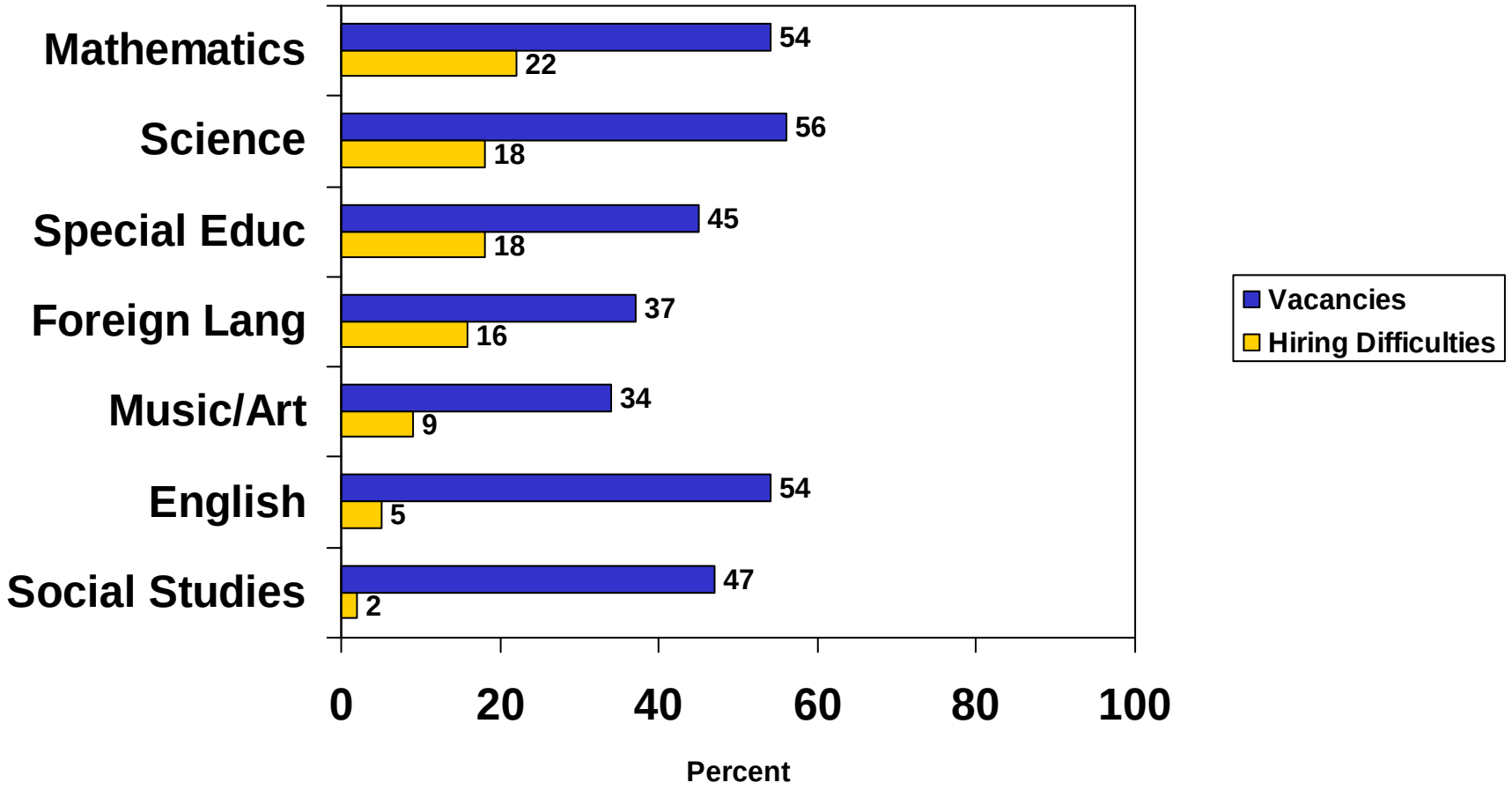
# Sources of Data

**Schools and Staffing Survey with the Teacher Follow-up Survey (SASS/TFS)**
**(6 cycles from 1987 to 2008)**

**Integrated Postsecondary Educational Data System (IPEDS)**

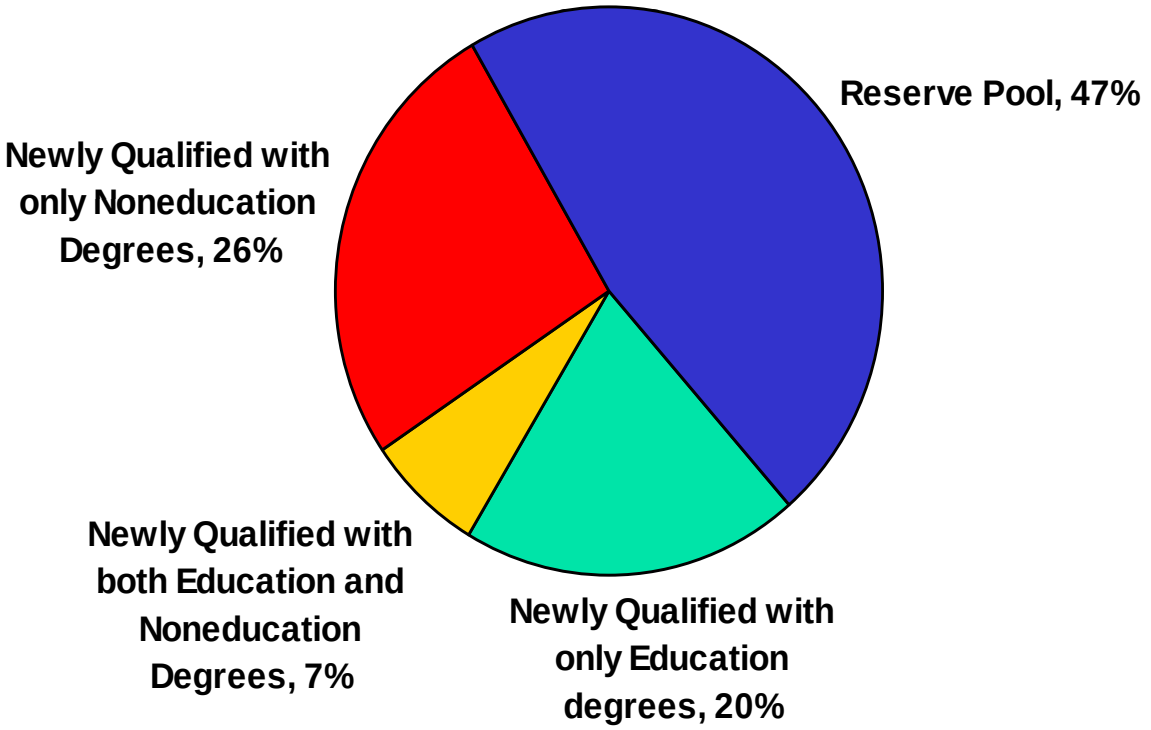
**Baccalaureate and Beyond Survey (B&B)**

