Project Assessment and Evaluation

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Characteristics of PR-MSP Evaluation

- *Epistemological position:* Mixed methods based on pluralistic epistemology that supports the combination of qualitative and quantitative methods

- *Responsibility for execution:* Collaborative evaluation group comprised of faculty representing all participating institutions

- *Position of evaluators:* Insiders in consultation with outsiders (external evaluators)

- *Role of evaluator in promoting use of evaluation results:* Active role in promoting direct use for improving the project (instrumental use) and conceptual use promoted via publications and presentations.

Outcome Evaluation

Evaluation Questions Based on PRMSP Goals and Main Evaluation Strategies

I. Has PRMSP significantly enhanced the achievement levels in M&S of all K-12 students in the participating schools?

- **Standardized mathematics tests used by PRDE**
  - **Characteristics of the test**
    - Complies with the No Child Left Behind Law
    - Evaluates Adequate Yearly Progress
    - Based on Puerto Rico Standards of Excellence
    - Aligned with academic content
    - Developed by Educational Testing Services, Princeton, NJ
    - Administered to students of grades 3, 8, 11 in all Island Schools on 2003
    - Administered to students of grades 3, 4, 5, 6, 7, 8 and 11 in all Island Schools on 2004

I. Has PRMSP significantly enhanced the achievement levels in M&S of all K-12 students in the participating schools?

- **Standardized science tests used by PRSSI (Years 2 and 3)**
  - ❑ **Characteristics of the test**
    - Based on Puerto Rico Standards of Excellence
    - Developed by the College Board for PRSSI
    - Uses published items from NAEPP and TIMSS
    - Administered to students in grades 4, 8, 11 in the PRMSP Schools
- **Standardized science tests to be used by PRDE to comply with the 'No Child Left Behind' Law (Years 4 and 5)**

I. **Has PRMSP significantly enhanced the achievement levels in M&S of all K-12 students in the participating schools?**

- Student learning products obtained through alternative assessment techniques

  - Samples of student learning obtained from teachers in schools where case studies will be carried out (approximately 12)

II. Has PRMSP significantly increased and sustained the number and quality of K-12 mathematics and science teachers in participating schools?

In service	PRMSP Professional Development Workshops Evaluation Forms for getting reactions of participants and trainers
	PRMSP pre and post tests on science and math concepts to evaluate teachers' learning on PD summer workshops
In service & pre service	CETP Core Evaluation's Observation Protocol
Pre service	PRCETP Conceptual Understanding Tests
	PRCETP Portfolio of future teachers in teaching practicum: guidelines and rubric

III. Has PRMSP significantly improved the knowledge base of the education system in Puerto Rico regarding M&S teaching and learning processes?

- ❑ Collaborative groups of teachers and faculty will carry out action research to document the impact of curricular innovations using alternative learning assessment methods; results will be collected to evaluate the impact of the innovations at the Project level.

- ❑ The number of teachers, college students and professors involved in research focused on MSP innovations, as well as their publications and presentations, will be monitored using the Electronic Data Base.

- ❑ Summaries of the knowledge obtained from these research efforts and the evaluation will be developed for presentations and publications.

IV. Has PRMSP created sustainable K-20 partnerships that are actively involved in K-12 M&S education?

- Cambridge University scales on School Culture (*'The structure of schools' and 'The conditions of schools'*)

- PRCETP Policy Changes Inventory

- Dean/department heads' and professors' surveys from CETP CORE Evaluation to assess commitment to renewal and excellence.

Evaluation and Monitoring of the Project's Implementation

- Electronic Monitoring Data Base that includes:
  - Participants' (teachers, faculty, students) demographic, educational and professional data
  - Description of project activities
  - Participation of teachers, faculty, students in activities
  - Linking these data bases will enable construction of measures of 'level of exposure' to PRMSP intervention.

Process Formative Evaluation

Evaluation questions and strategies

Have the partnership leaders attained truly shared and well-defined goals and objectives, as well as strategies to attain them?

- Observations of meetings and activities

- Interviews or focus groups with members of the staff and components

Has PRMSP developed and maintained an effective, collaborative, reflective and sustainable organization?

- Document revision

- Observations of meetings and activities

- Focus groups with the PRMSP Management Team, Inter-institutional Teams and Zonal Supporting Teams

- Interviews with M&S Faculty and Administrators from the higher education Core PRMSP partners

Has PRMSP built an effective partnership that leads to the enhancement of M&S learning?

- Interviews with the universities chancellors

- Focus groups with teachers and directors (4 schools- one per zone)

- Documents revision

- Observations of meetings and activities

- Oral and written presentations

Projects' Self Assessment

- Technique: Focus groups

- Participants: Project's key personnel organized in 3 groups:
  - Project managers and administrators;
  - Staff who conceptualize and plan at the central level (PI and components' coordinators)
  - Staff who plan and guide implementation at the zonal level

- Aim: To assess implementation of the project in its first year for formative purposes

Major Accomplishments

Organization and collaboration

- Creation of Evaluation Team

- Establishment of collaborative relations with Assessment and Research Teams to form Knowledge Base Component

- Collaboration with Technical Team in the conceptualization of the Electronic Monitoring Data Base

- Coordination with PR Department of Education for the use of K-12 students' math achievement test data

- Collaboration with School Empowerment team in the development of documents to guide implementation and evaluation of the professional development program

Collection of data

- Development/adaptation and testing of data gathering instruments

- Evaluation of summer professional development workshops using various instruments (pre and post tests, reaction questionaires for trainers and participants, observation protocols)

- Collection of base-line data on school culture (about 4,800 respondents in 161 schools)

- Collection, analysis and reporting of process formative assessment data

Development of Documents

To guide evaluation, research & assessment on students' and teachers' learning and the professional development program:

