

Teaching, Learning, and Computing: Descriptive Results from the 1998 National Survey

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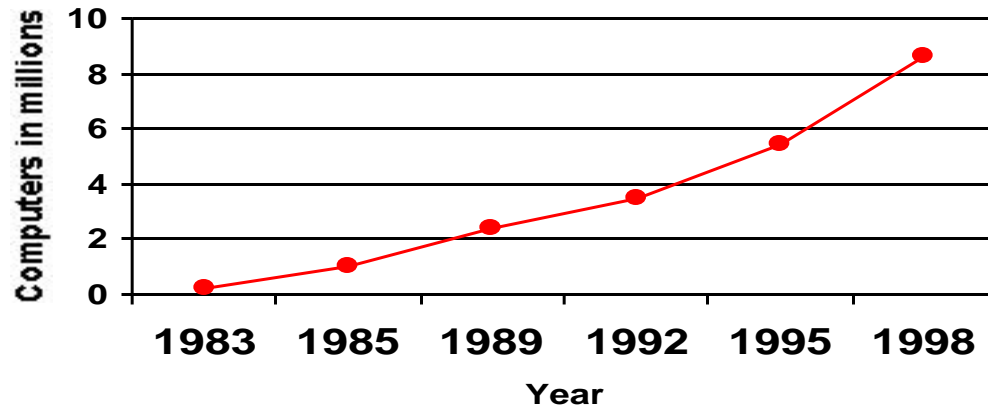
Computer and Internet Presence in U.S. Schools, 1998

Ron Anderson, Univ. of Minnesota

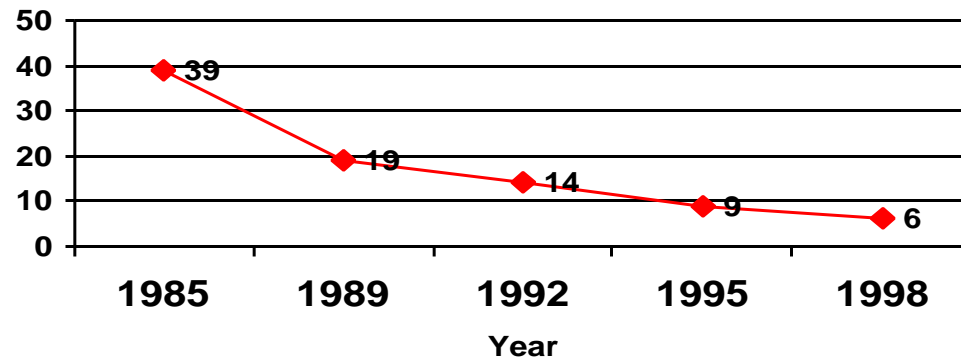
Teaching, Learning, & Computing—1998

- A representative sample of all U.S. schools, public and private (Probability Sample)
- A sample of schools involved in major reform projects and schools with high-end technology (Purposive Sample)
- Three-quarters of sampled schools participated in the study
- National school-level estimates from Probability Sample:
488 principals and 467 school technology coordinators,
each in 65 to 70% of the participating schools

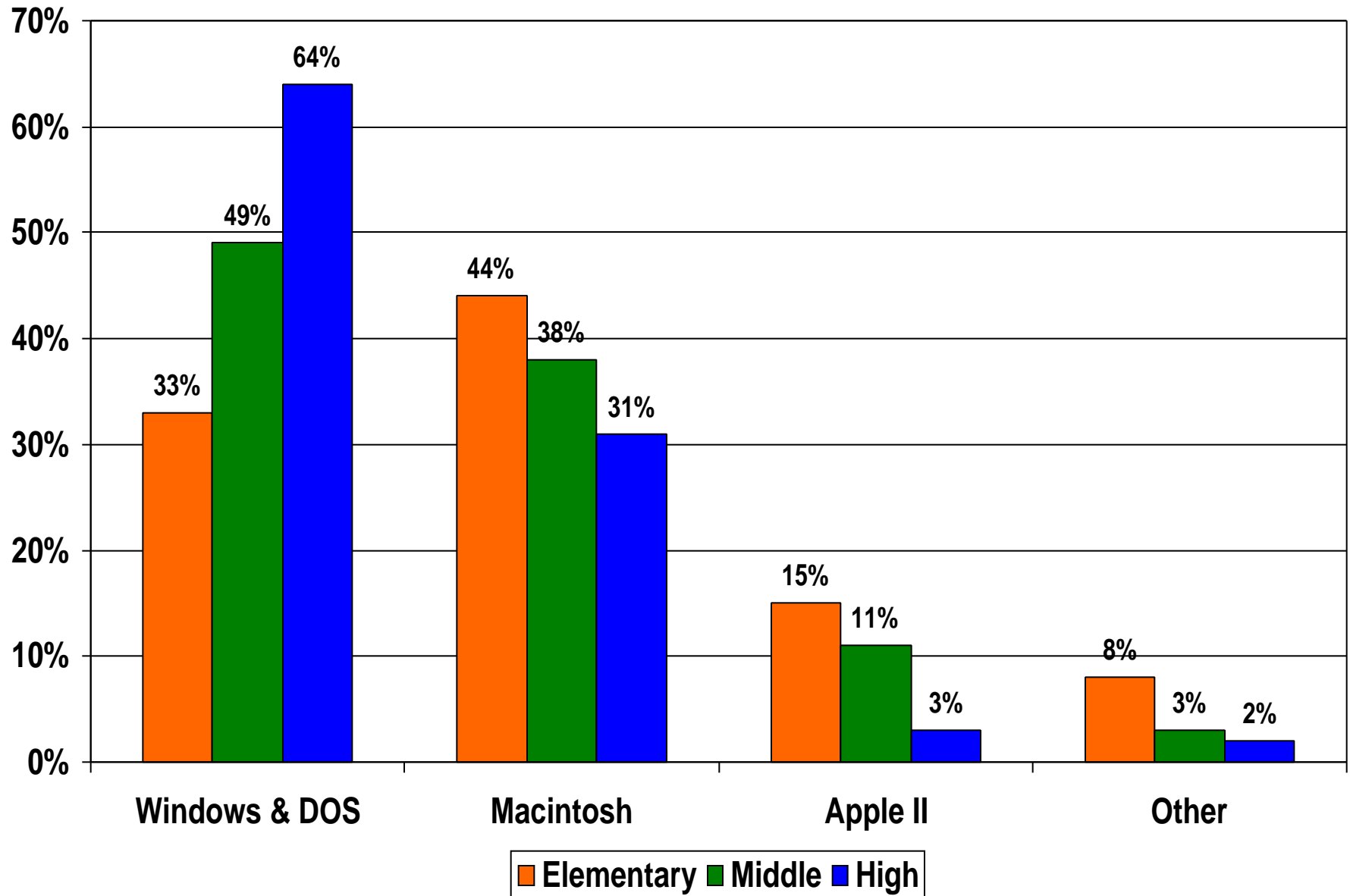
Total instructional computers in USA, 1983 to 1998