# Percent Secondary Schools with Teaching Vacancies and with Serious Difficulties Filling those Vacancies, by Field



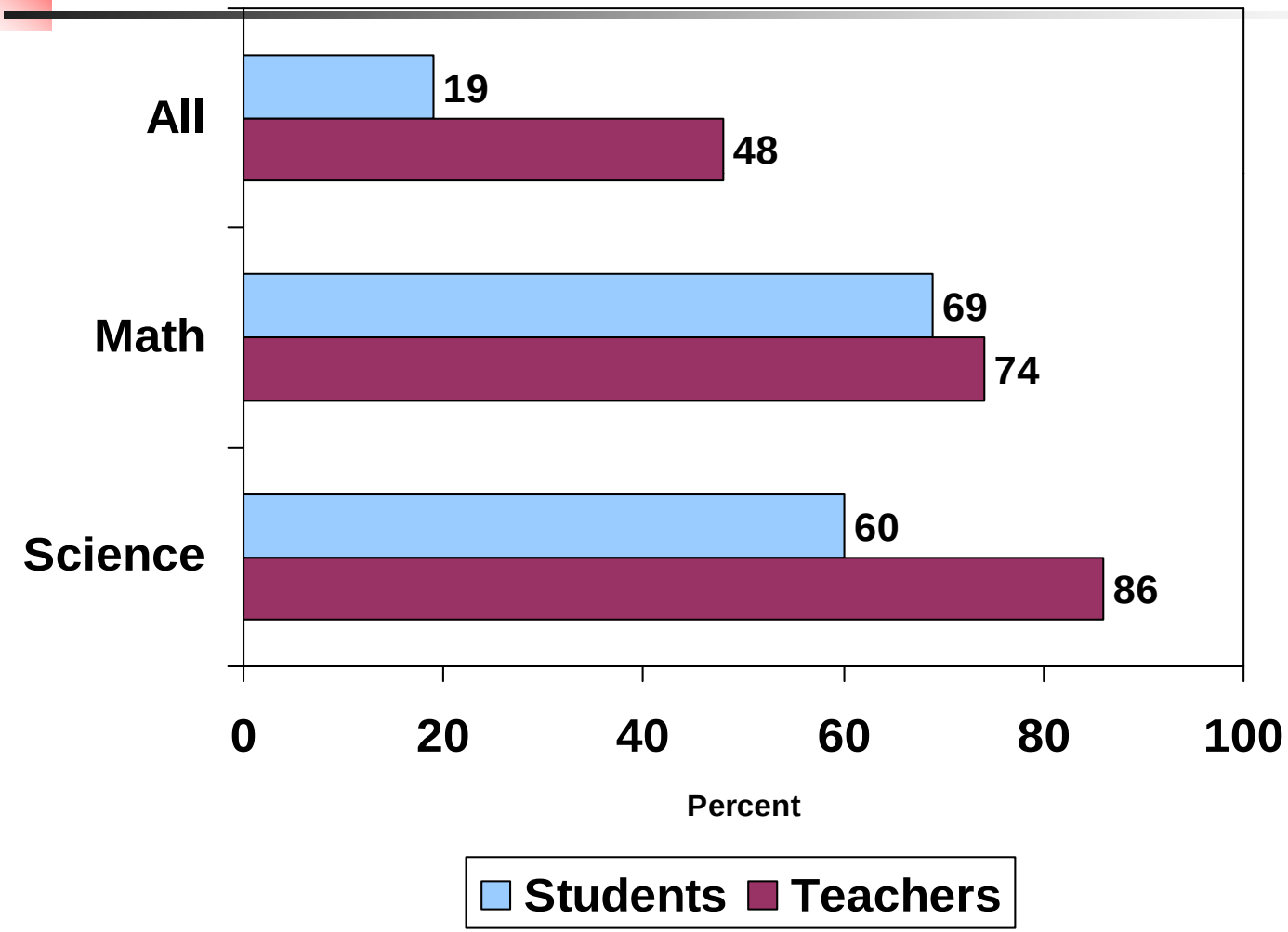

Source: Ingersoll, R. & Perda, D. 2010. "Is The Supply of Mathematics and Science Teachers Sufficient?" *American Educational Research Journal*. 47(3): 563-594.