- Characteristics of Learning with Understanding

- Basic Principles of the PR-MSP Professional Development Program

- Conceptual and Empirical Support for PRMSP Professional Development Program principles

Some Preliminary Evaluation Results

Trainers' Evaluation of Workshops: Science and Mathematics (N=52)
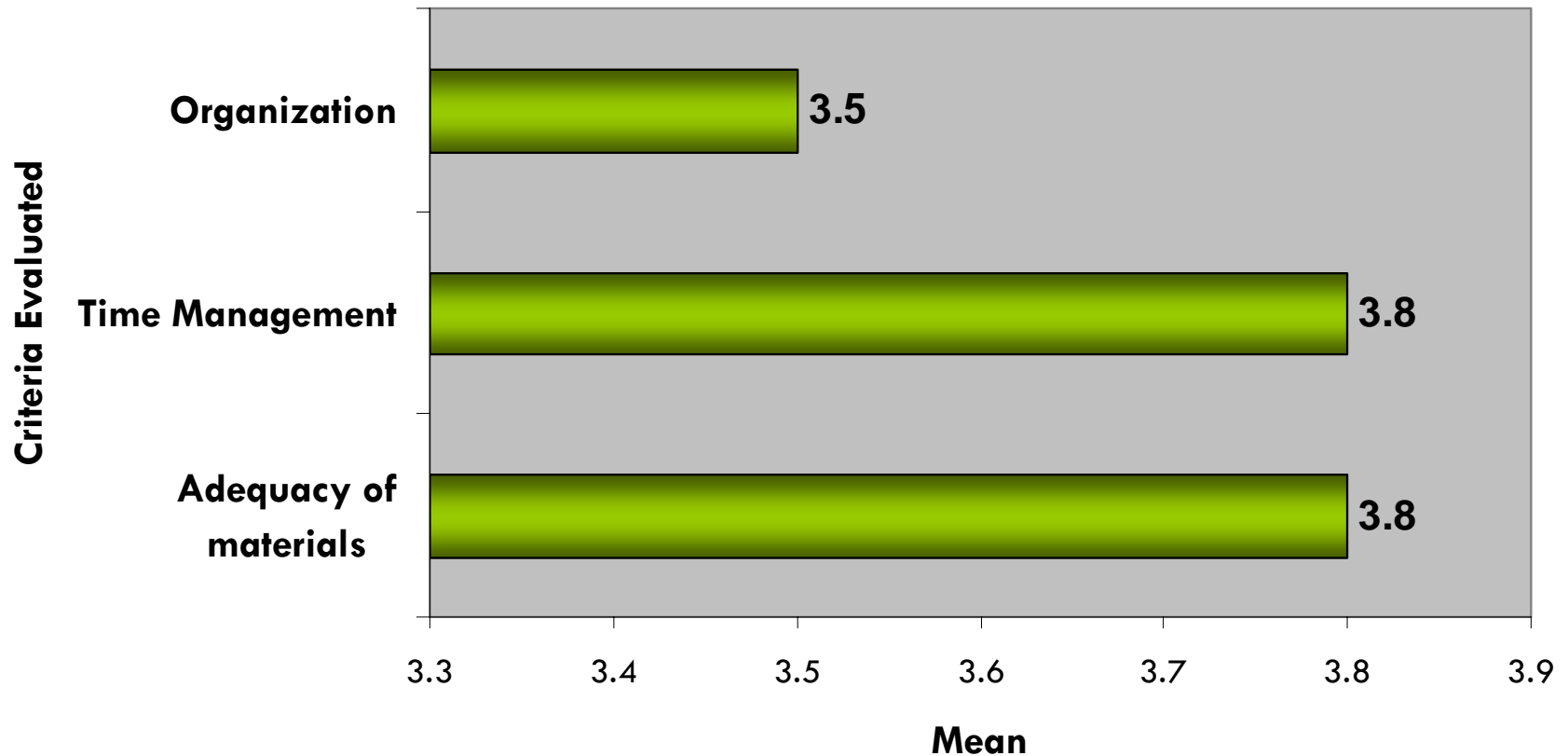
Scale: 4: Strongly agree; 3: Agree; 2: Disagree; 1: Strongly disagree