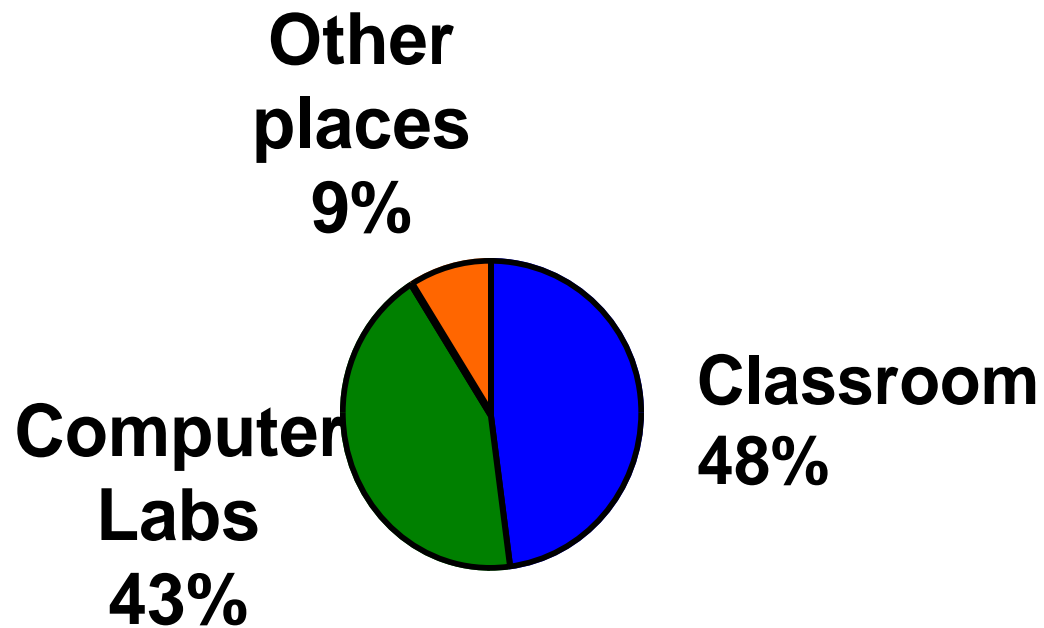
Students per computer in US Schools



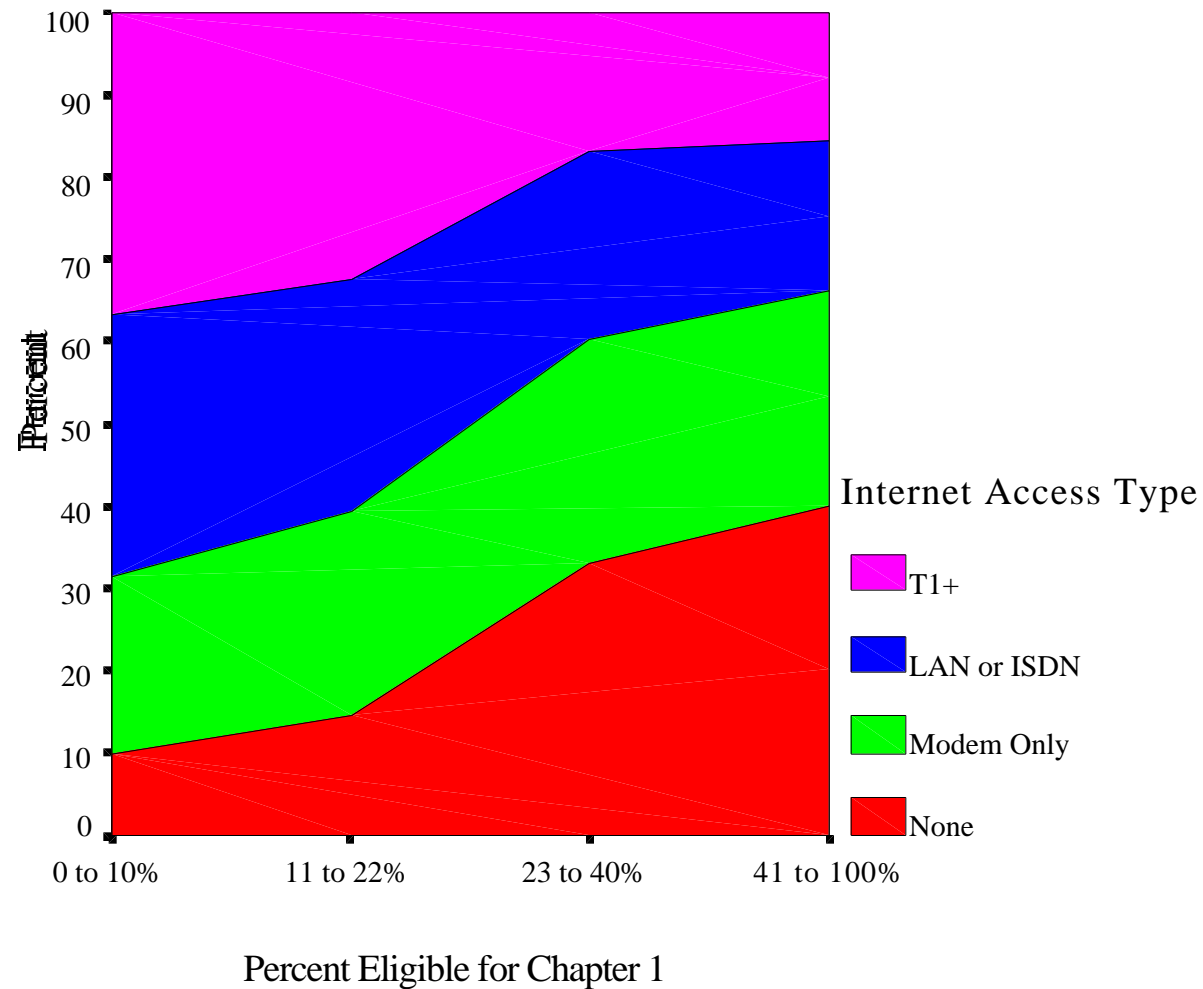
Type of Computer by School Level



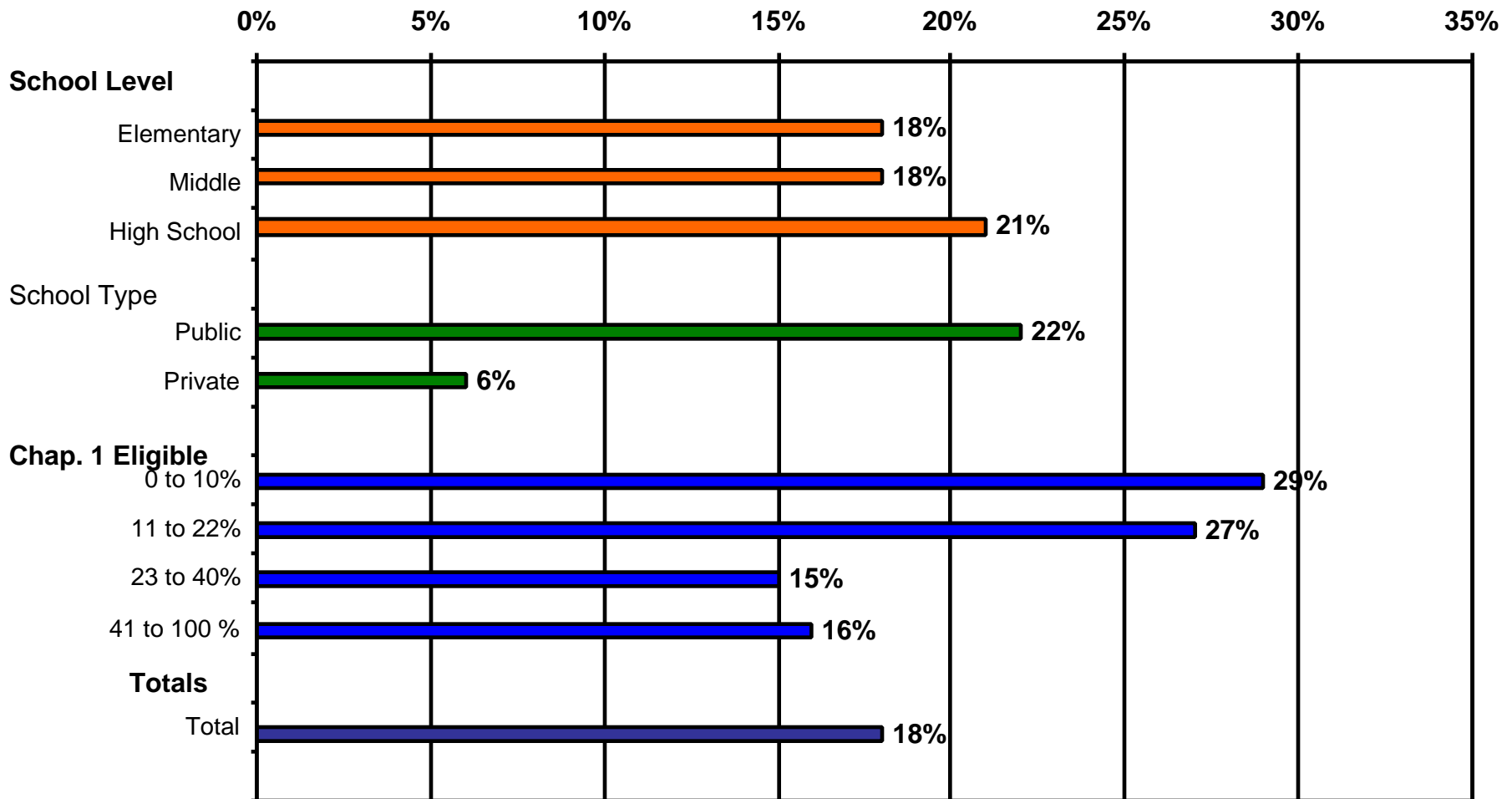
Locations of Instructional Computers



Type of Internet Access by Poverty Index (Percent Chapter 1 Eligible)



Average Percent of Instructional Rooms with a LAN Connection to the Internet by School Level, School Type, and Percent of Students that are Chapter 1 Eligible



School Tech Level (Are Schools Computer-Intensive?)

High Tech Level (computer-intensive) is when a school has:

- (1) a student-computer ratio of 6 or less, &
- (2) at least 25% of their computers have CD-ROM for multimedia, &
- (3) school has moderate or high speed Internet access

Low Tech Level: (all other schools)

FINDINGS:

- * 20% of all U.S. schools qualify as High Tech Level
(computer-intensive)
- * High Tech levels are more likely in public versus private schools, secondary versus elementary, smaller versus larger, and higher SES versus lower SES.

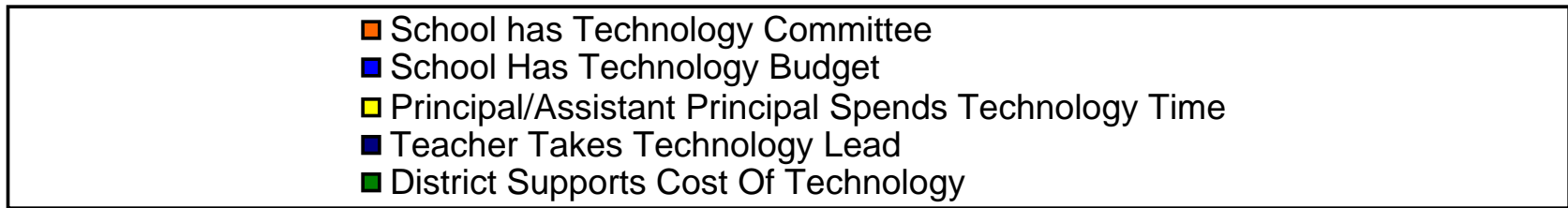
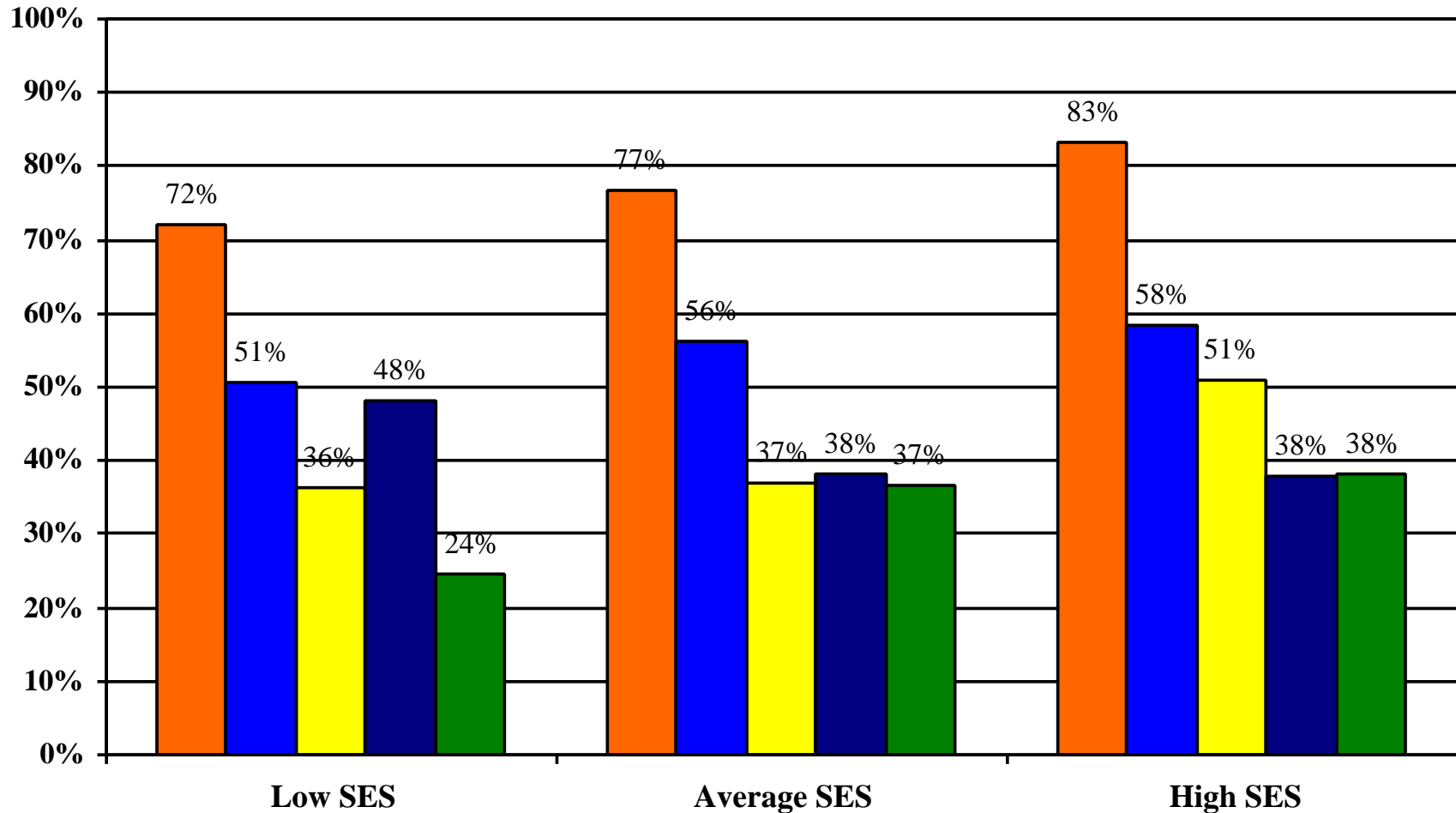
School Technology Decision-Making

Amy Ronnkvist, Univ. of Minnesota

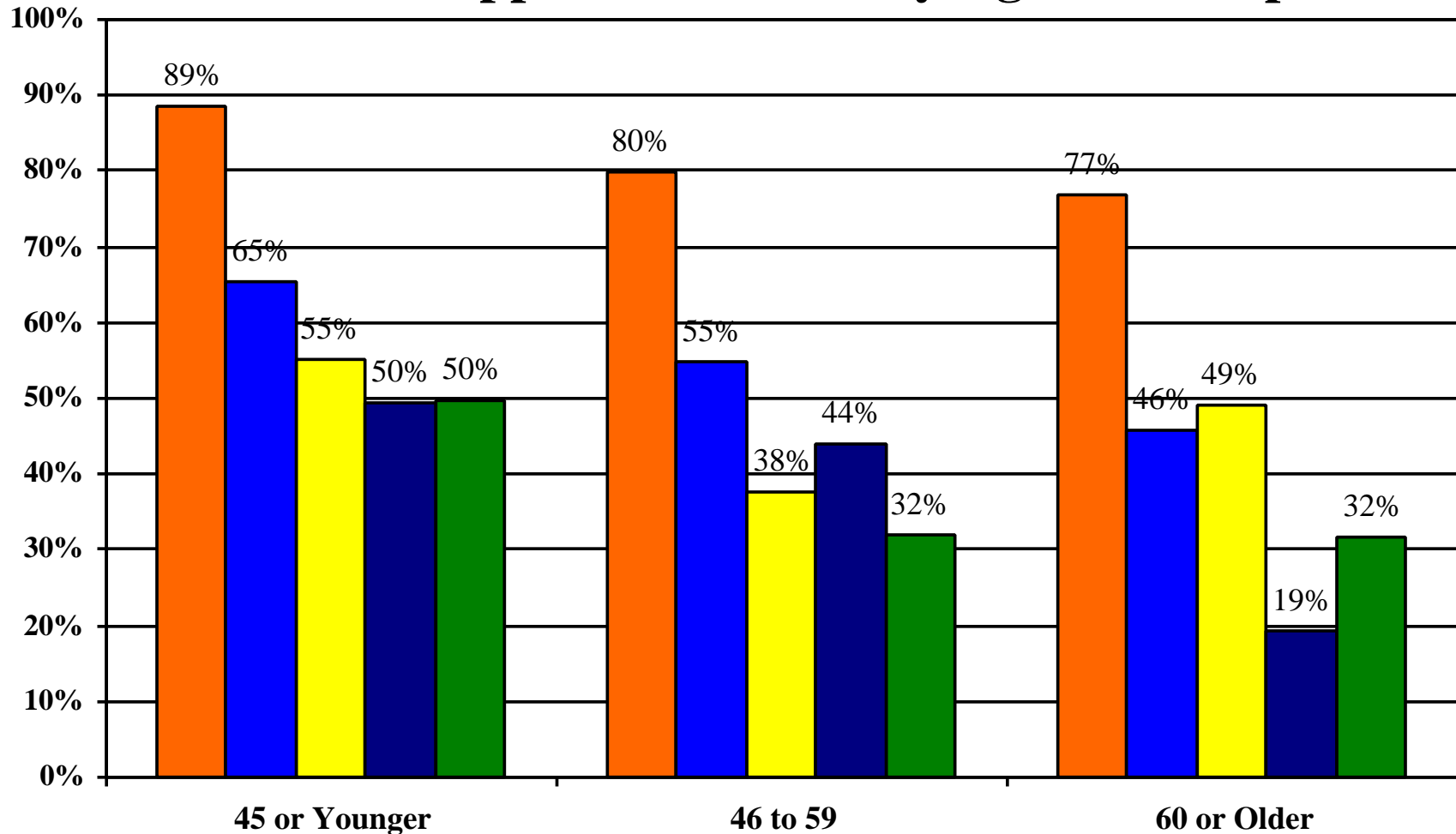
Support Structures For Technology Decisions

- Do teachers take the lead on technology? (37%)
- Do schools have technology committees? (79%)
- Do principals or assistant principals spend time on technology? (42%)
- Do districts/dioceses support technology? (33%)
- Do schools have a technology budget? (53%)

Decision Support Structures by SES



Decision Support Structures by Age of Principal

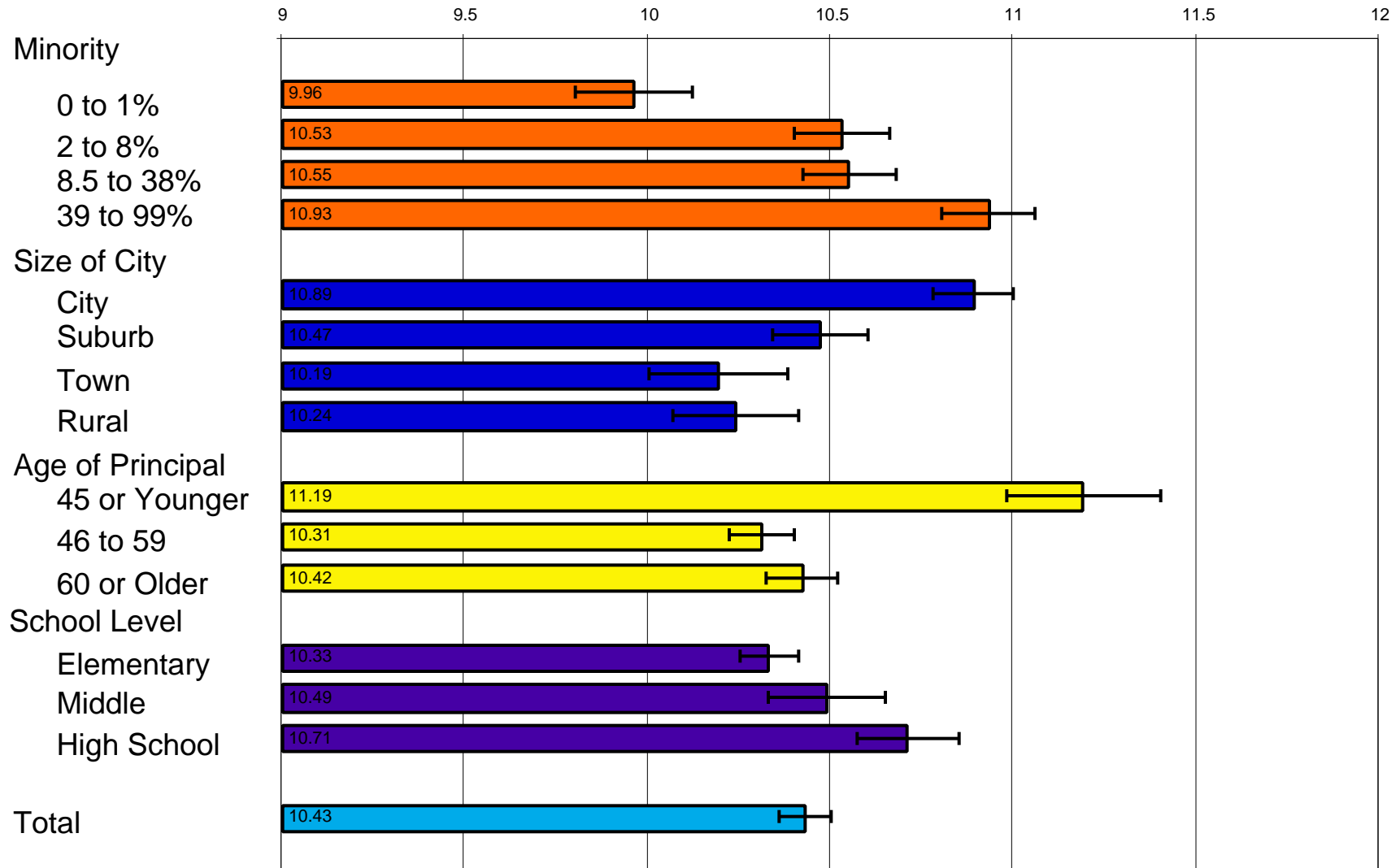


- School has Technology Committee
- School Has Technology Budget
- Principal/Assistant Principal Spends Technology Time
- Teacher Takes Technology Lead
- District Supports Cost Of Technology