# Percent of Math and Science Teachers Newly Hired in the School System, by Supply Source (2007-2008)



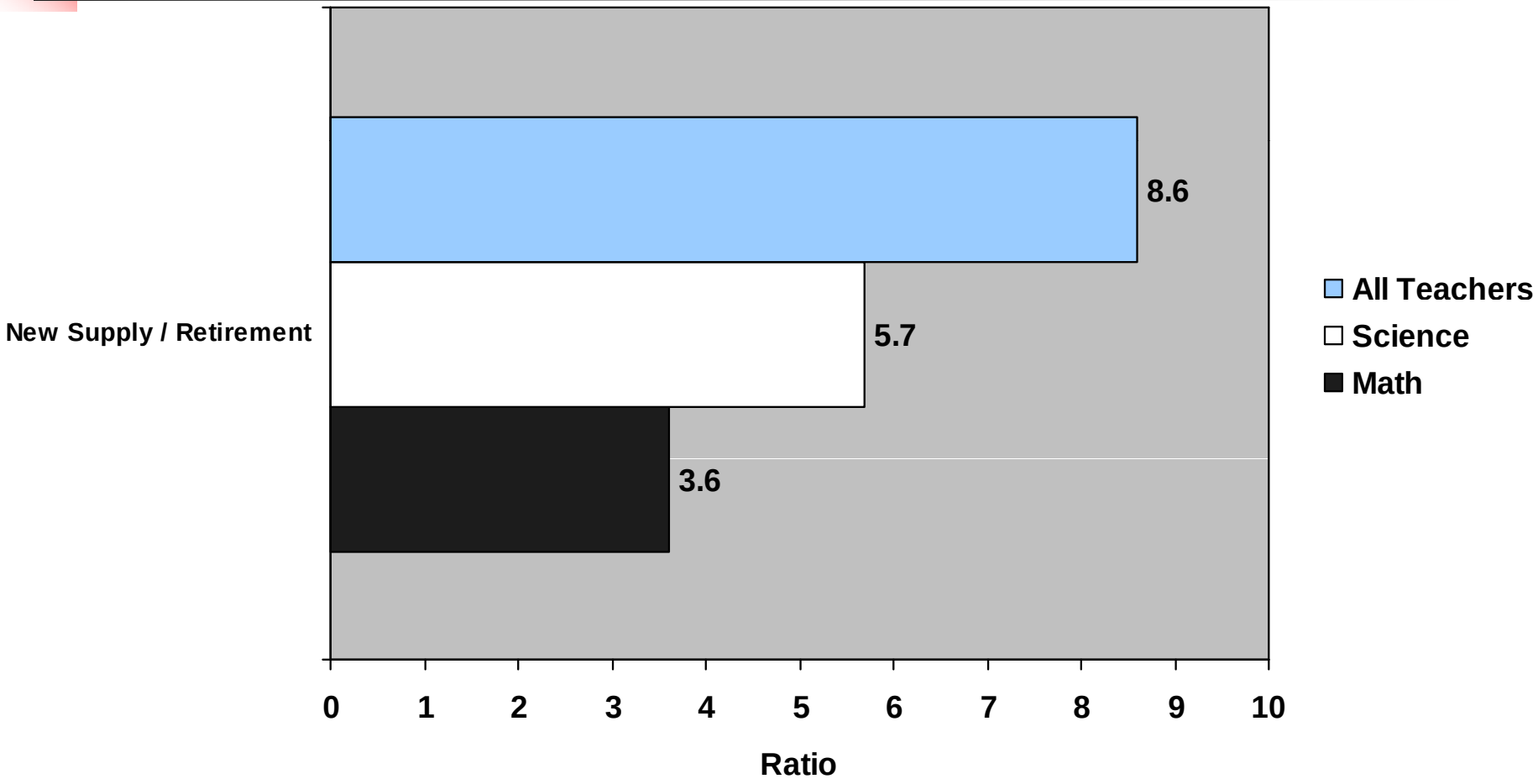

Source: Ingersoll, R. & Perda, D. 2010. "Is The Supply of Mathematics and Science Teachers Sufficient?" *American Educational Research Journal*. 47(3): 563-594.

# Percent Increase in Students and Qualified Employed Teachers, by Field from 1987-88 to 2007-08



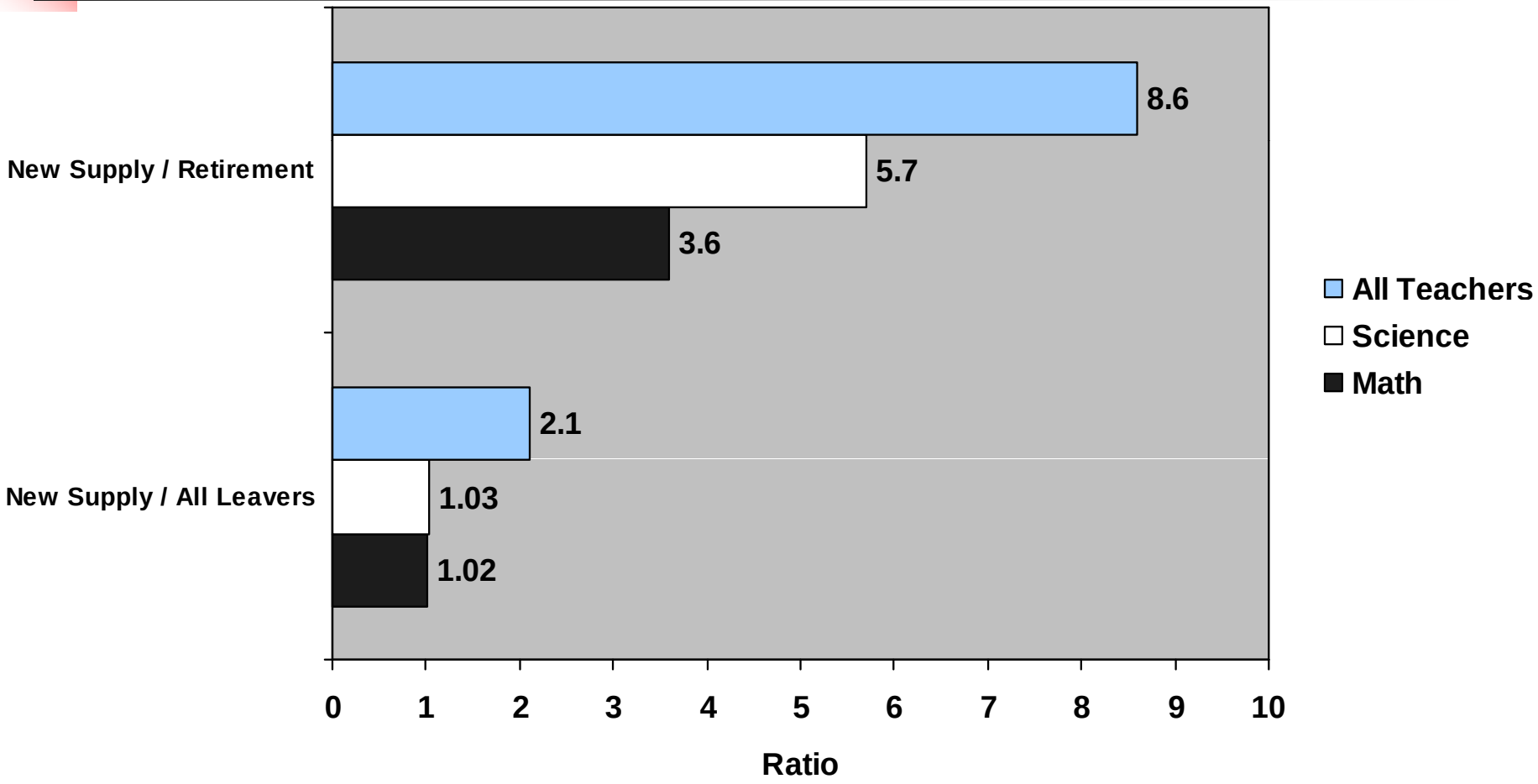

Source: Ingersoll, R. & Perda, D. 2010. "Is The Supply of Mathematics and Science Teachers Sufficient?" *American Educational Research Journal*. 47(3): 563-594.