Participants' Evaluation of Workshops: K-12 (N=1,204)
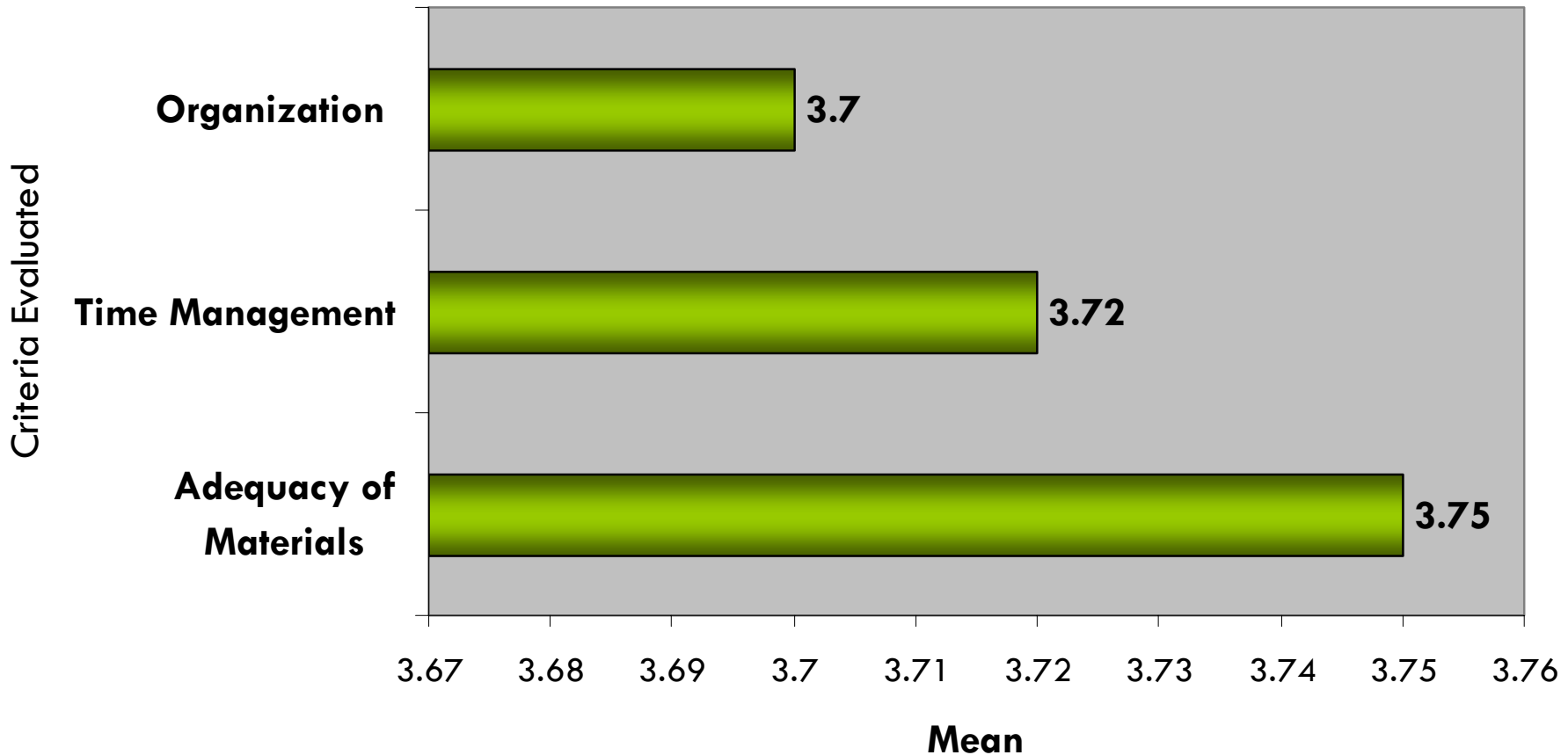
Scale: 4: Strongly agree; 3: Agree; 2: Disagree; 1: Strongly disagree