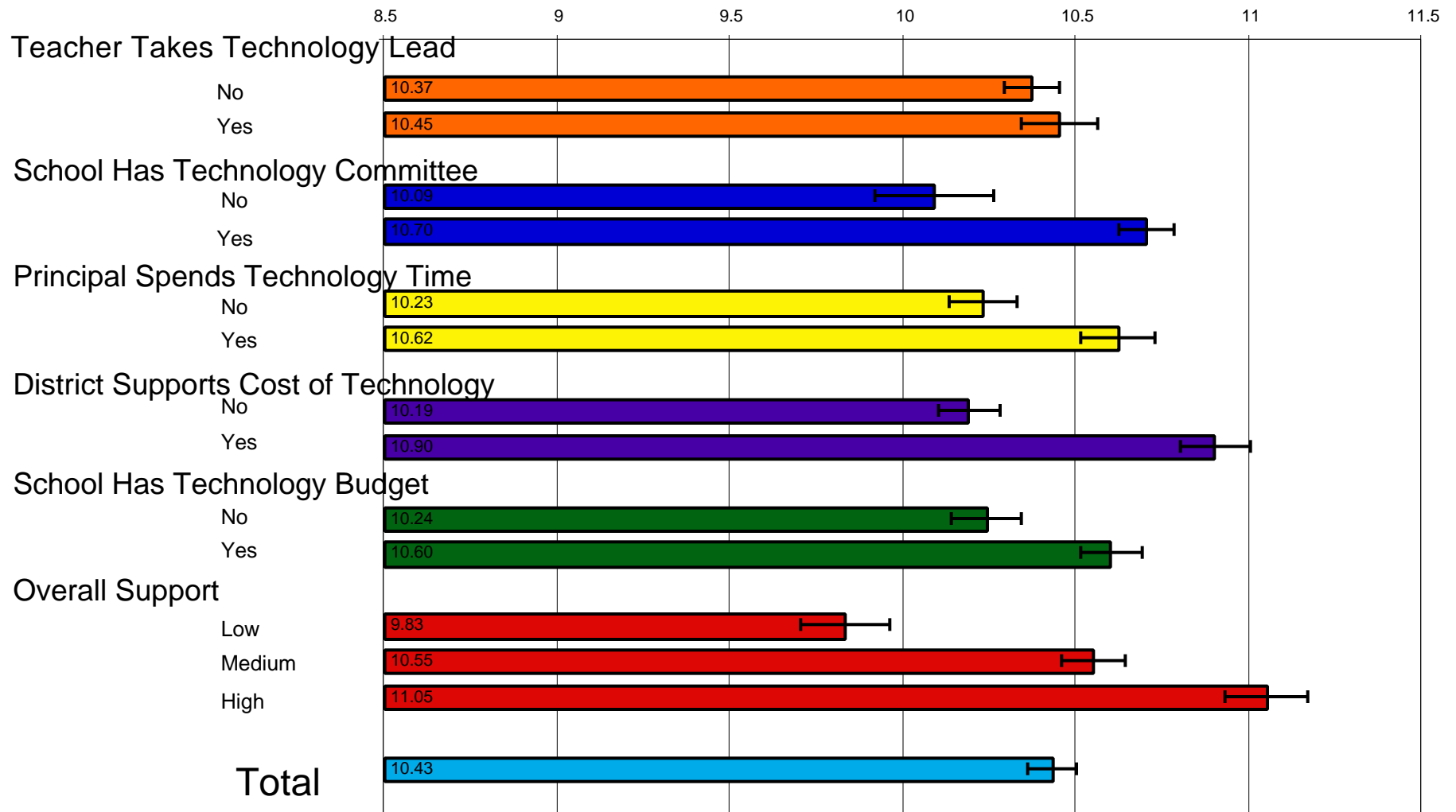
Constructivist Goals

- Principals were asked to identify which goals were important in shaping how computers were being used
- We identified 4 goals related to constructivist strategies:
 - Preparing students for future jobs
 - Promoting active learning strategies
 - Deepen student understanding
 - Supporting instructional reform
- Principals rated each goal on a scale from 1 to 3 where 3 indicated the goal was very important
- The score of these 4 goals were summed to indicate support of constructivist strategies

Constructivist Goals by School Characteristics



Constructivist Goals by Decision Support Structures



Conclusion

- Variety of supportive structures are related to technology decision-making
- These structures likely to be found in schools with:
 - Constructivist goals
 - High SES
 - Locations in large cities
 - Principals who are young and non-white

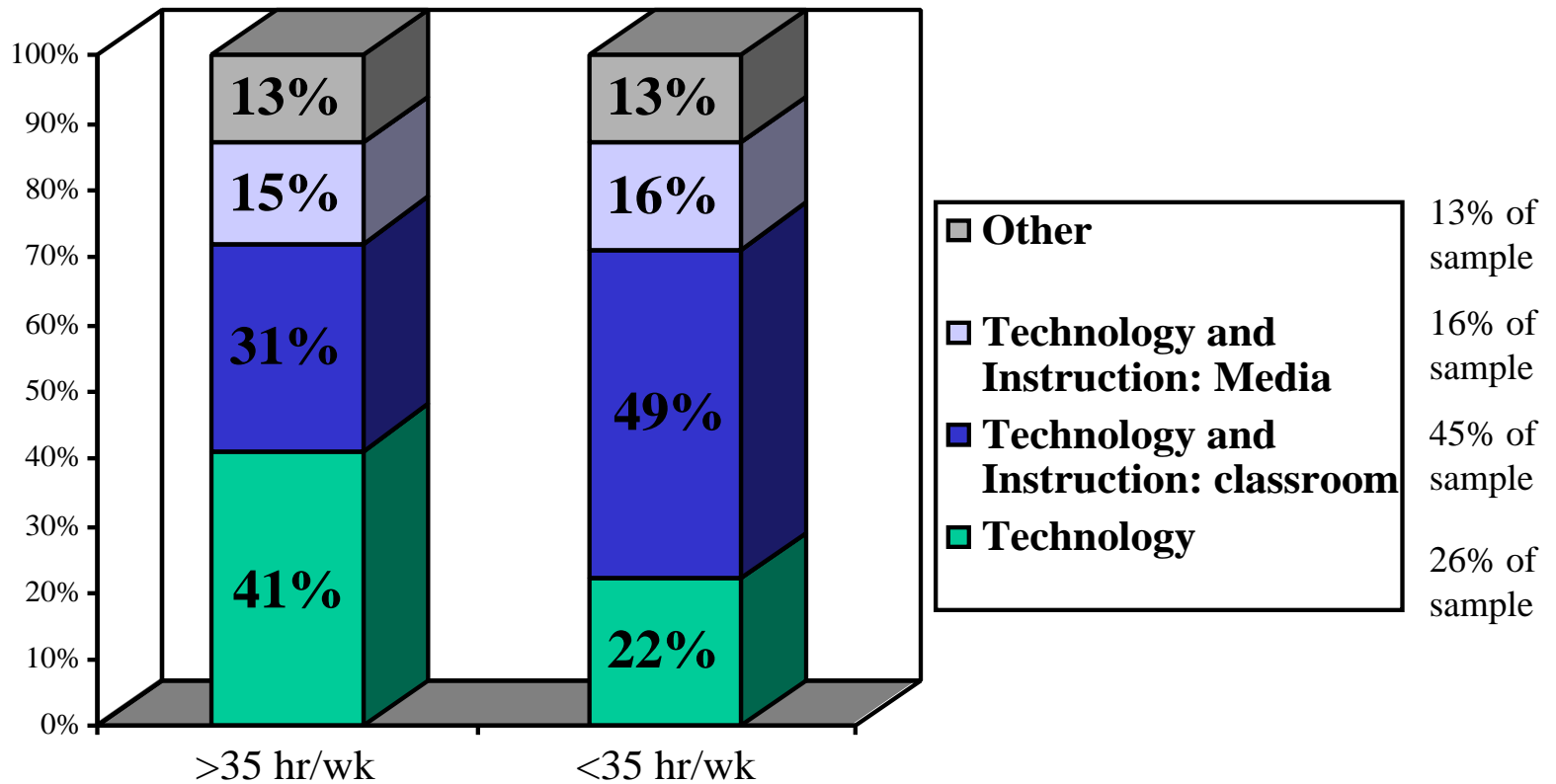
Technology Coordination and Support

Sara Dexter, Univ. of Minnesota

Technology Coordinators

- 467 respondents
- Probability sample only
- Indicated roles, grouped here by:
 - Technology and/or Network coordinator ~25%
 - Technology and Instruction *Classroom* ~45%
 - Technology and Instruction *Media* ~16%
 - Other ~13%