# Ratio of New Supply of Teachers to Retirement, by Field



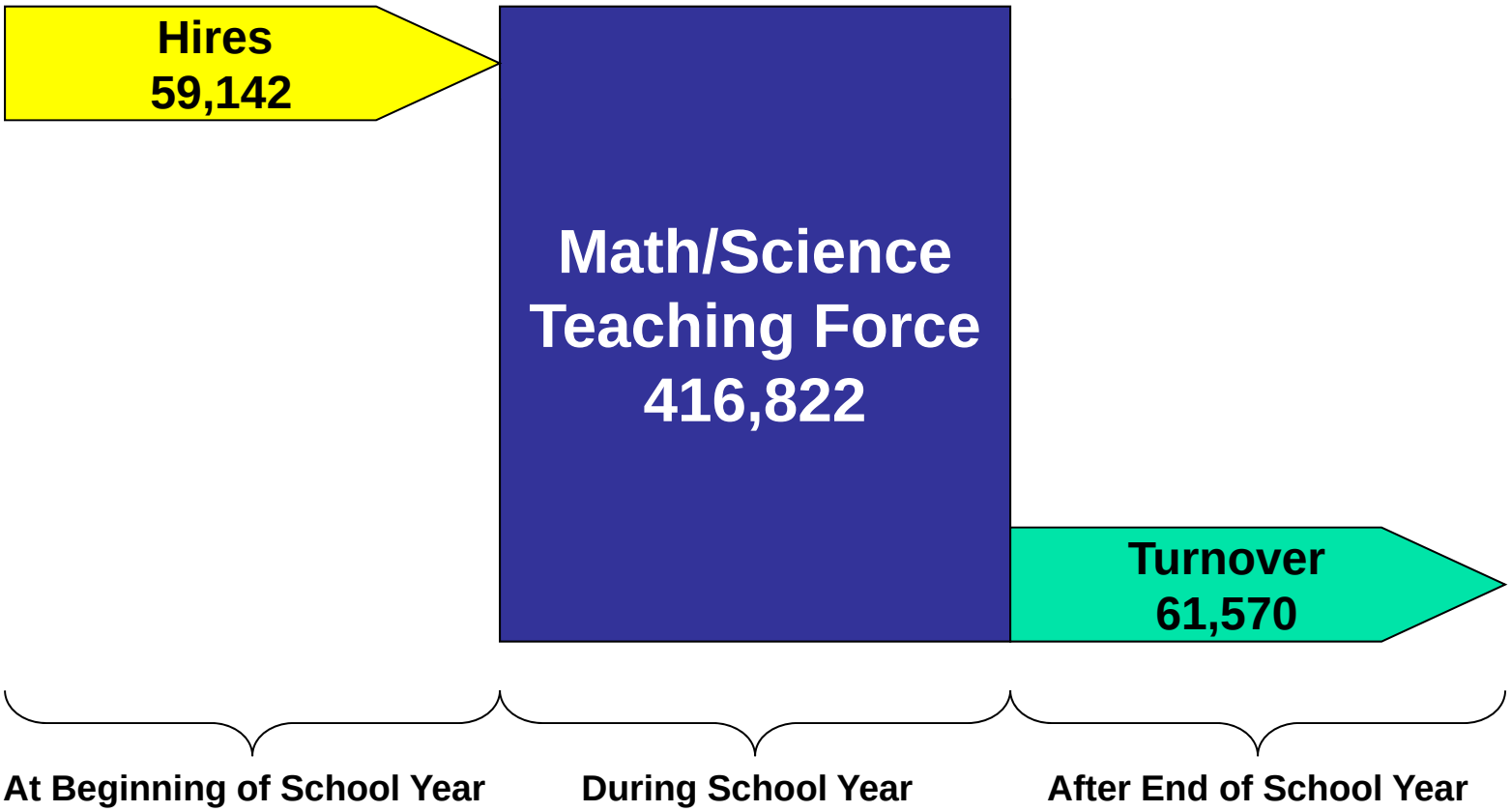

Source: Ingersoll, R. & Perda, D. 2010. "Is The Supply of Mathematics and Science Teachers Sufficient?" *American Educational Research Journal*. 47(3): 563-594.