Participants' Recommendation of Trainers
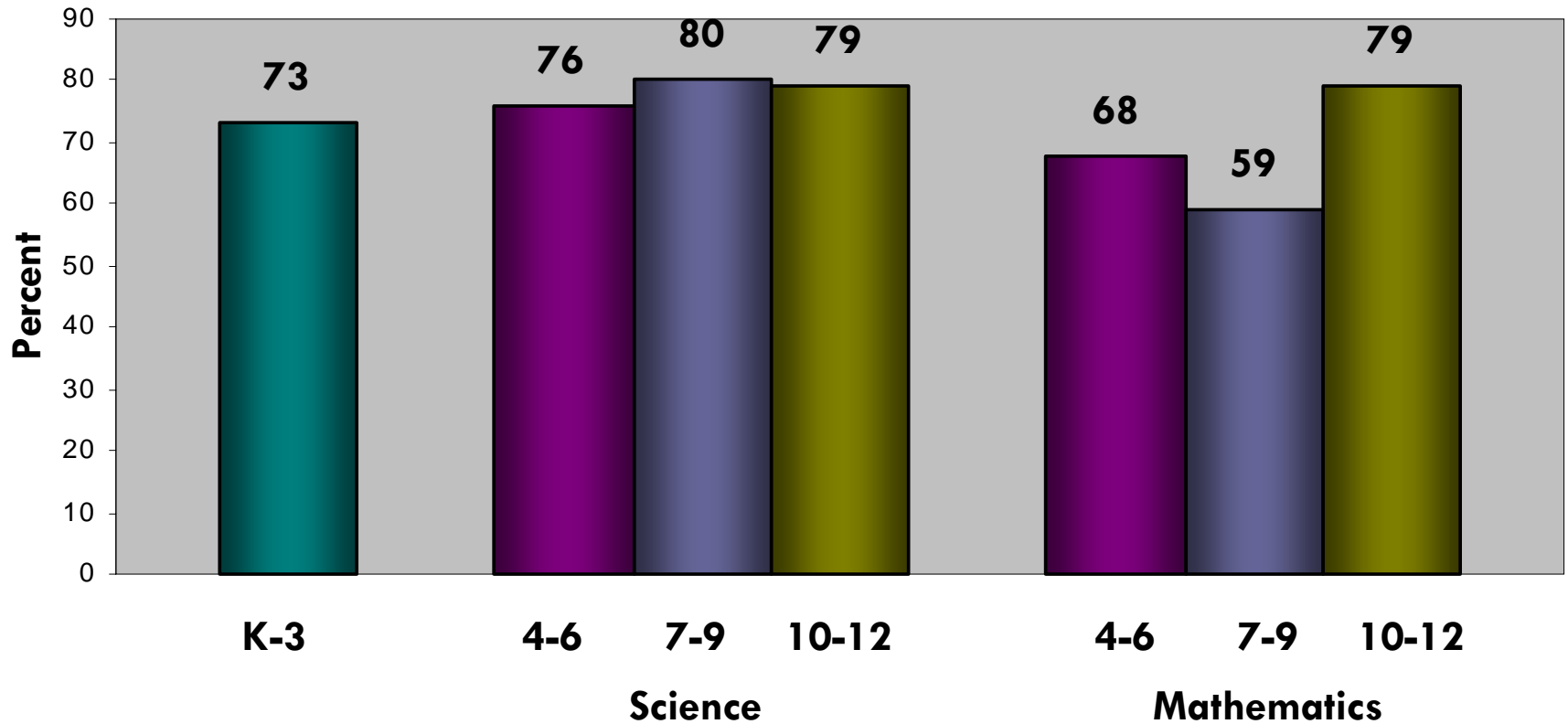
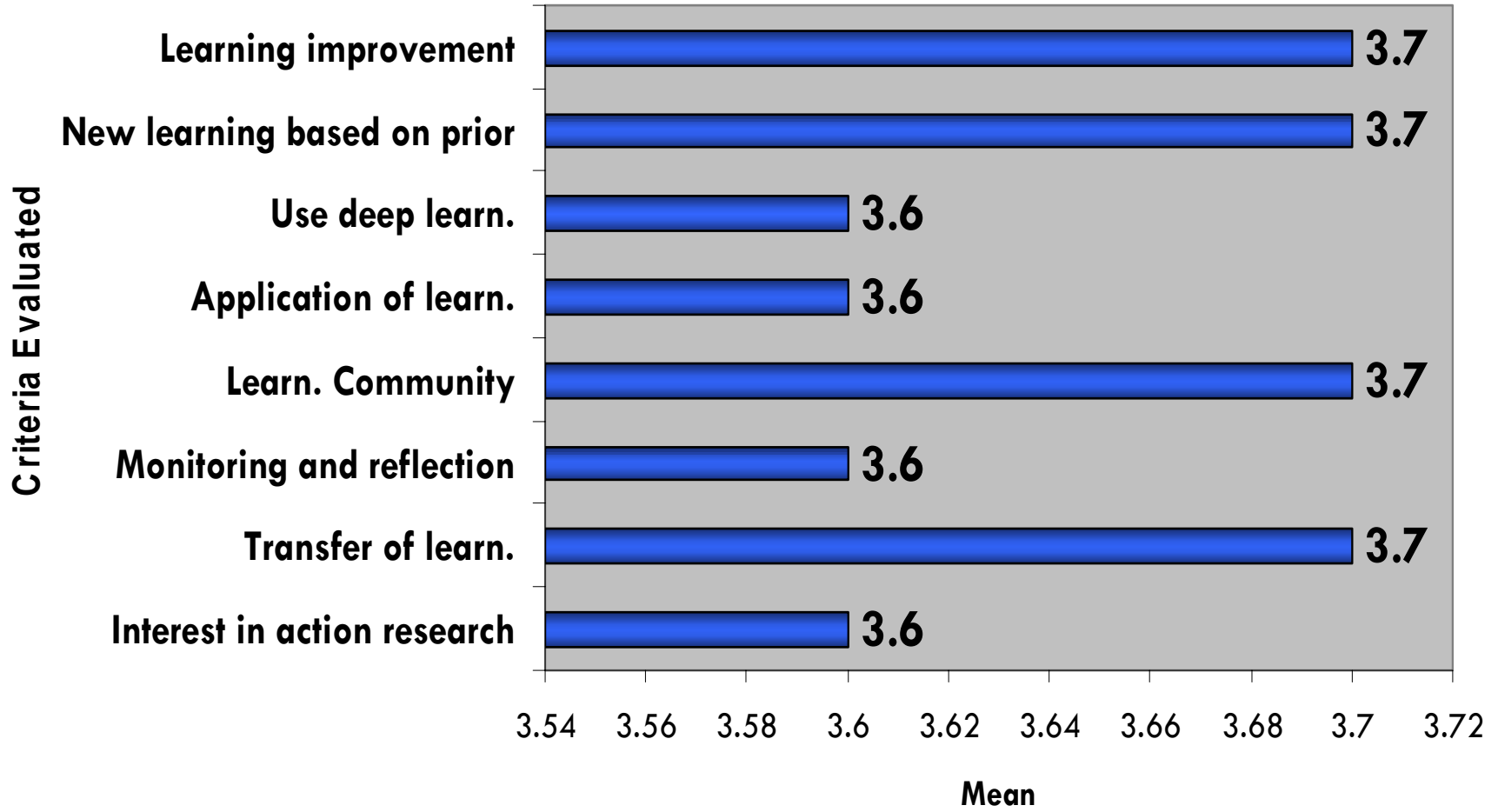# Trainers' Evaluation of Accomplishments: Science (N=25)
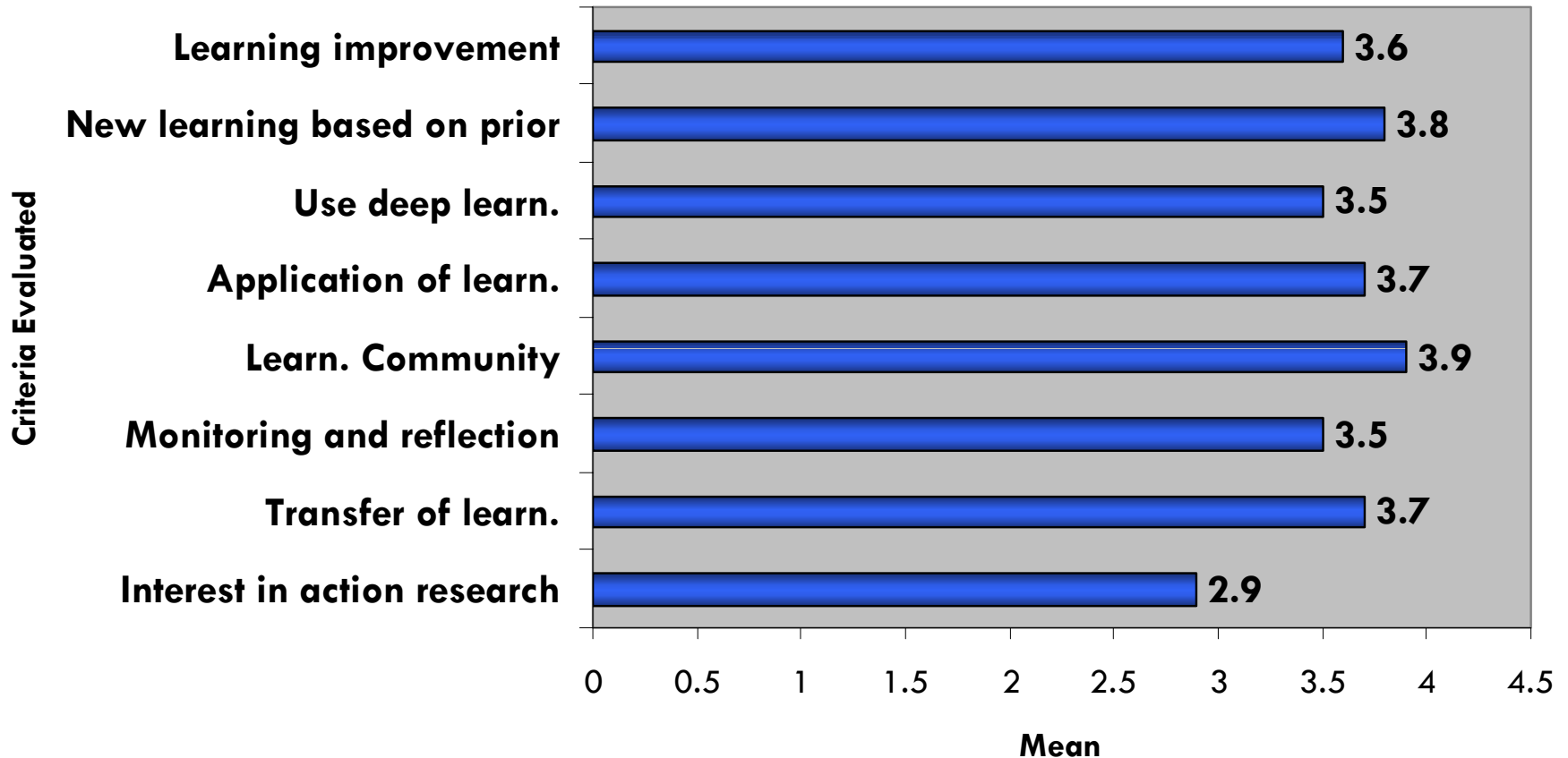
Scale: 4: Strongly agree; 3: Agree; 2: Disagree; 1: Strongly disagree