Time devoted to Technology Coordination by Type of Role

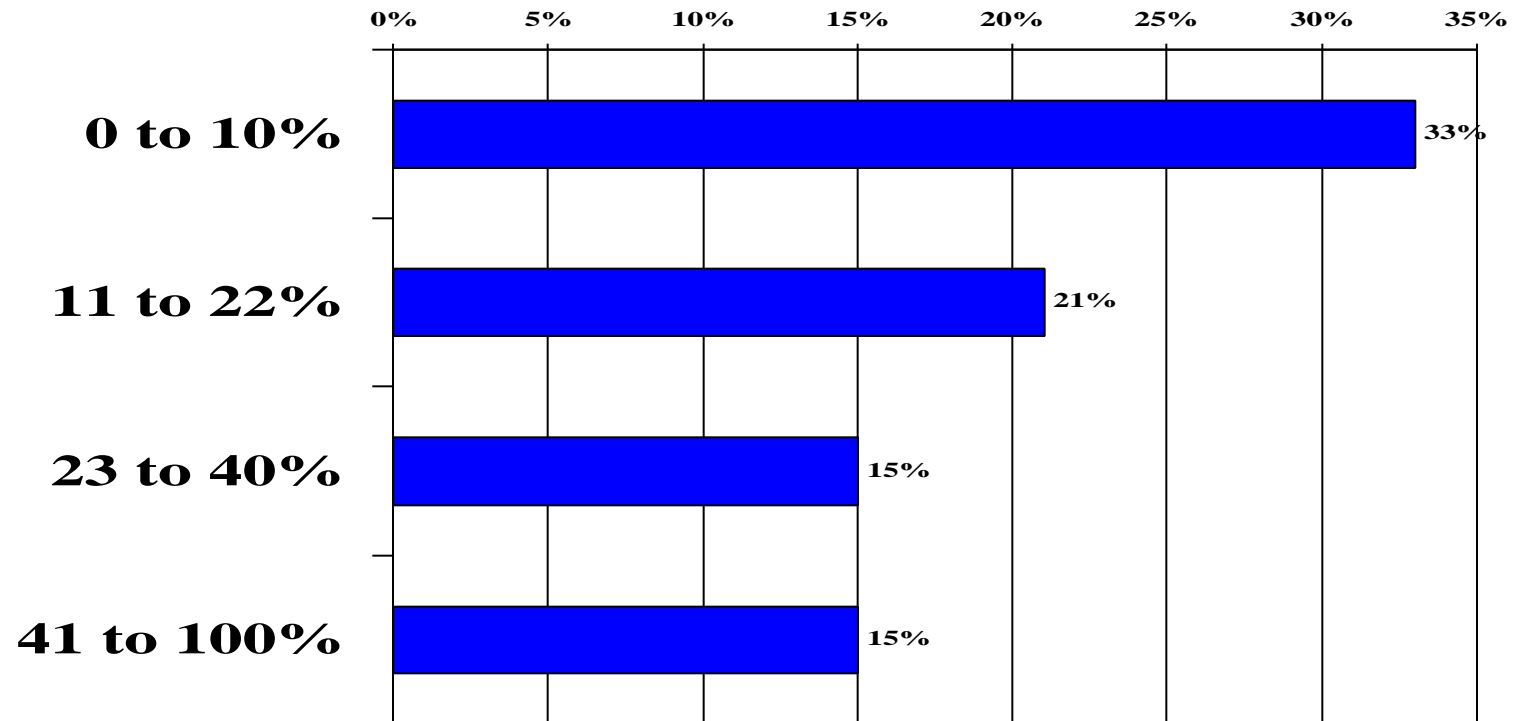


Overall, 20% of sample indicated spent more than > 35 hours/ wk on TC work

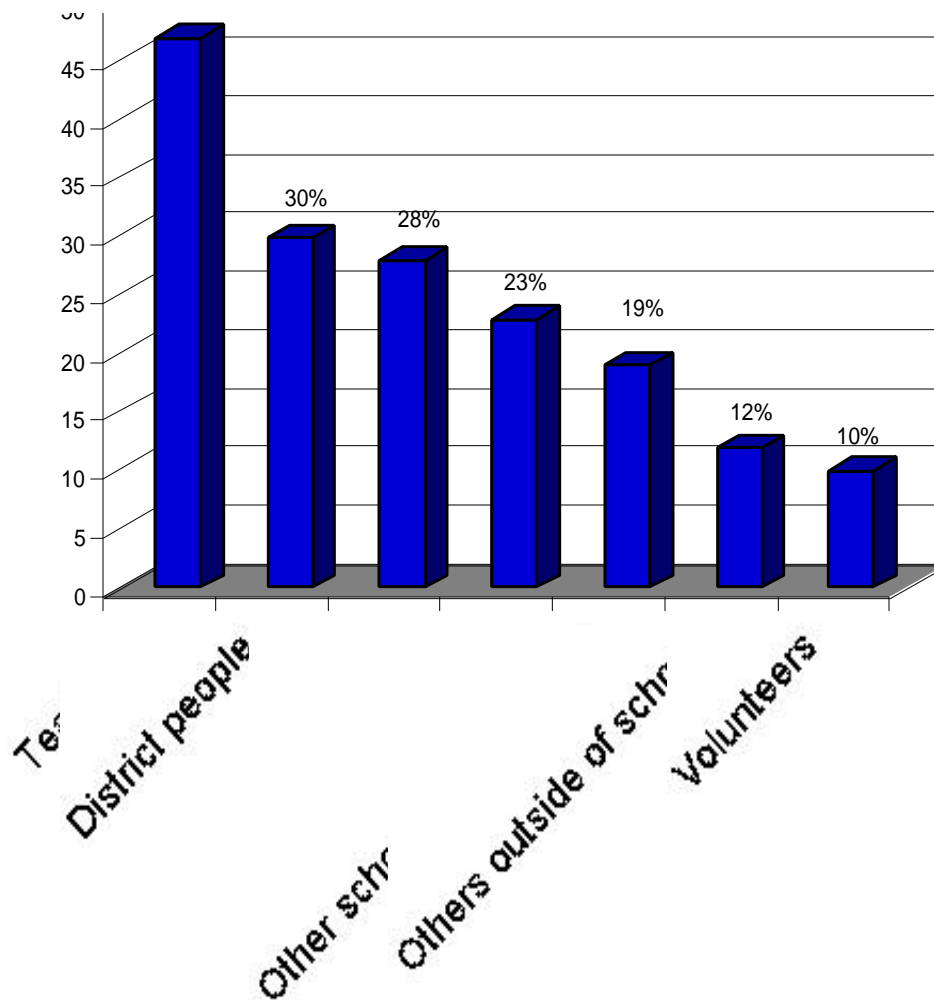
Schools with “full-time” TCs tend to be

- High schools
- Public
- Large
- High income

Chap. 1 Eligible



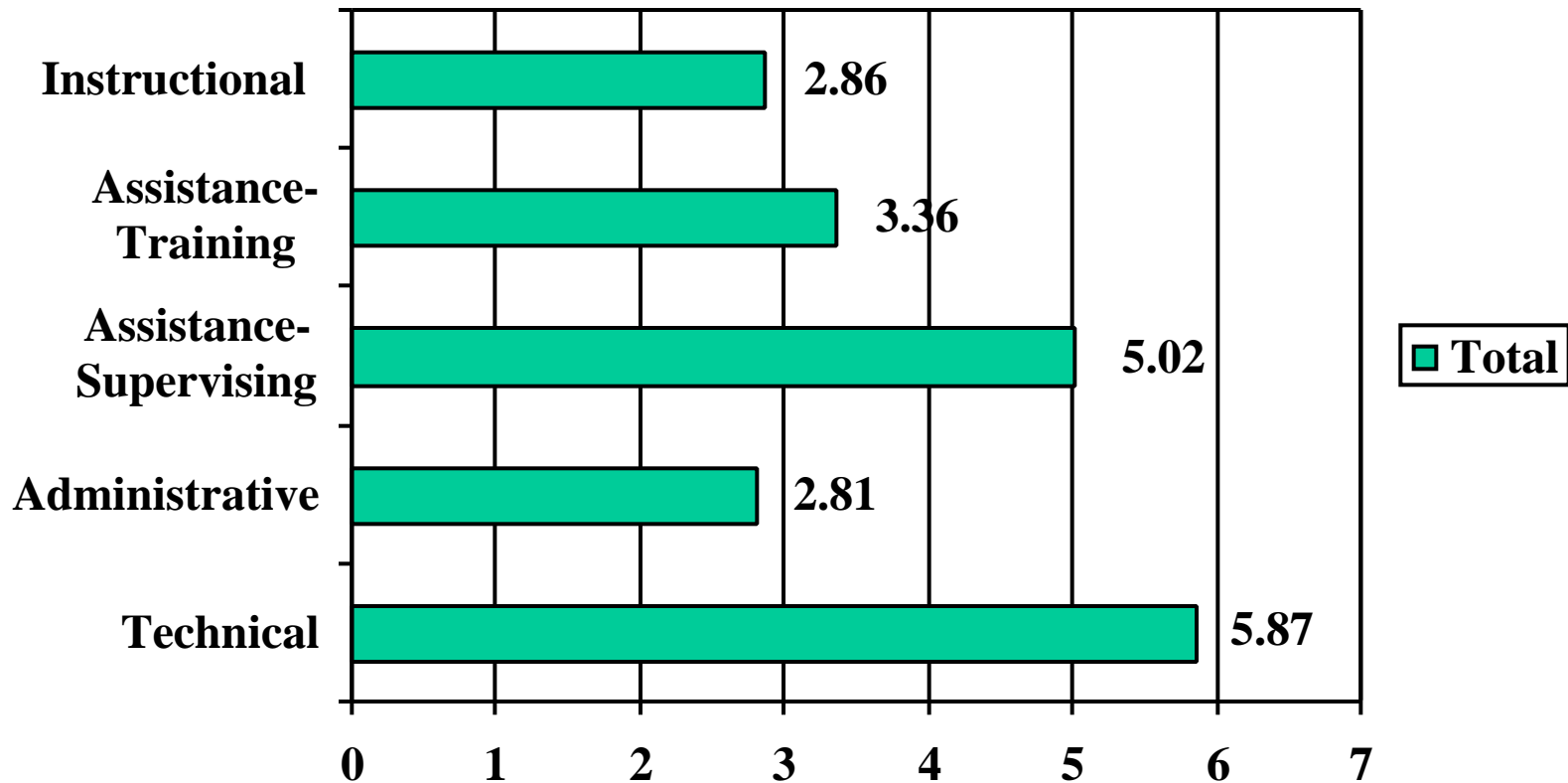
Who helps TCs?



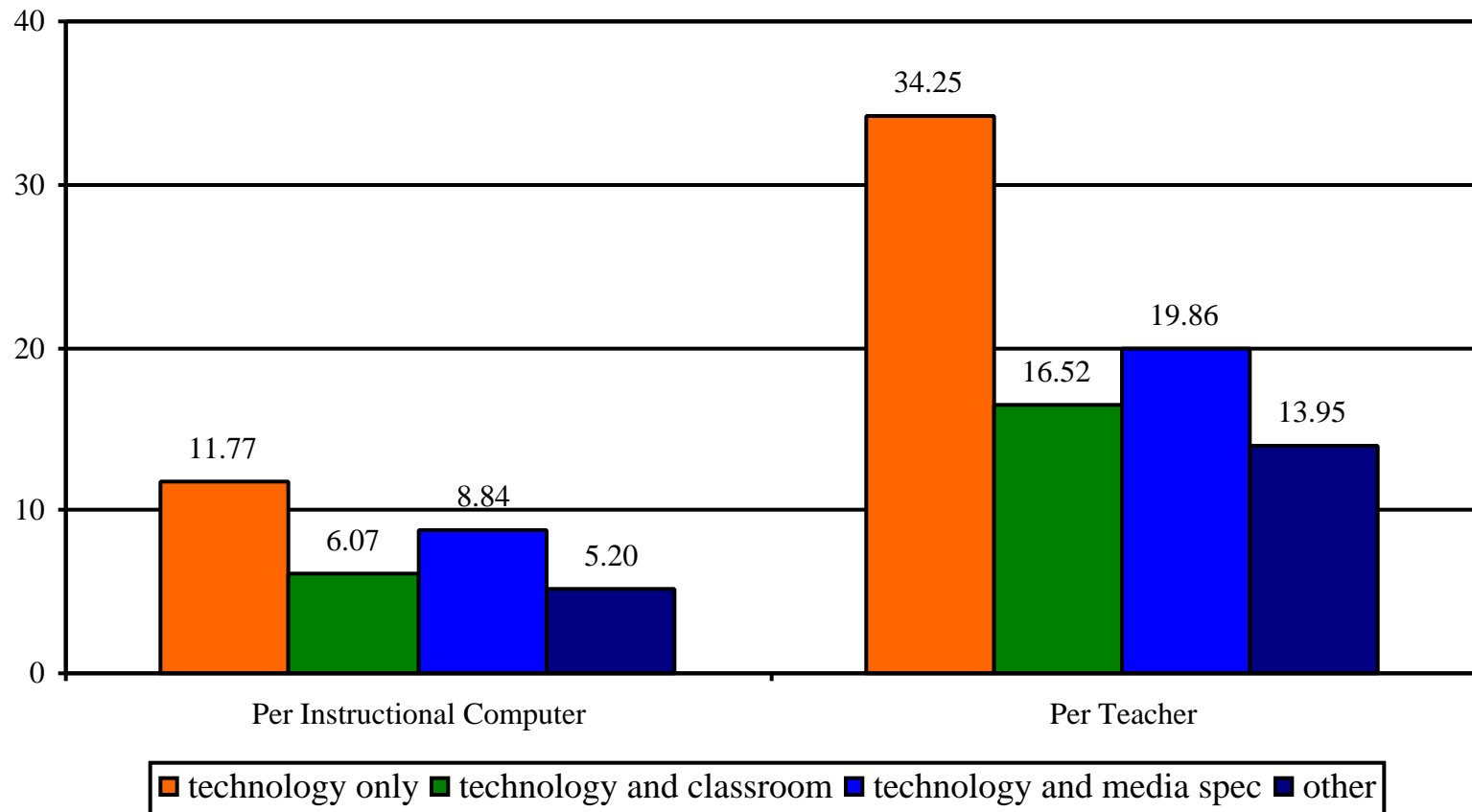
- 2 to 3 additional people,
- 19 hours extra support
- Average annual total = ~540 hrs

- Teachers
- District People
- Aides
- Administrators

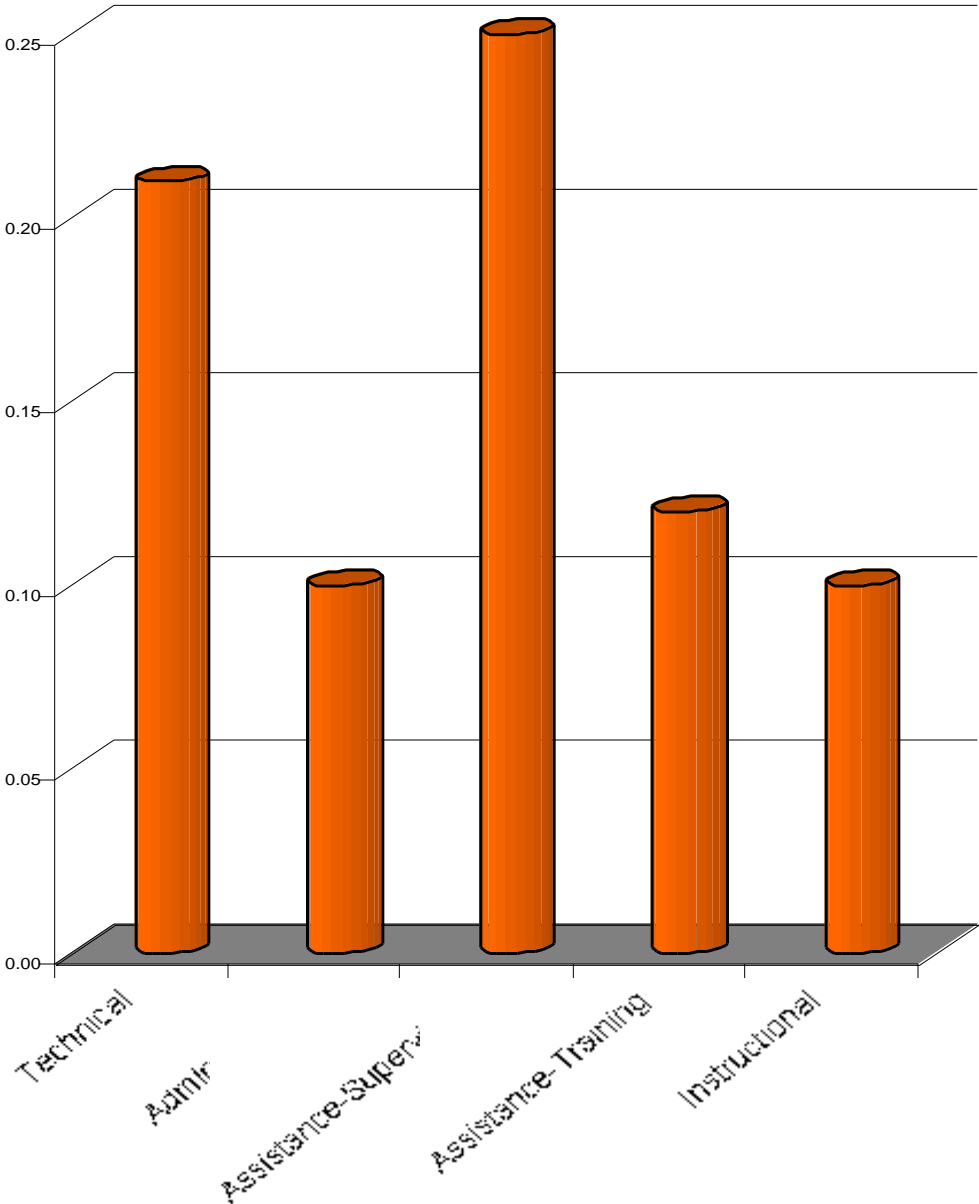
Total Weekly Hours Spent on Technology Tasks