# Ratio of New Supply of Teachers to Retirement and to All Leavers, by Field



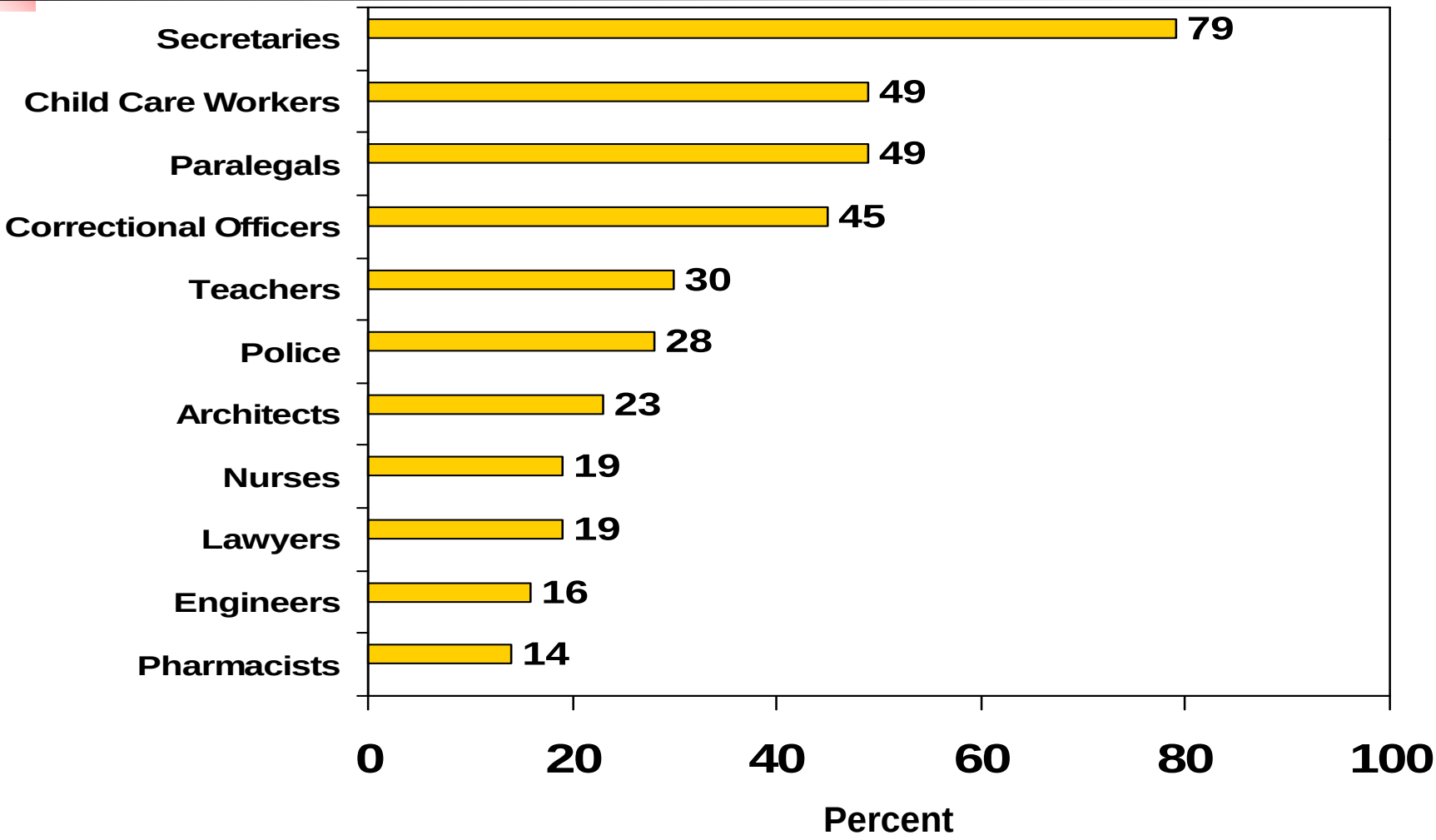

Source: Ingersoll, R. & Perda, D. 2010. "Is The Supply of Mathematics and Science Teachers Sufficient?" *American Educational Research Journal*. 47(3): 563-594.

# Numbers of Math and Science Teachers in Transition Before and After 2003-2004 School Year



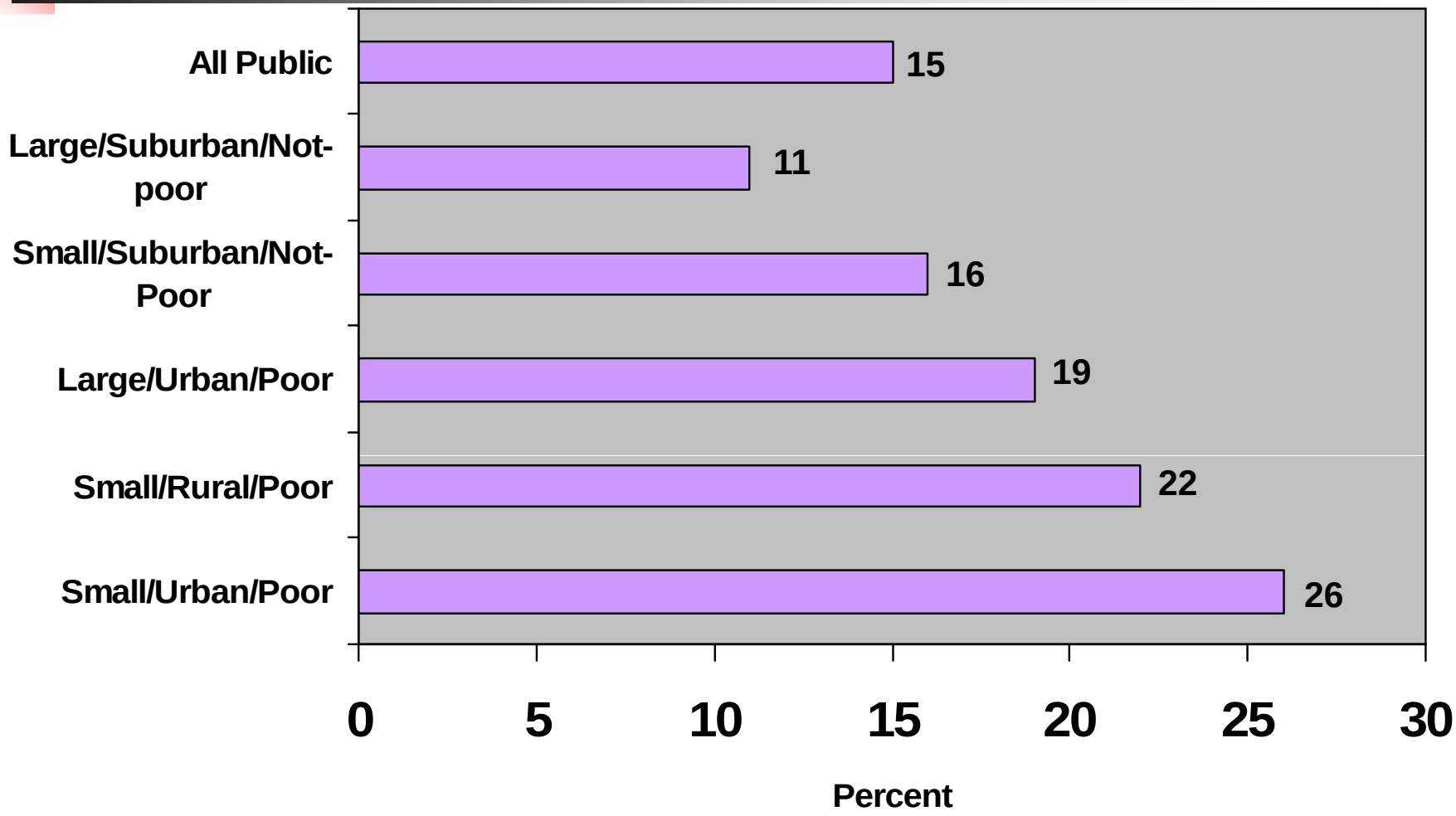

Source: Ingersoll, R. & Perda, D. 2010. "Is The Supply of Mathematics and Science Teachers Sufficient?" *American Educational Research Journal*. 47(3): 563-594.