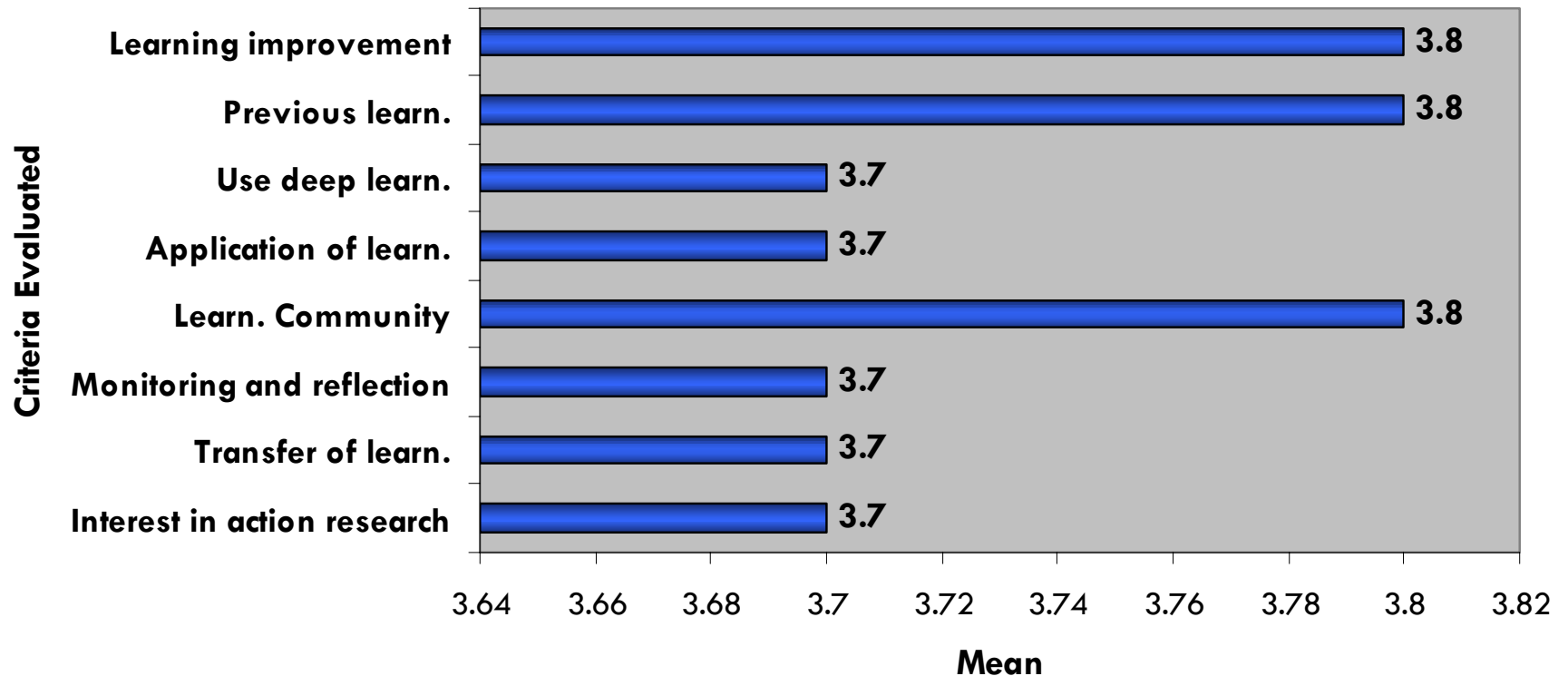# Trainers' Evaluation of Accomplishments: Mathematics (N=27)
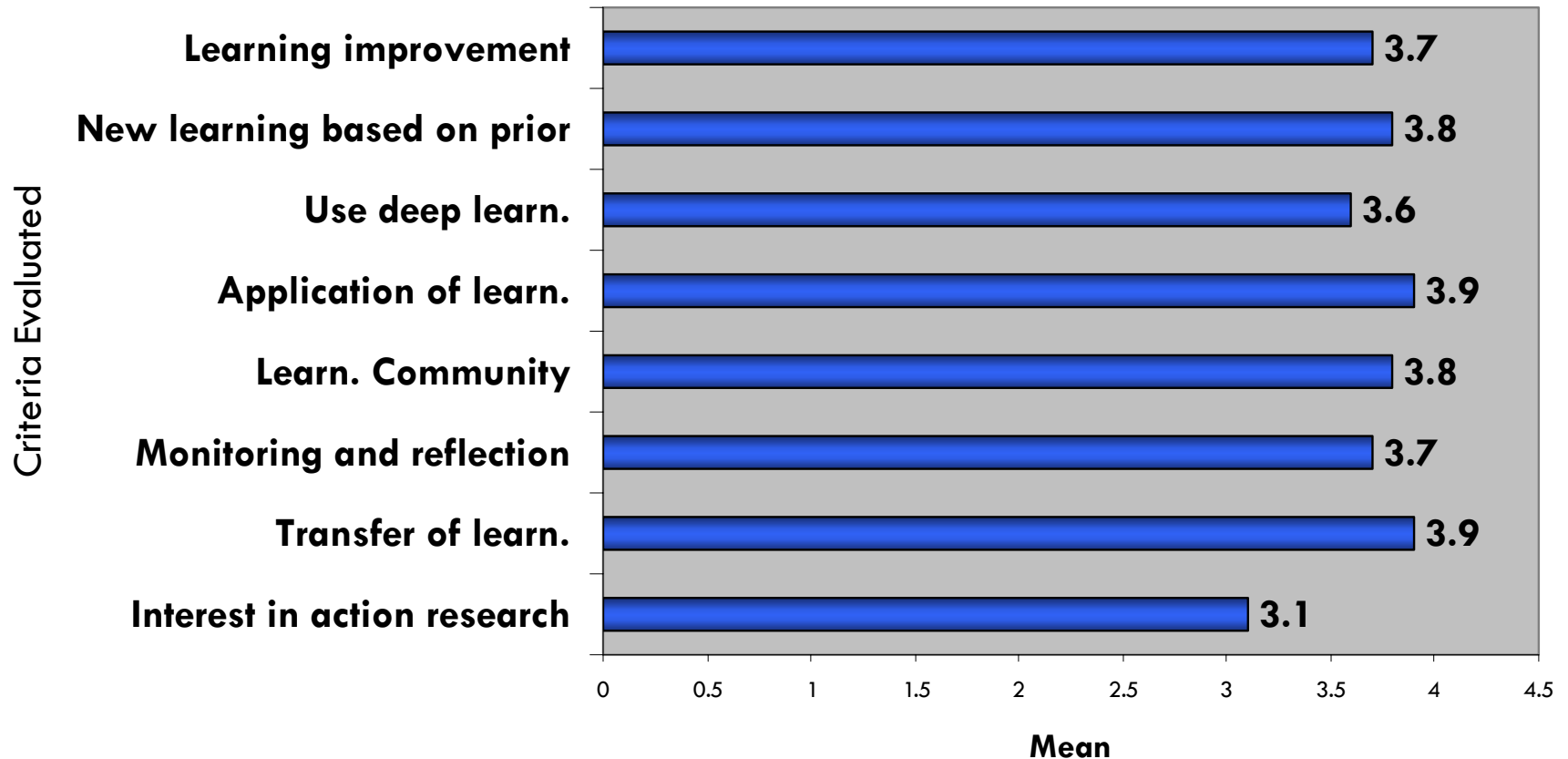
Scale: 4: Strongly agree; 3: Agree; 2: Disagree; 1: Strongly disagree