Annual Hours Spent on Support by All Persons by Work Roles



Annual Hours Spent on Technology Coordinator Tasks Per Teacher



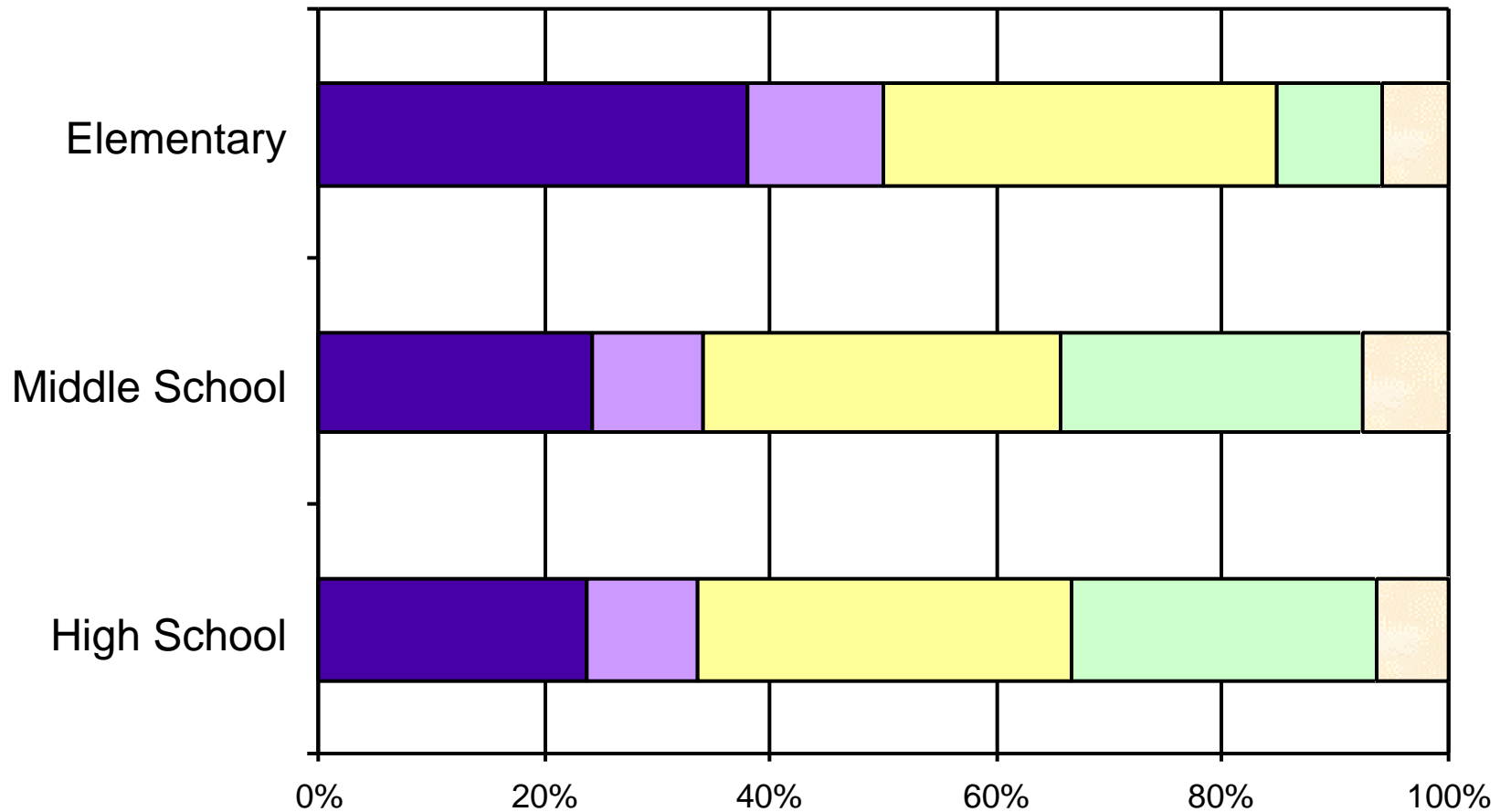
Teacher-Directed Student Computer Use in U.S. Schools, 1998

Jason Ravitz, Univ. of California, Irvine

The Teacher Sample in TLC

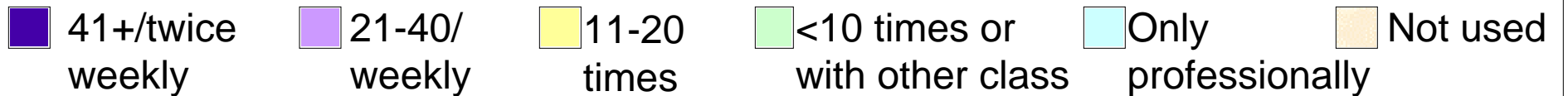
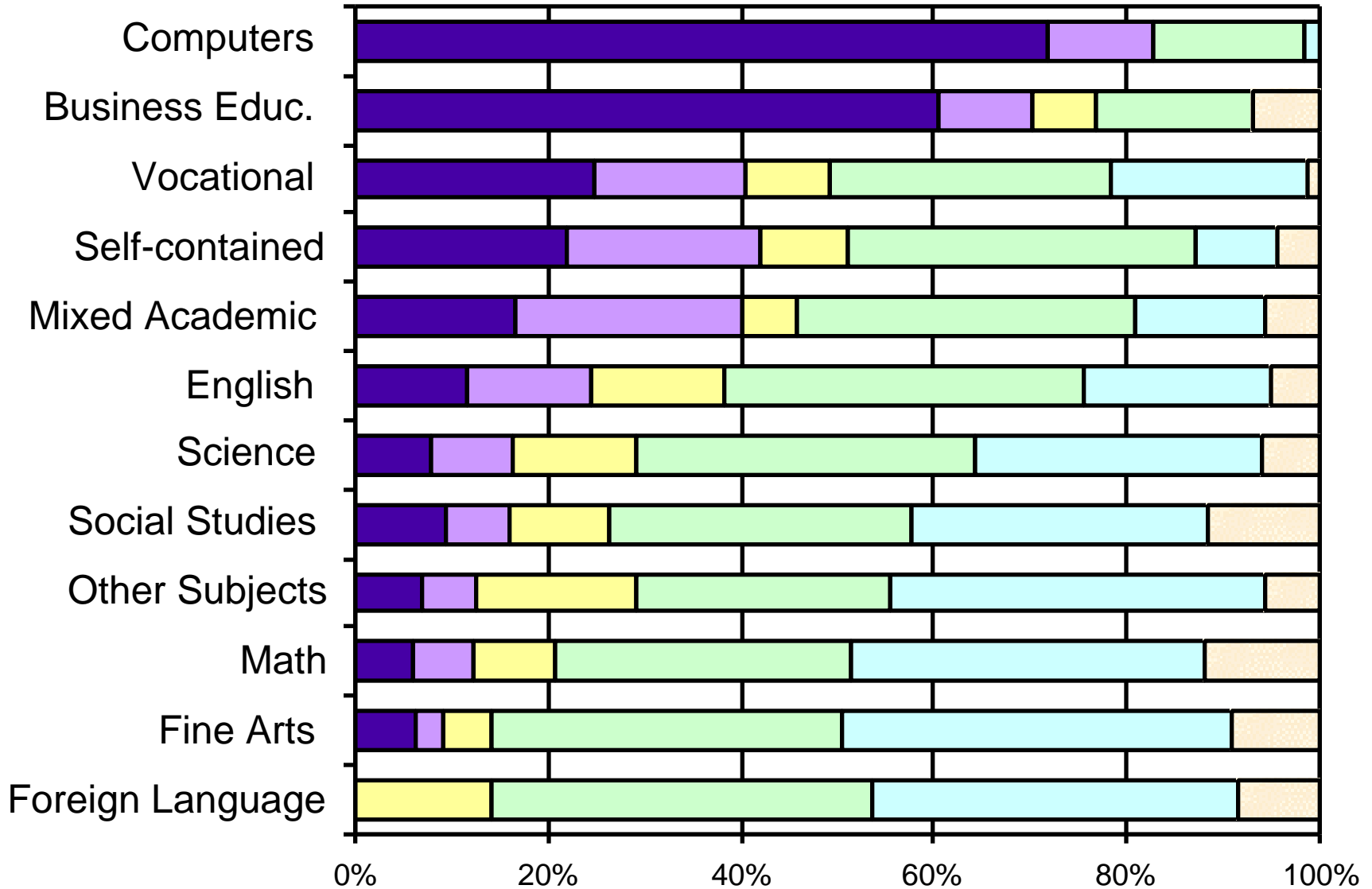
- Teachers in the Probability Sample of all U.S. schools and teachers in the Purposive Samples of reform and high-tech schools
- Over 4,100 teachers in 1,100 schools participated, nearly 70% of those sampled
 - Completed 20 page questionnaires
 - Four different versions; heavily overlapping questions
- The sampling process disproportionately selected active computer-users and reform-oriented teachers.
 - BUT data was re-weighted to reflect a “simple random sample” of teachers
- This presentation uses data only from the Probability Sample: 2,251 teachers