# Among 1993 College Grads Who Entered Selected Occupations by 1997, Percent Gone From Occupation by 2003



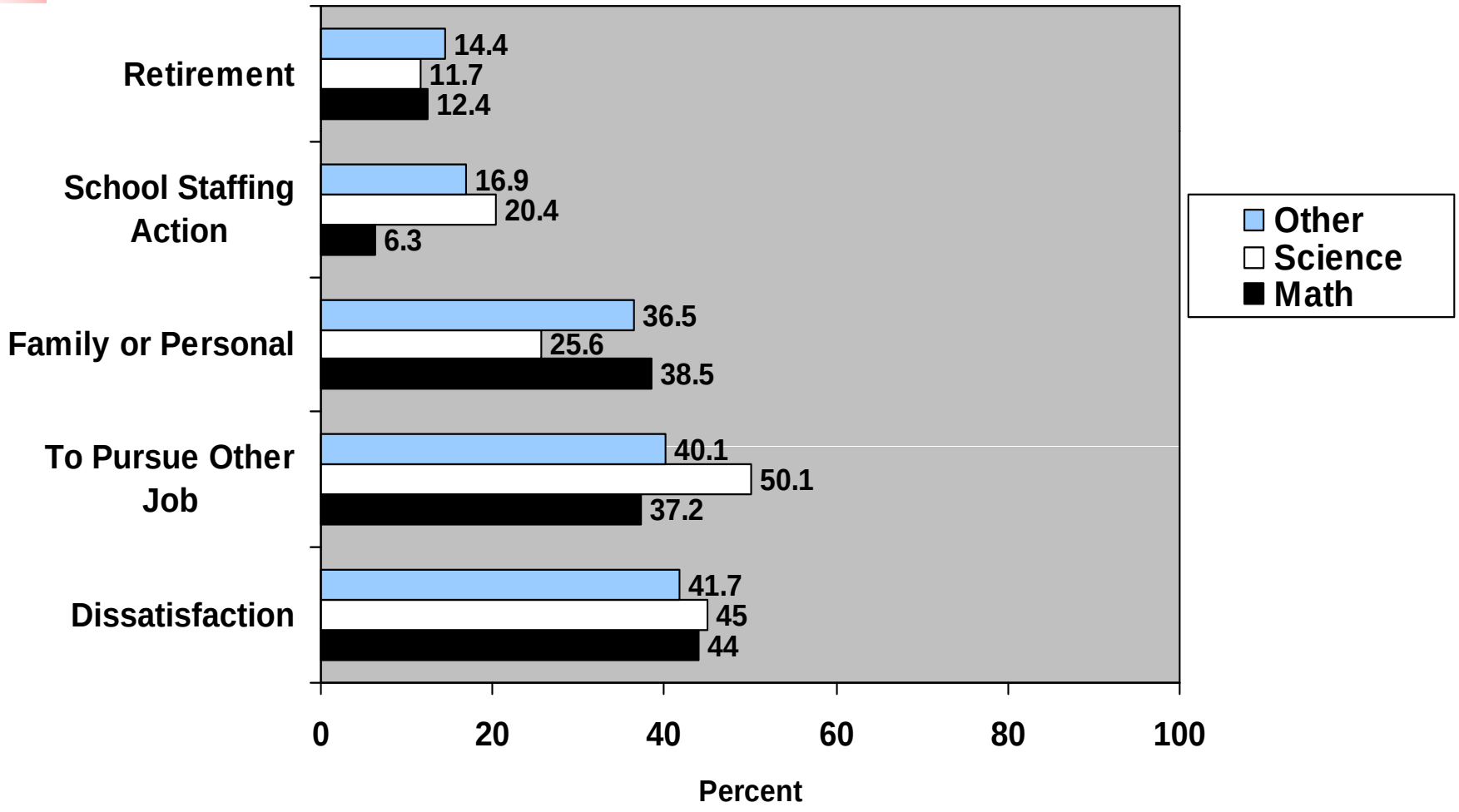

Source: Ingersoll, R. & Perda, D. 2010. *How High is Teacher Turnover and is it a Problem?* Consortium for Policy Research in Education, University of Pennsylvania

# Annual Public School Teacher Turnover, by School Type (2000-2001)




Source: Ingersoll, R. & Perda, D. 2010. *How High is Teacher Turnover and is it a Problem?* Consortium for Policy Research in Education, University of Pennsylvania.

# Percent Teachers Reporting Various Categories of Reasons for Their Turnover, by Field (2004-2005)




Source: Ingersoll, R. & May, H. 2010. *The Magnitude, Destinations and Determinants of Mathematics and Science Teacher Turnover.* Consortium for Policy Research in Education, University of Pennsylvania