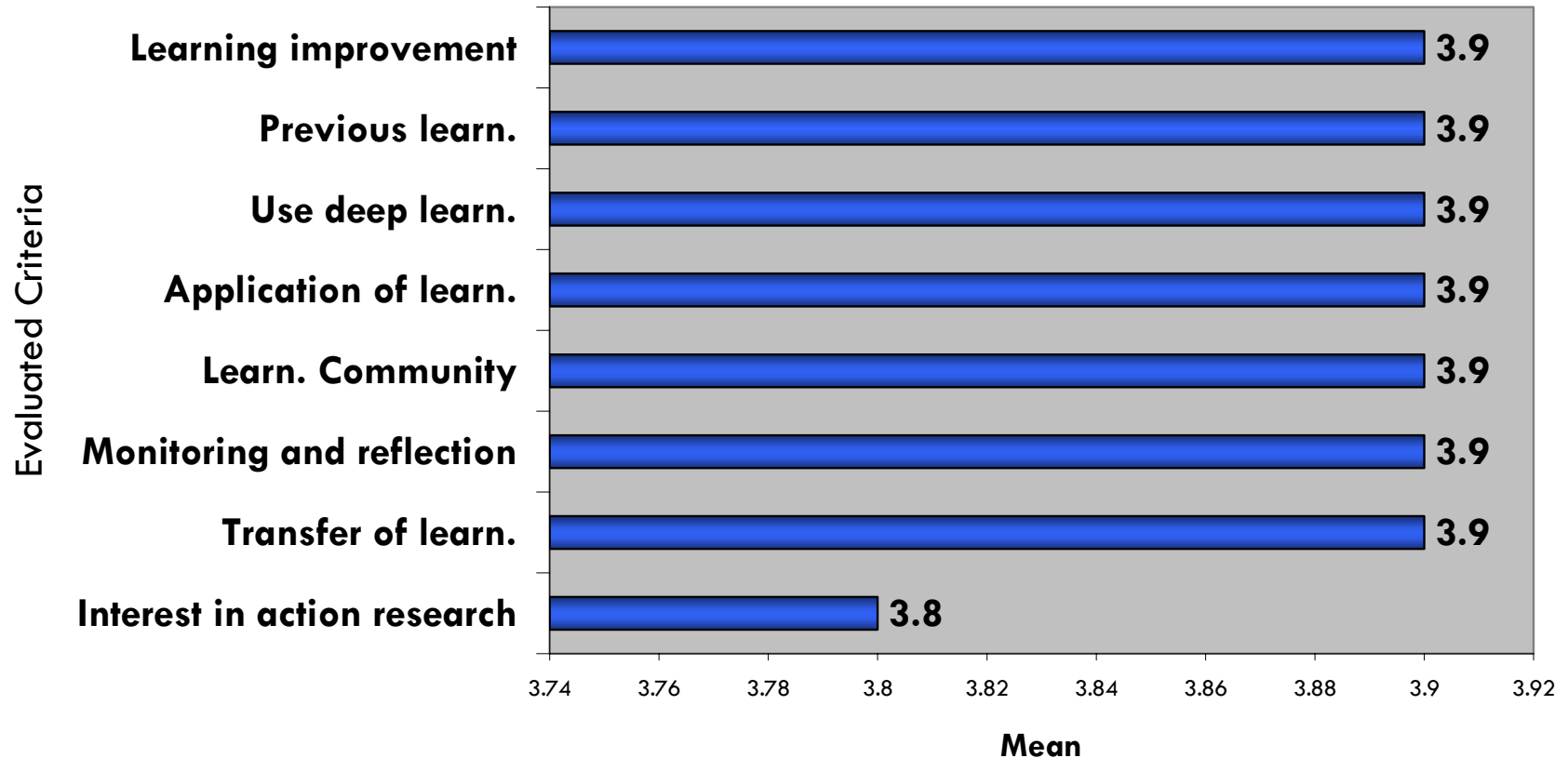# Participants' Evaluation of Accomplishments: K-3 (N=727)