Computer Use by School Level Taught

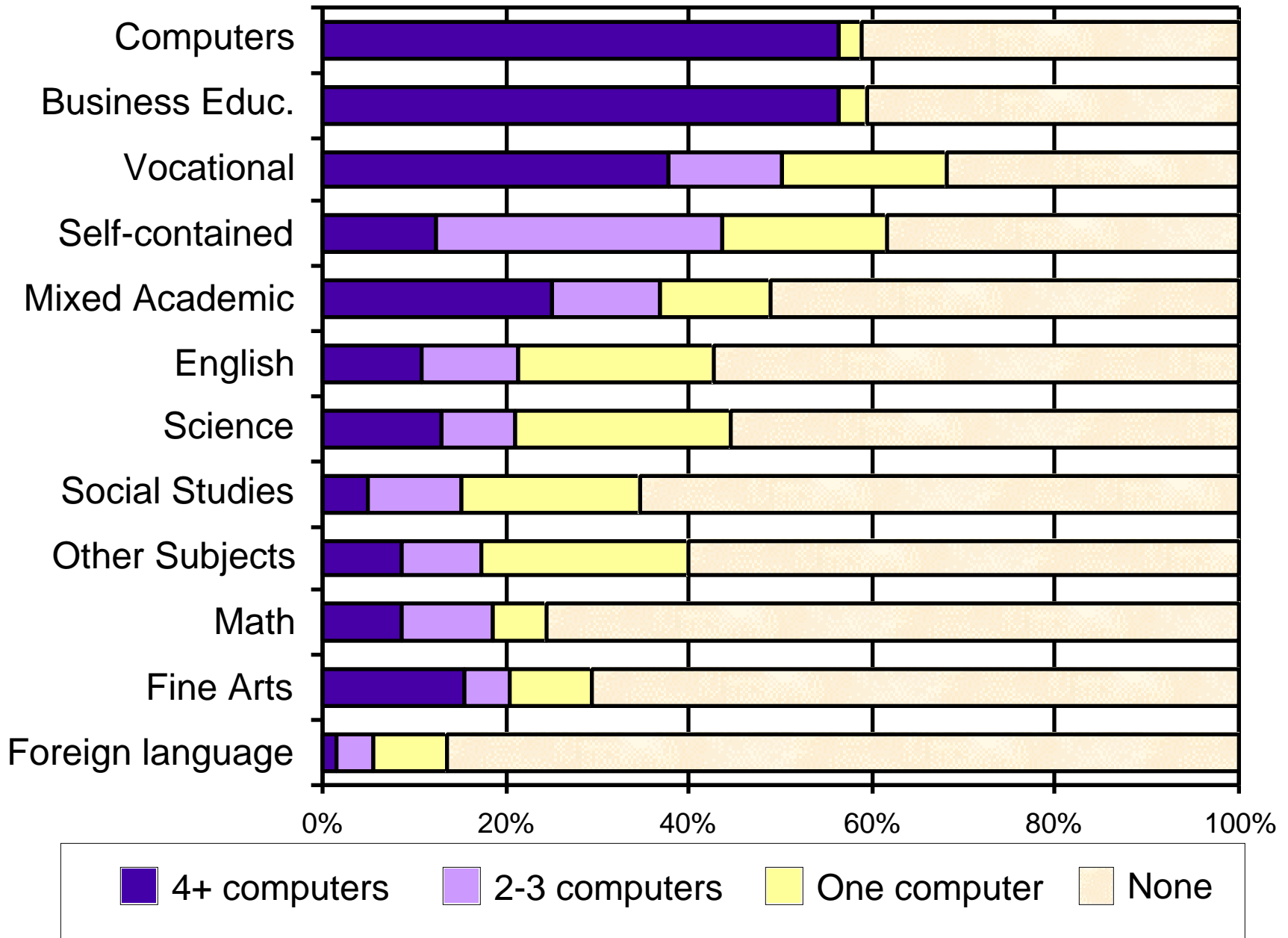


Weekly + 11-20 times <10 times or with other class Only professionally Not used

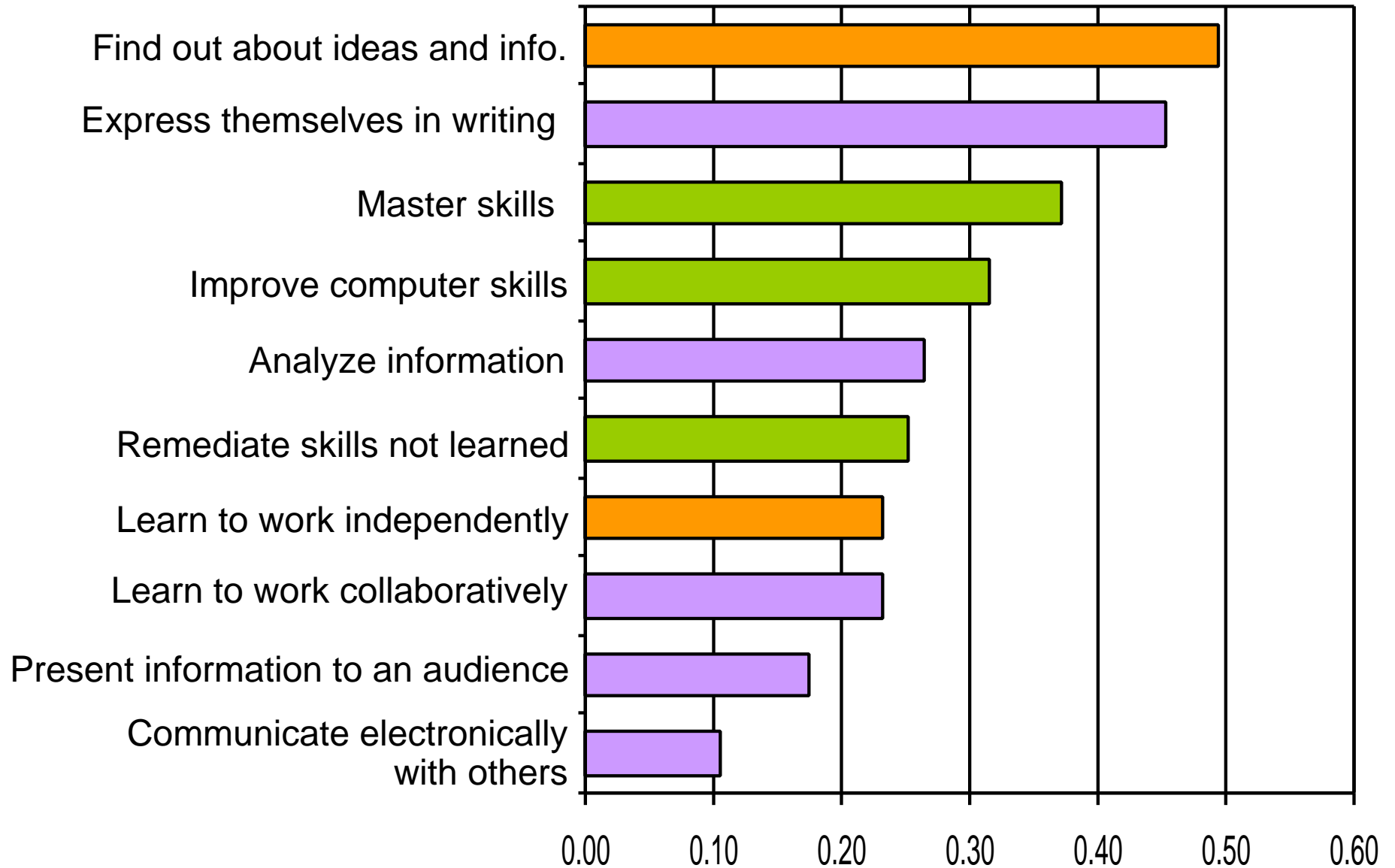
Computer Use by Subject Matter Taught



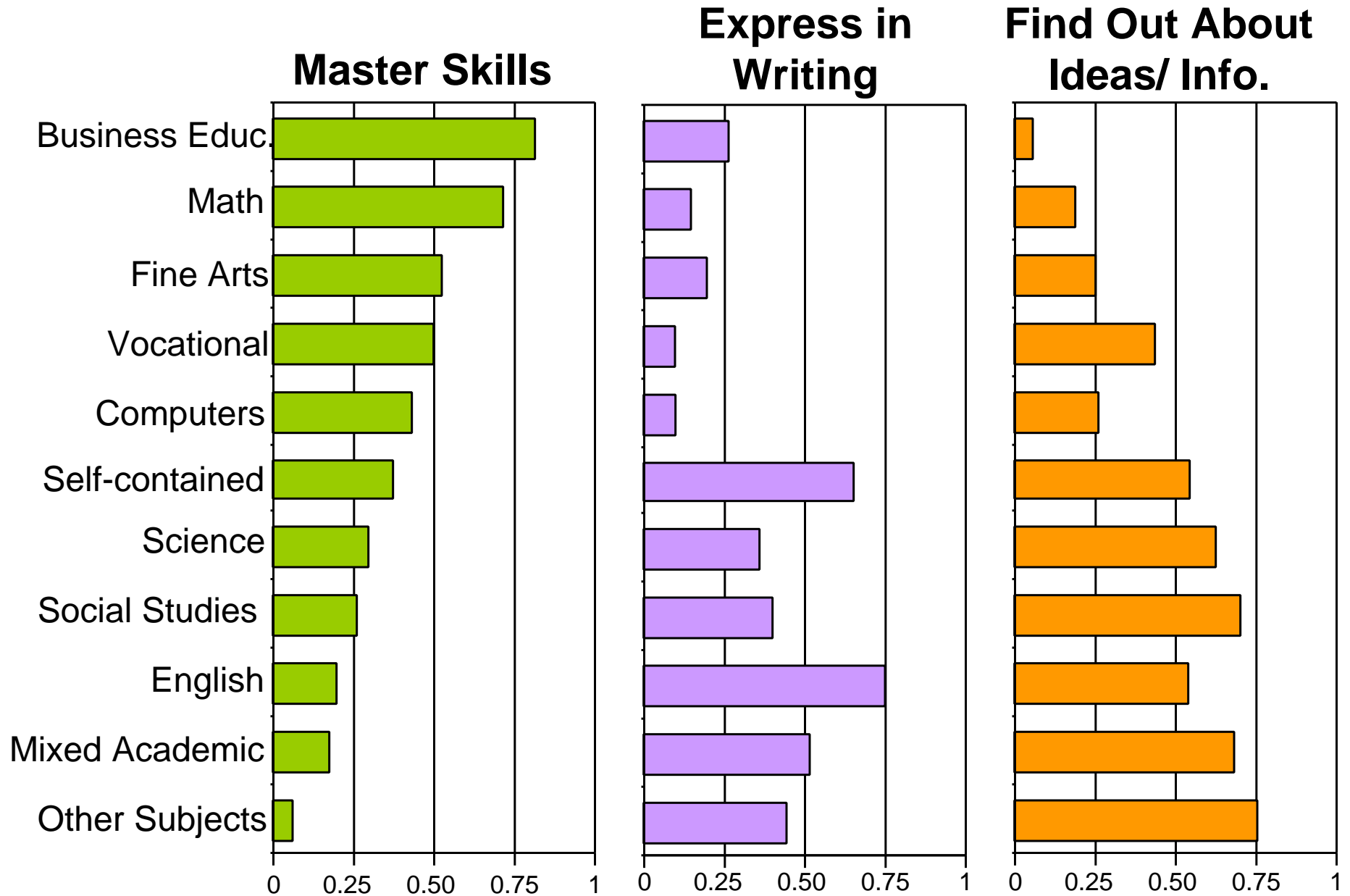
Number of Computers in Classroom by Subject



Objectives for Student Computer Use



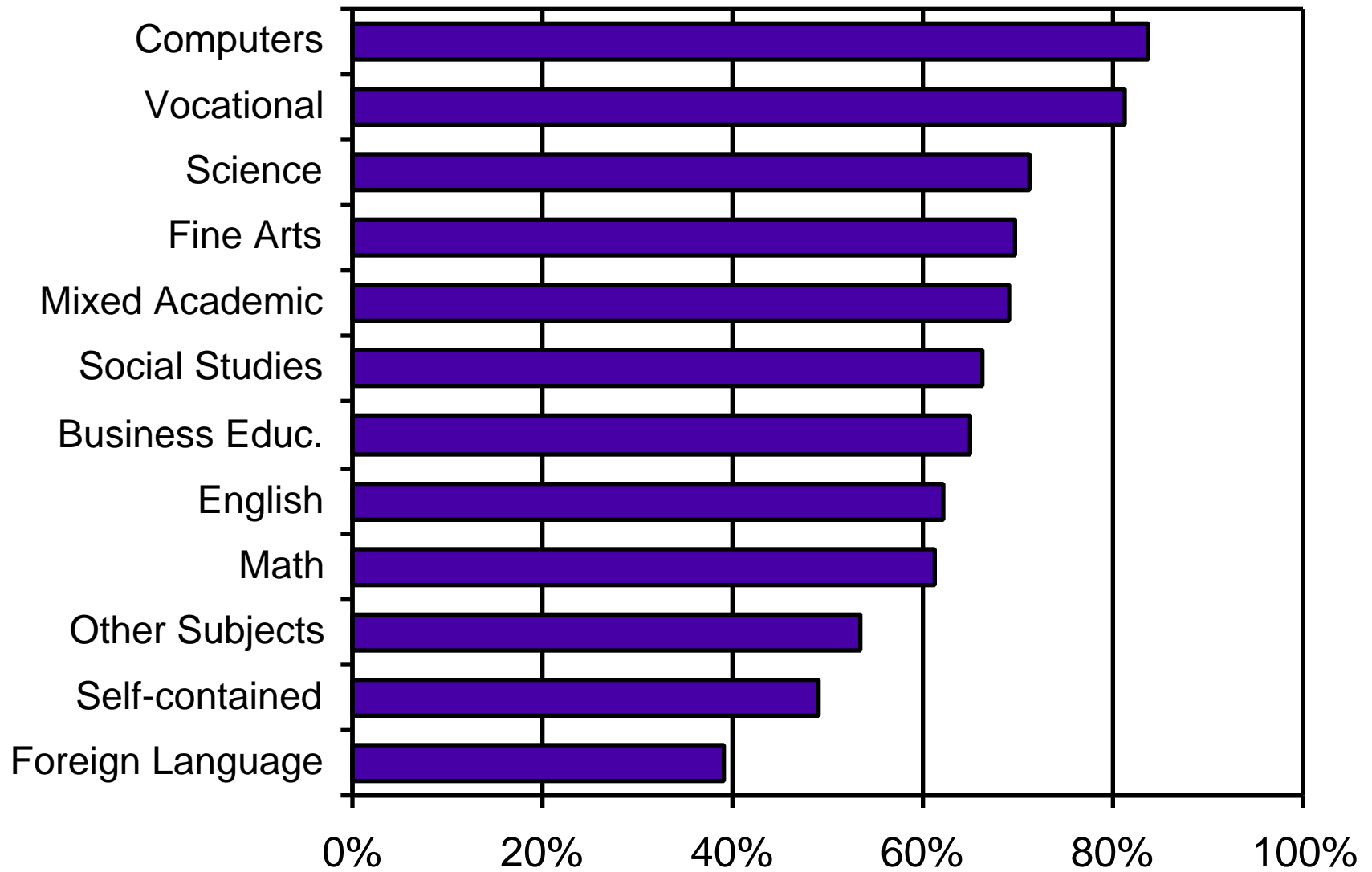
Top Three Objectives for Student Computer Use



Teacher Computer Use and its Supporting Context

Margaret Riel
Center for Collaborative Research in Education
University of California, Irvine

Teacher Provided With Desktop Computer For Use at School



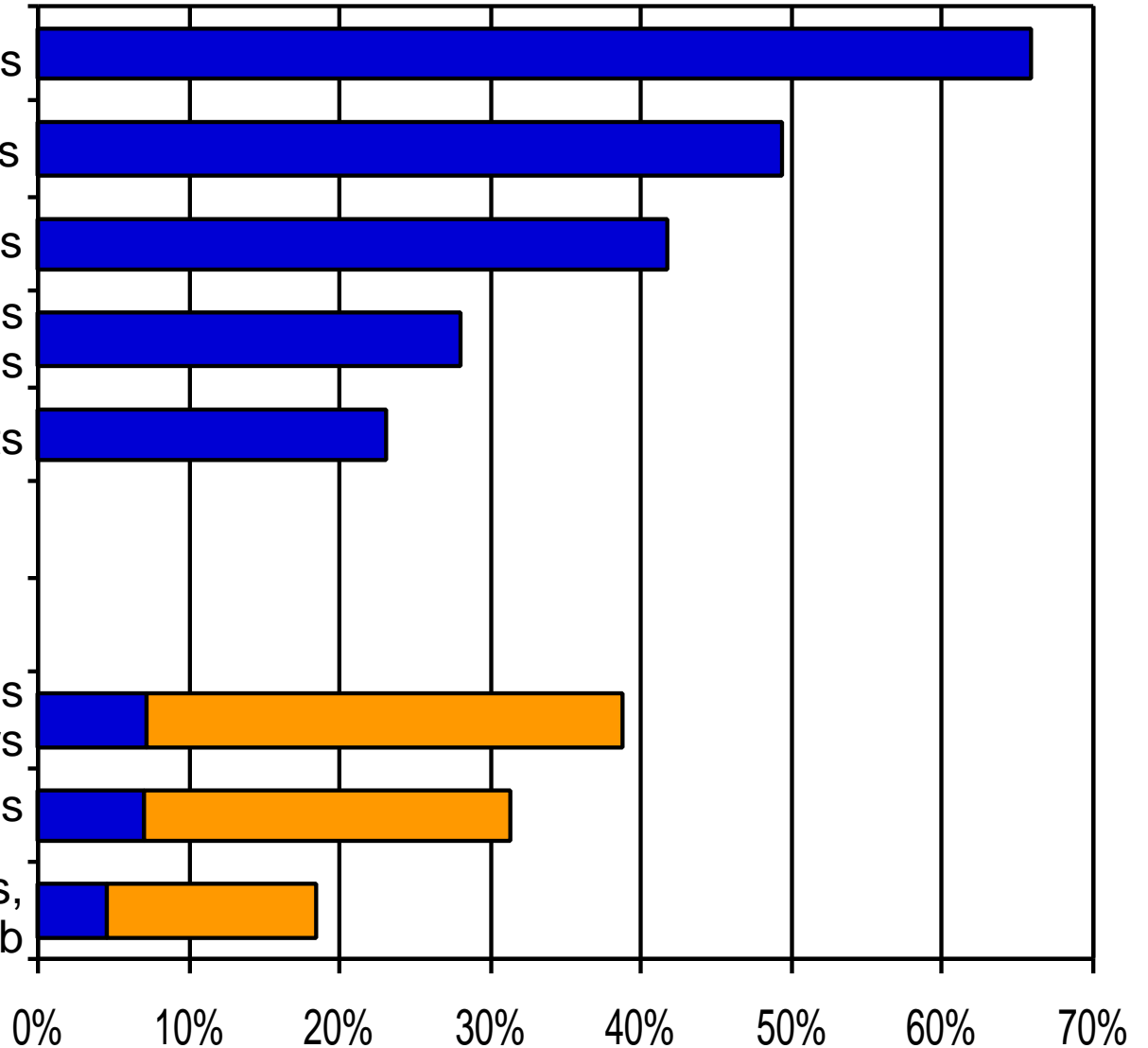
Professional Computer Use

Weekly or more often....