# Strongest Factors Related to Turnover, by Field (2004-05)

**For Math:**

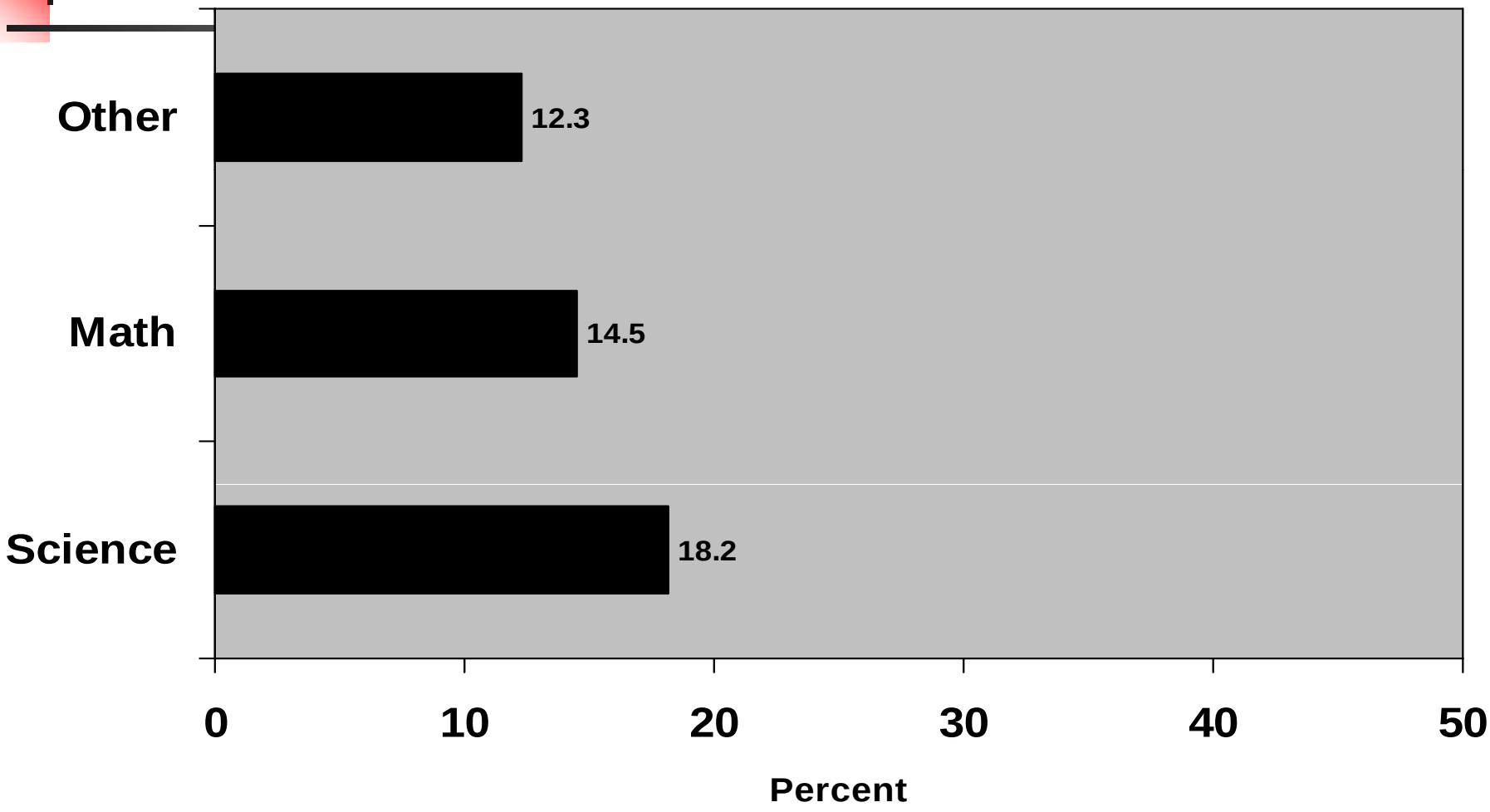
- **Inadequate Degree of Classroom Autonomy**
- **Too Little Useful Professional Development**
- **Too Much Student Discipline and Behavior Problems**

**For Science:**

- **Lower Salaries**
- **Too Little Useful Professional Development**
- **Too Much Student Discipline and Behavior Problems**

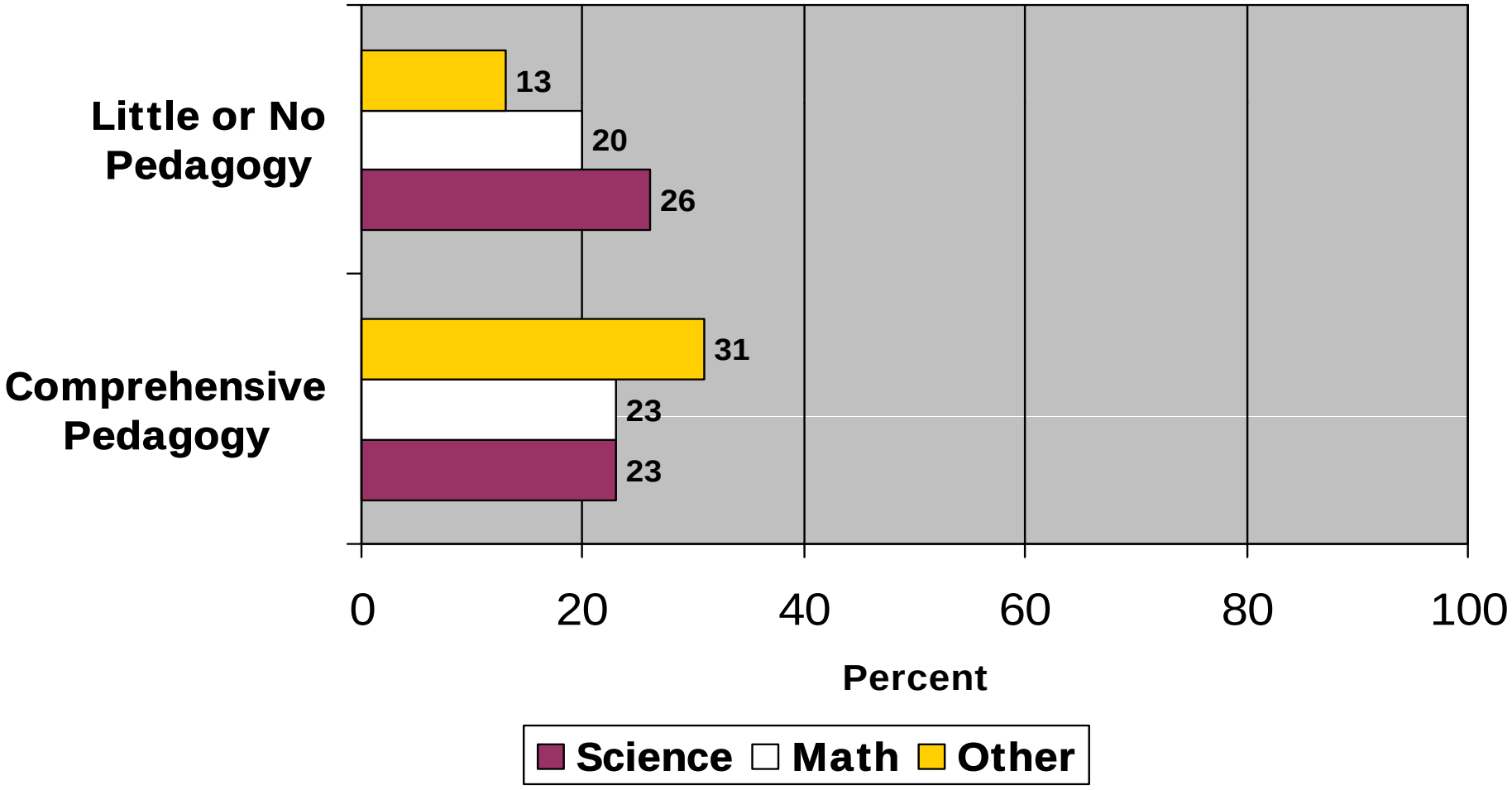
**Source: Ingersoll, R. & May, H. 2010.** ***The Magnitude, Destinations and Determinants of Mathematics and Science Teacher Turnover.***
**Consortium for Policy Research in Education, University of Pennsylvania**