Scale: 4: Strongly agree; 3: Agree; 2: Disagree; 1: Strongly disagree

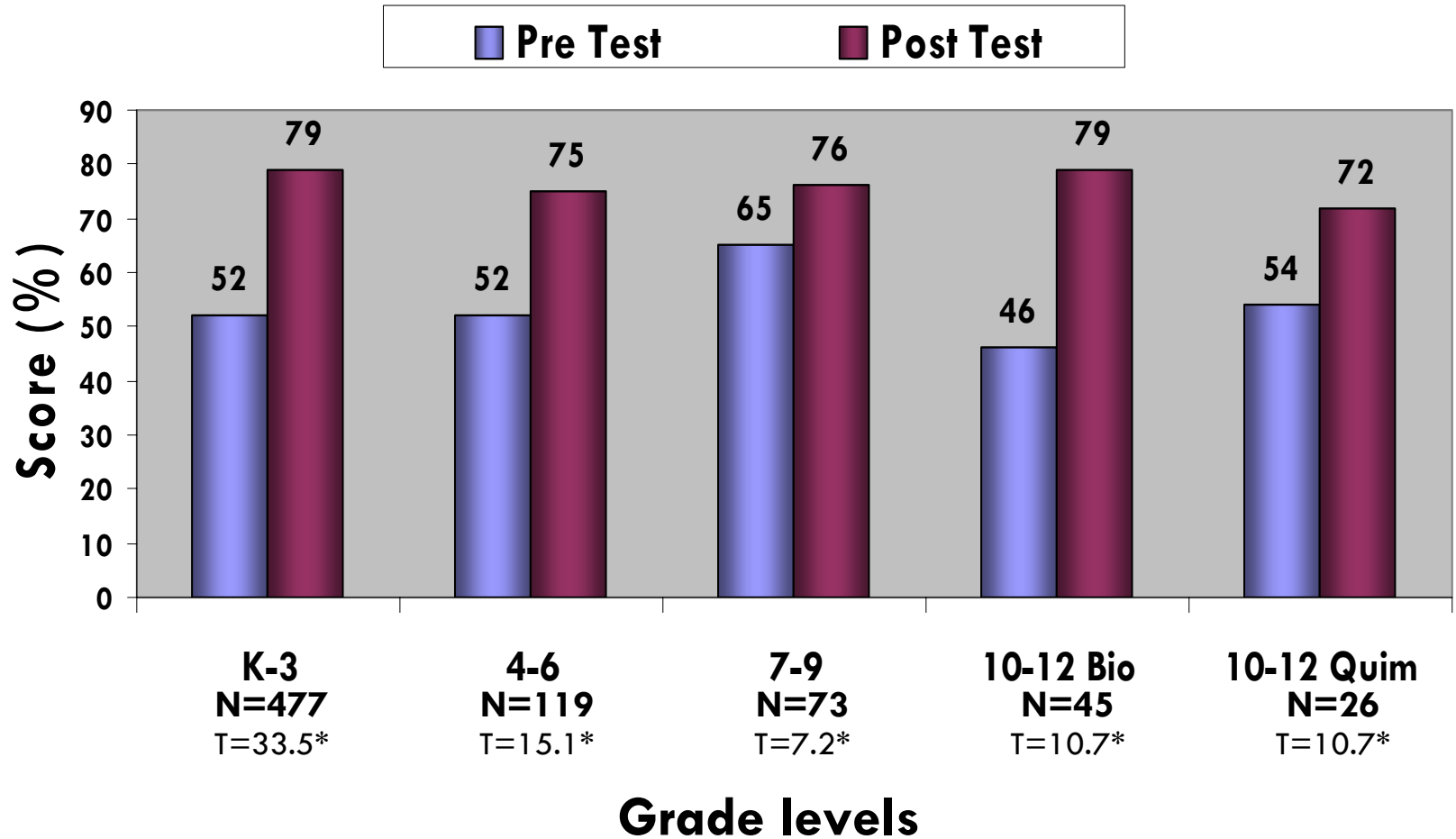# Participants' Evaluation of Accomplishments: Science 4-12 (N=236)