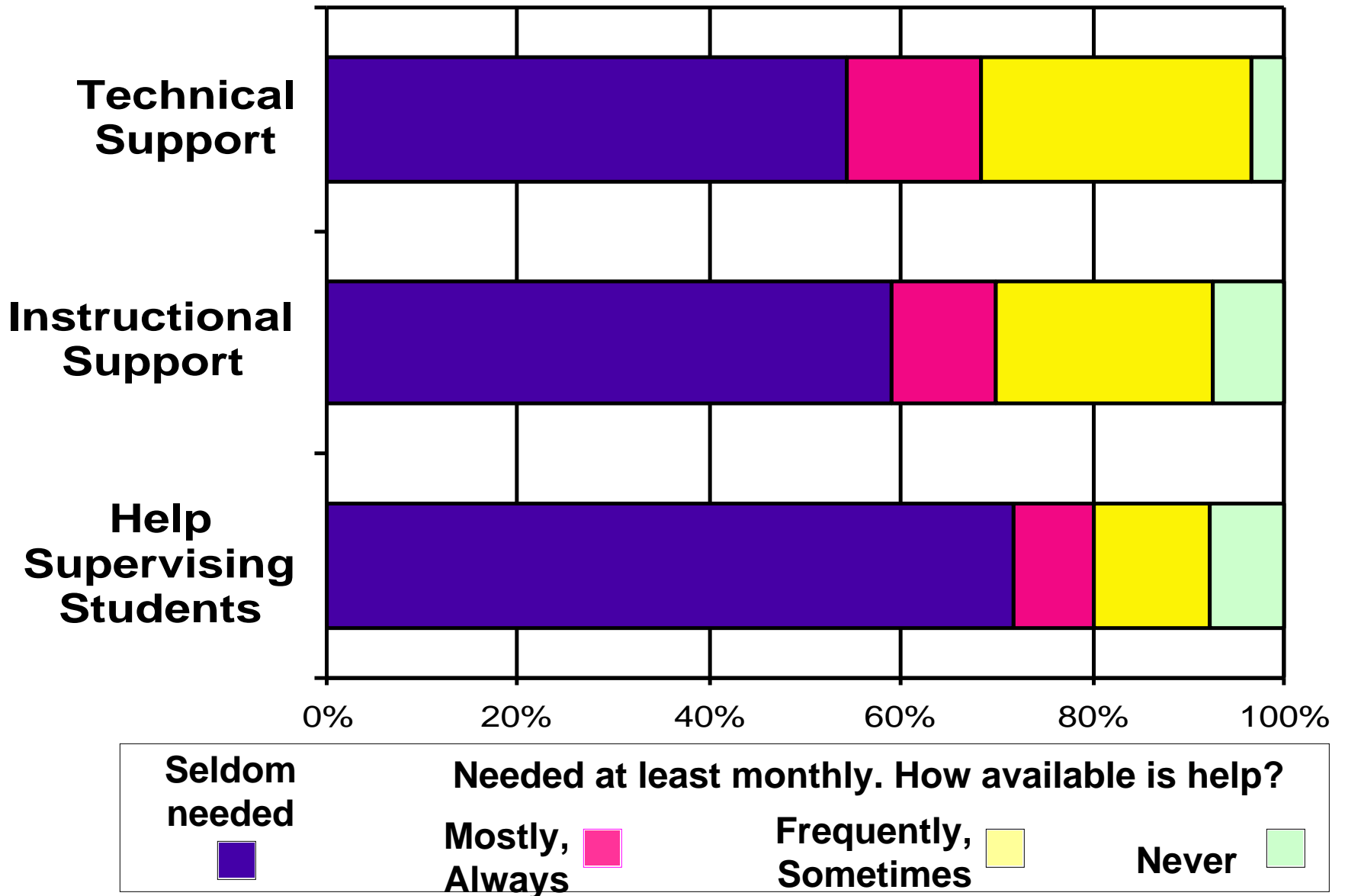
- Make handouts
- Record/calculate grades
- Write lesson plans
- Get info. or pictures from Internet for lessons
- Correspond with parents

At least occasionally....

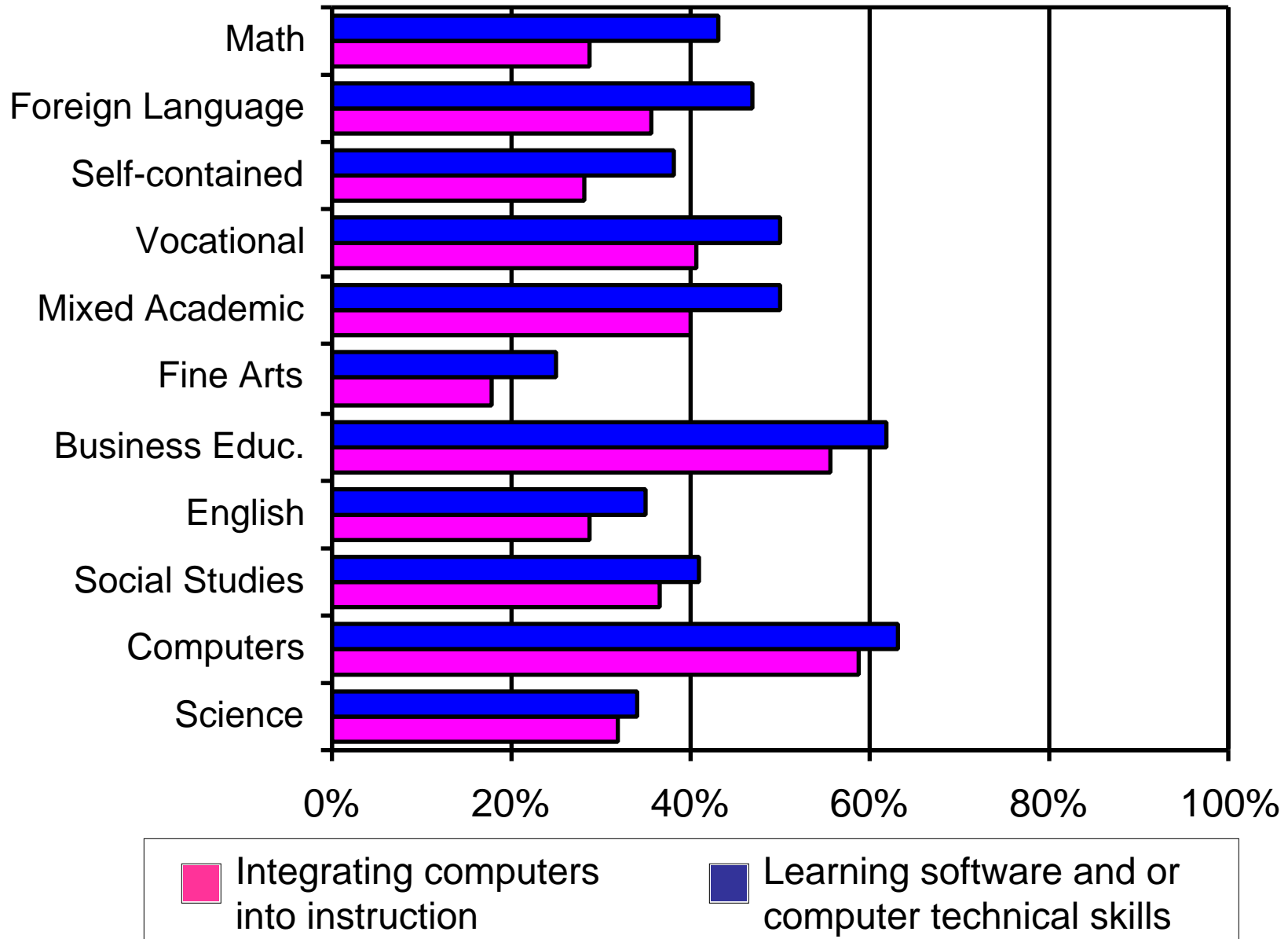
- Exchange computer files with other teachers
- Digitize images for class activities
- Post student work, resources, or ideas/opinions on web



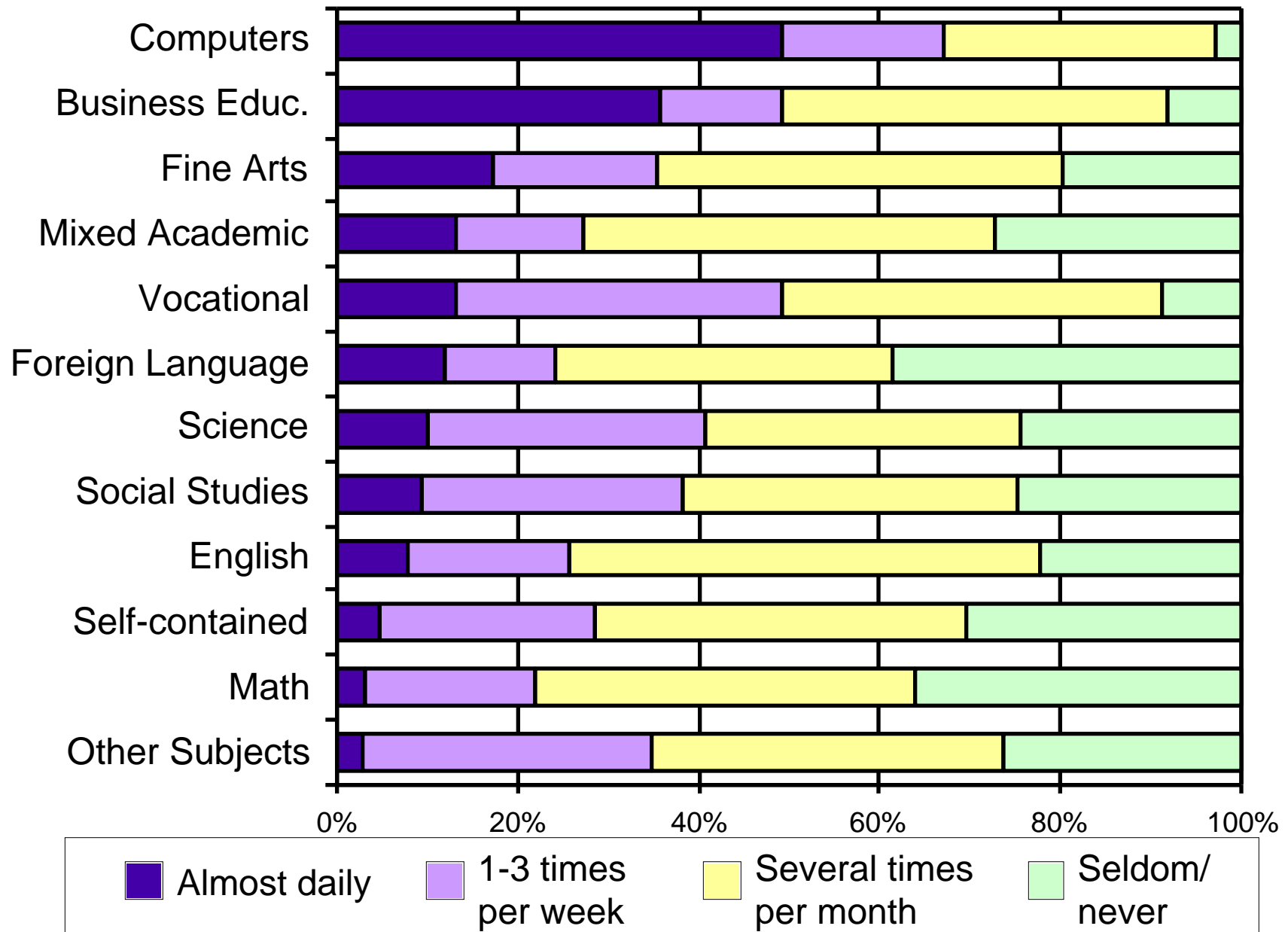
Need and Availability of Support



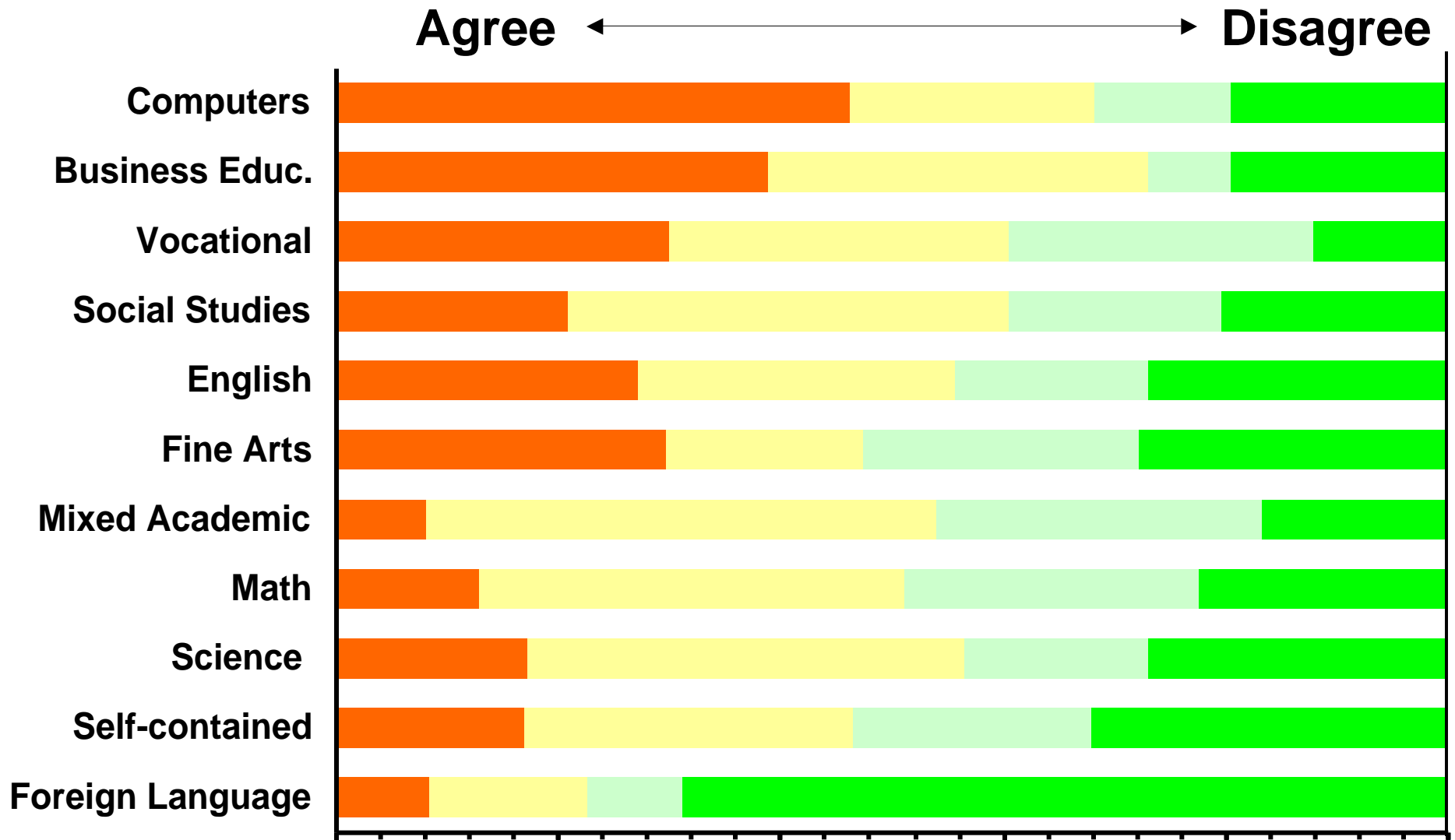
Percent of Teachers who Report that Computer Skills or Curriculum Integration was a Central Focus Staff Development



How Frequently Do Teachers Talk With Other Teachers About Computers, Software, or the Internet?