# Percent Beginning Teacher Attrition After First Year, by Field: 2004-05



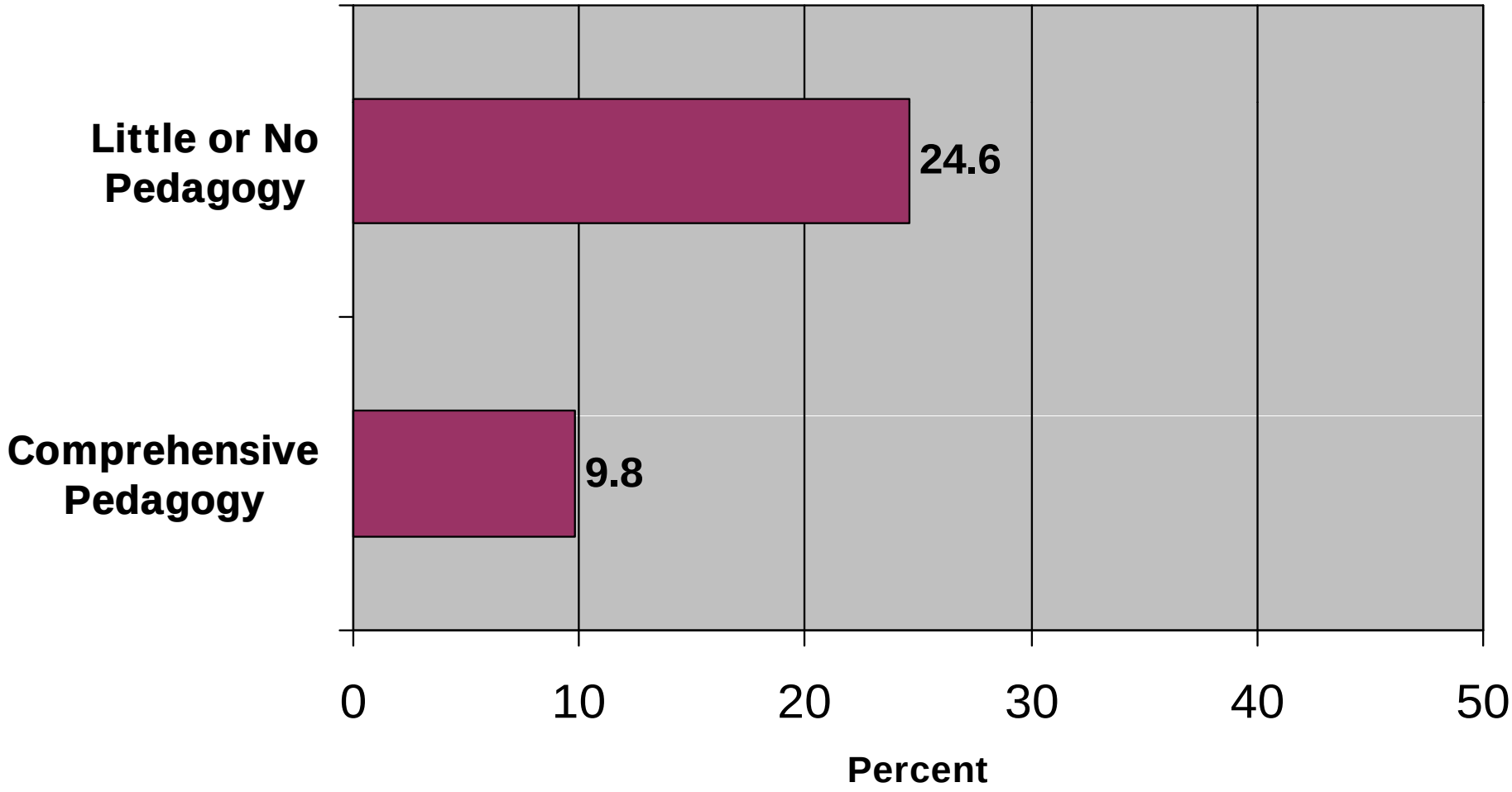

**Source: Ingersoll, R., Merrill, E., May, H. 2012.** "Keeping Mathematics and Science Teachers: Does Preparation Matter?" Forthcoming in *Educational Leadership*.

# Percent Beginning Teachers Who Received Different Pedagogical Preparation Packages, by Field: 2003-04.




**Source: Ingersoll, R., Merrill, E., May, H. 2012.** "Keeping Mathematics and Science Teachers: Does Preparation Matter?" Forthcoming in *Educational Leadership*.

# Attrition of Beginning Teachers, by Different Pedagogical Packages: 2004-05




**Source: Ingersoll, R., Merrill, E., May, H. 2012.** "Keeping Mathematics and Science Teachers: Does Preparation Matter?" Forthcoming in *Educational Leadership*.

# Implications

**President Obama has Proposed Recruitment of 10,000 New Math/Science Teachers per year for 10 years.**

**But, between 2004 and 2005 alone…..**

**- 26,400 Math/Science Teachers Left Teaching**

**- Of them:**

**- 7,000 Retired**

**- 14,000 left due to dissatisfaction or to pursue another job**

**- 25,000 Moved to Other Schools**

**- Of them:**

**- Four times as many moved to affluent as to poor schools**

# For Further Information, Copies of Articles, Reports, etc.:

- www.gse.upenn.edu/faculty/ingersoll