Scale: 4: Strongly agree; 3: Agree; 2: Disagree; 1: Strongly disagree

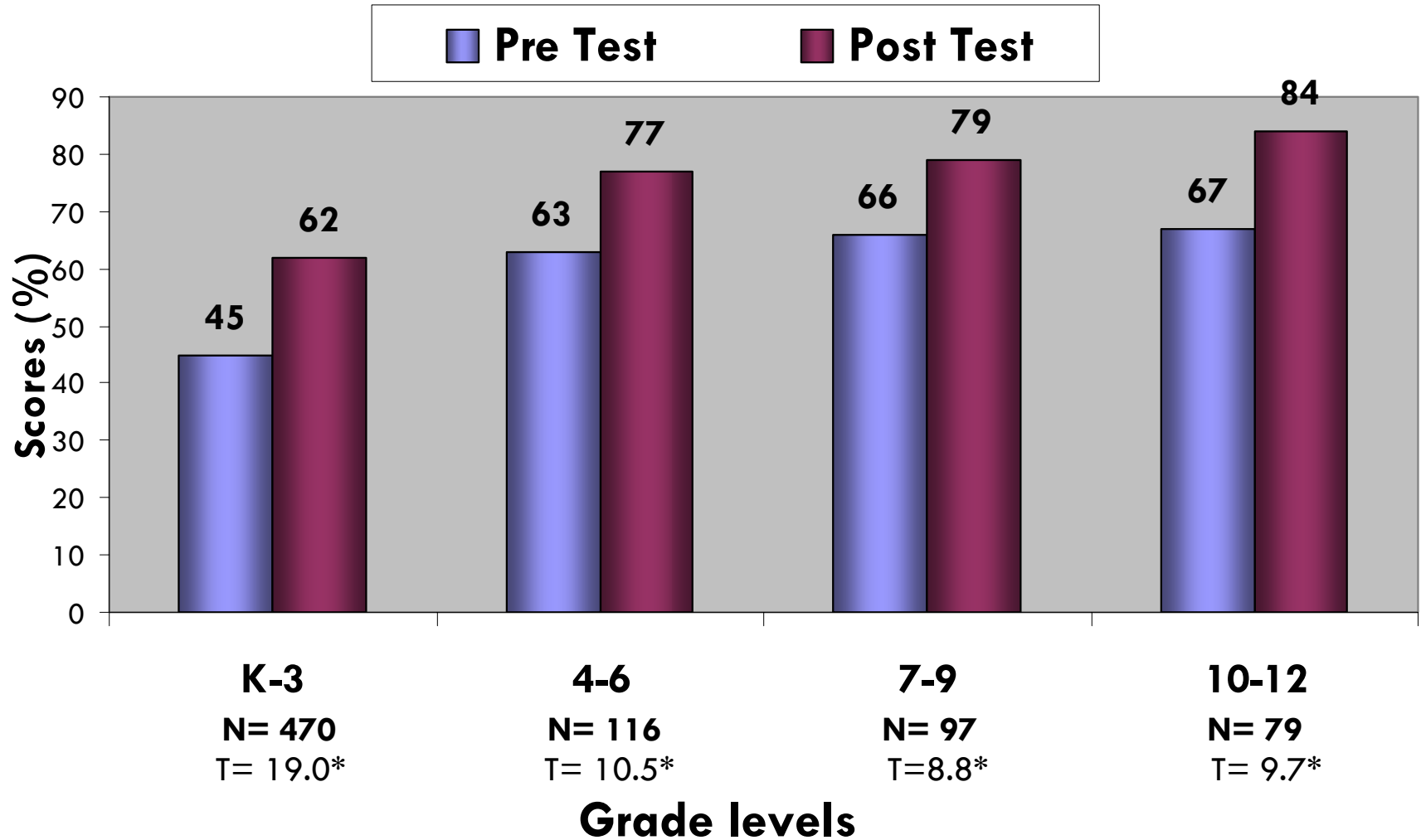# Participants' Evaluation of Accomplishments: Mathematics 4-12 (N=341)

Scale: 4: Strongly agree; 3: Agree; 2: Disagree; 1: Strongly disagree

Participants' Learning in Science: Pre/Post Tests

Participants' Learning in Math: Pre/Post Tests

* = p<.0001

Effect Size Identified by the Pre and Post Tests