“The People Who Give Me the Best Teaching Ideas Know a Lot About Computers.”



Other Findings from TLC -1998

Hank Becker, Univ. of California, Irvine

TLC Sessions at AERA

Tuesday, April 20th

10:35 am, Bonaventure Hilton

Session 13.62:

*Constructivist-Compatible Teacher Beliefs and Practices:
Prevalence and Differences by Instructional Setting*

Wednesday, April 21st

10:35 am, Queen Elizabeth Hotel

Session 25.58:

*School Professional Cultures and the Emergence of
Constructivist-Compatible Pedagogies*

Friday, April 23rd

2:15 pm, Marriott Chateau Champlain

Session 53.47:

*Instructional Practices and Computer Use in Schools
Participating in Major Reform Programs: Comparisons
with a National Probability Sample*

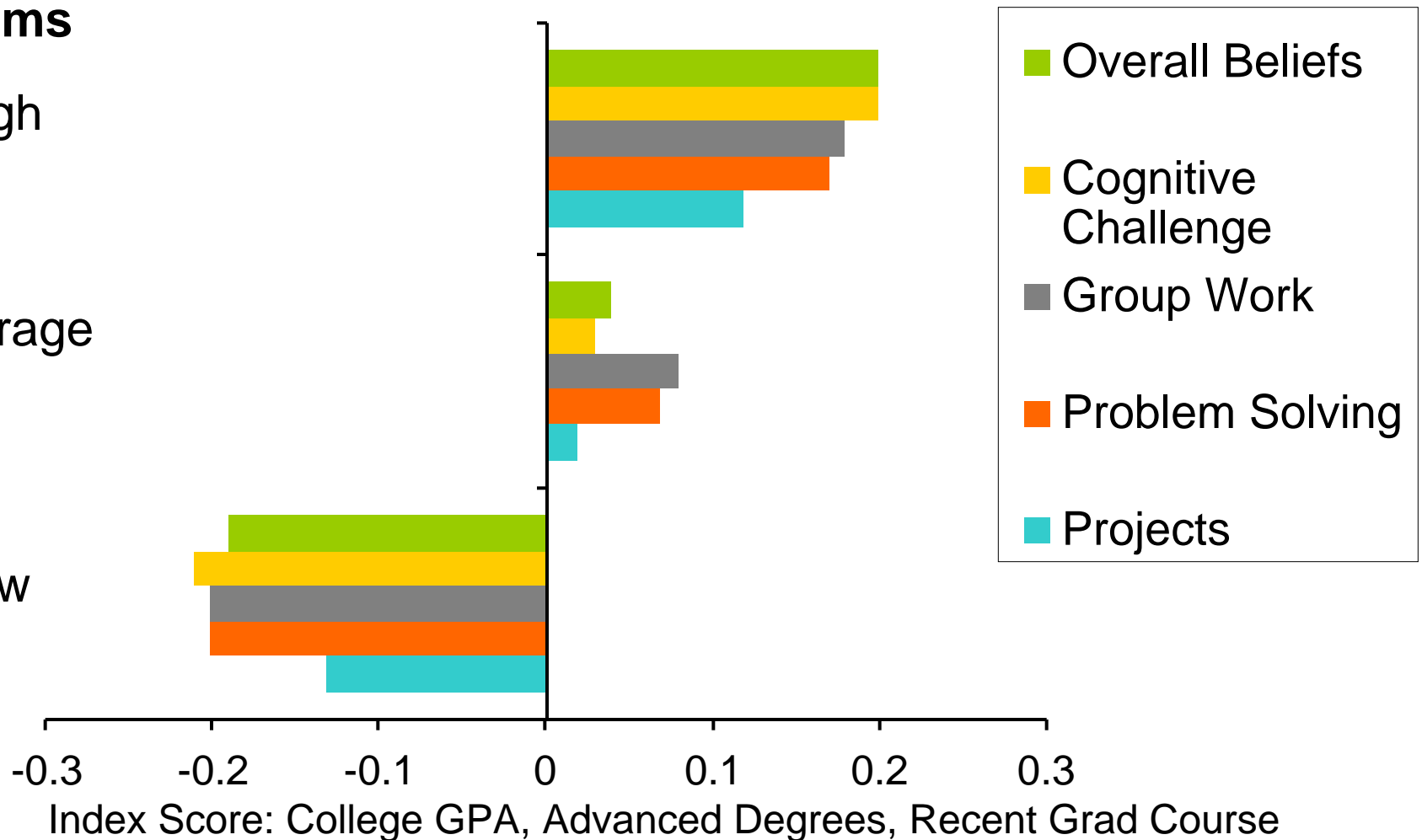
Teacher Academic Background Is Strongly Related to Constructivism

Mean on
3 items

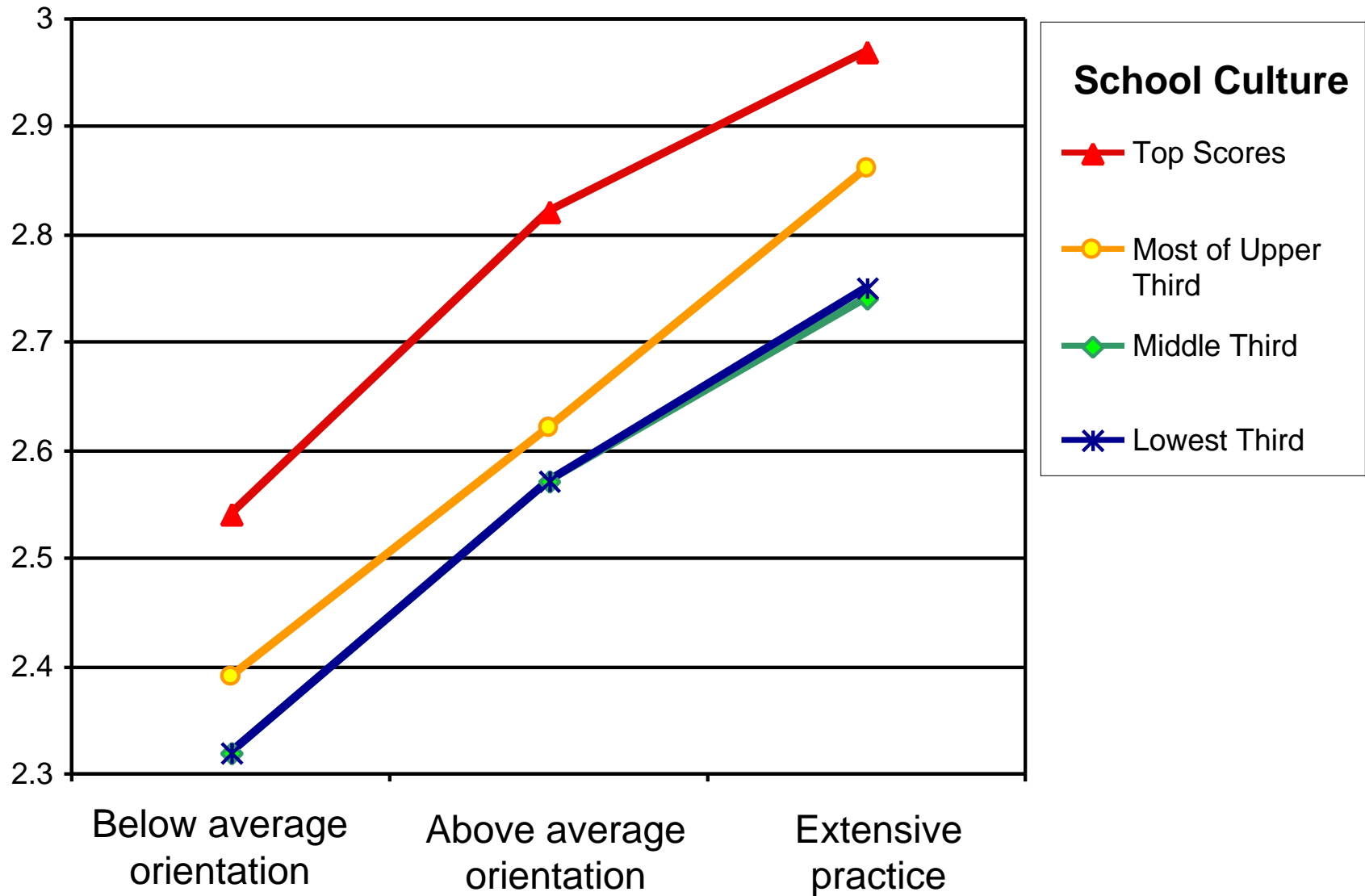
High

Average

Low



Pedagogy by School Culture by Personal Work Orientation



Constructivist Software Use by Type of School, With Controls

Technology specific schools:

Indiv. participants in tech reform activities

Schoolwide technology-infused reform

High-Tech schools
—reform involvement unknown

Other teachers in indiv.-tech
reforming schools

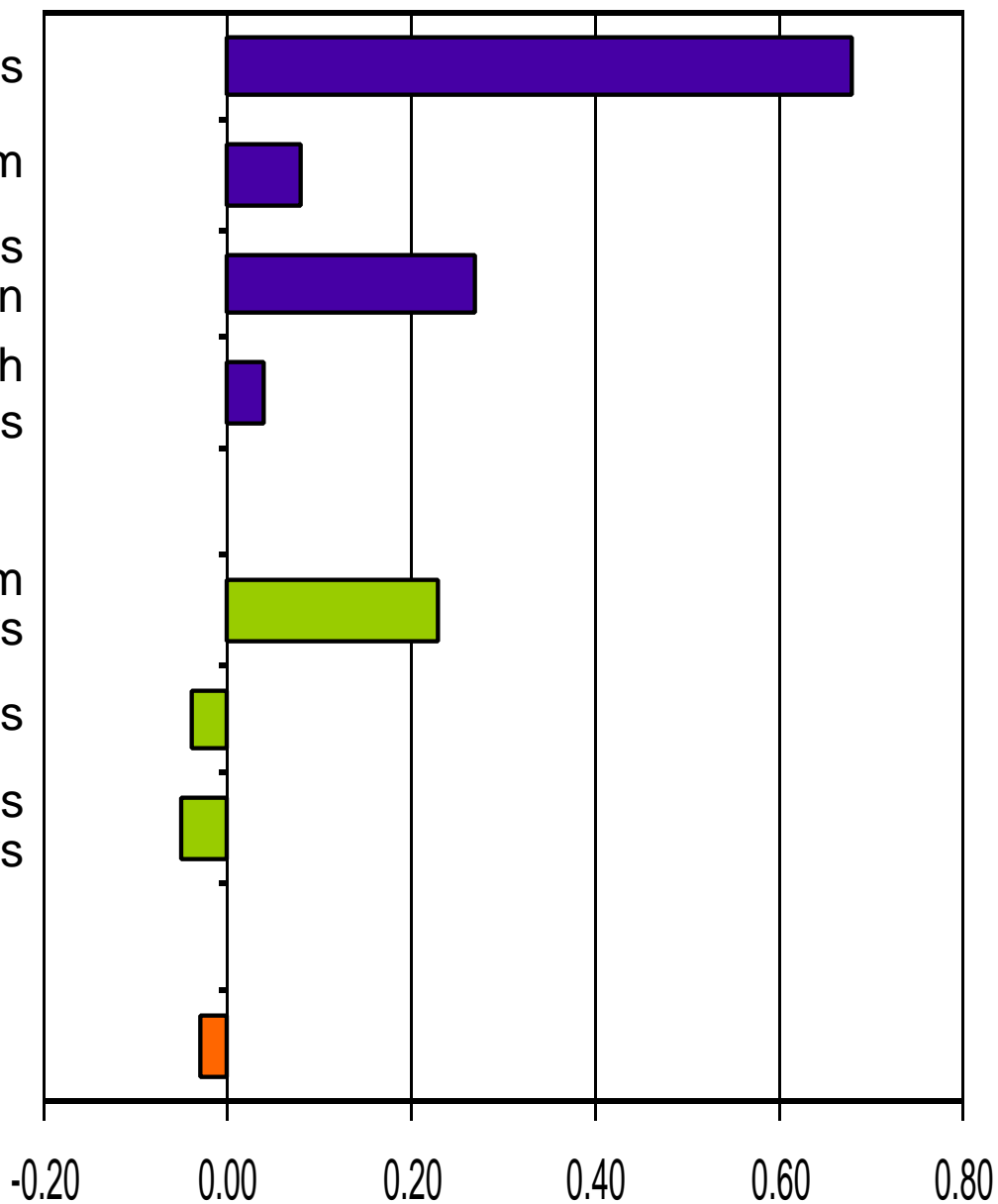
Non-technology reforming schools:

Teachers participating in reform
programs targeting individual teachers

Schoolwide reform programs

Teachers (other than participant) in schools
w/ programs involving indiv. teachers

National Probability Sample



Report Series Available on Web & Hard Copy

- *Internet Use by Teachers (available now)*
- *Computer Presence in American Schools*
- *Computer and Software Use by Teachers*
- *School Decision-Making on Technology*
- *Staff Development & School Support for Teachers' Computer Use*
- *Pedagogical Beliefs and Practices Among American Teachers*
- *School Technology Investment Alternatives*
- *Teacher Pedagogy and their Use of Computers*
- *School Context and Personal Factors in Teachers' Use of Computers*
- *Computer Use in Reform and High-End Technology Settings*
- *Dynamic Relationships Between Pedagogy and Computer Use*
- *A Summary of Teaching, Learning, & Computing-1998*

For More Information visit our Research Project Web Site:

www.crito.uci.edu/TLC

- New findings presented weekly
- Discussion group
- Reports and newsletters: view or download
- Archive of previous newsletters and findings

Teaching, Learning & Computing 1998



THE END

[Http://www.crito.uci.edu/TLC](http://www.crito.uci.edu/TLC)