

# Greater Birmingham Mathematics Partnership Phase I

## Description of Phase I

### Grassroots Origin

- The Greater Birmingham Mathematics Partnership (GBMP) began with a group of eight local teachers who had studied Piaget's theory of how children learn
- Birmingham Constructivist Teachers Network (Network) formed in 1990
- Sponsored annual conferences with nationally-known speakers drawing up to 500 teachers
- Network grew and became GBMP, made up of Birmingham-Southern College (BSC), University of Alabama at Birmingham (UAB), Mathematics Education Collaborative (MEC) and 9 diverse local school districts in Birmingham area
- GBMP applied for NSF funding and was awarded a \$9.96 million MSP grant in 2004

### Goals of GBMP

1. Increase the effectiveness of middle school mathematics teachers within GBMP school systems.
2. Increase the leadership capacity of middle school mathematics teachers within GBMP school systems.
3. Unite GBMP stakeholders in support of mathematics education programs that are high quality and effective.
4. Increase mathematics achievement of all middle school students in GBMP schools, and reduce discrepancies in disaggregated mathematics achievement data within these schools.

### Major Activities Supporting Goals

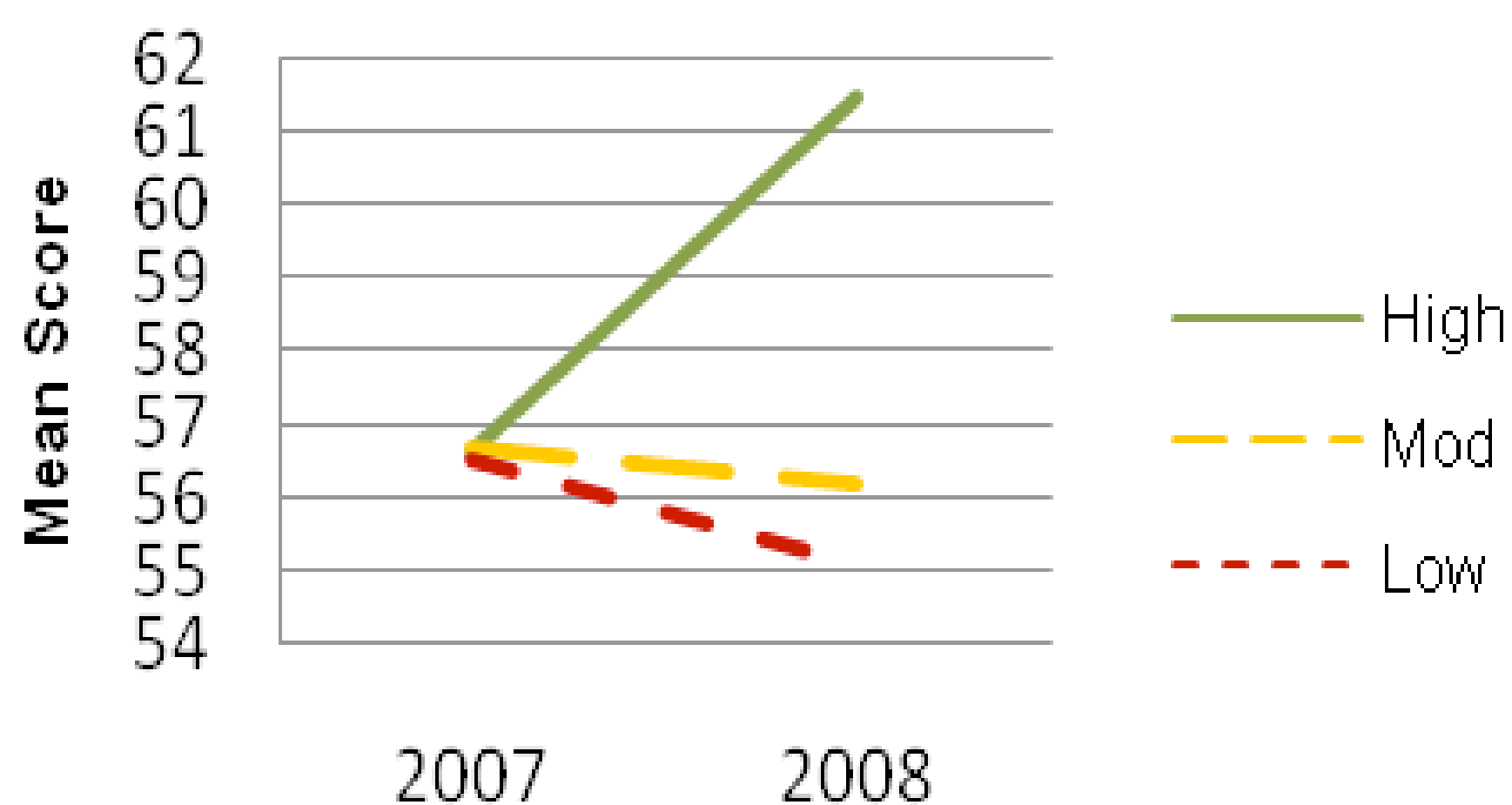
- Intensive summer mathematics content courses taught by Mathematics Education Collaborative (MEC), and academic year follow-up.
- IHE course redesign and development, new "mathematical reasoning" track in mathematics major, and new middle school mathematics certification.
- Mathematics Support Teams (MSTs) in schools.
- Sessions for administrators.
- Outreach to parents and community – Community Mathematics Nights.

## Successes of Phase I

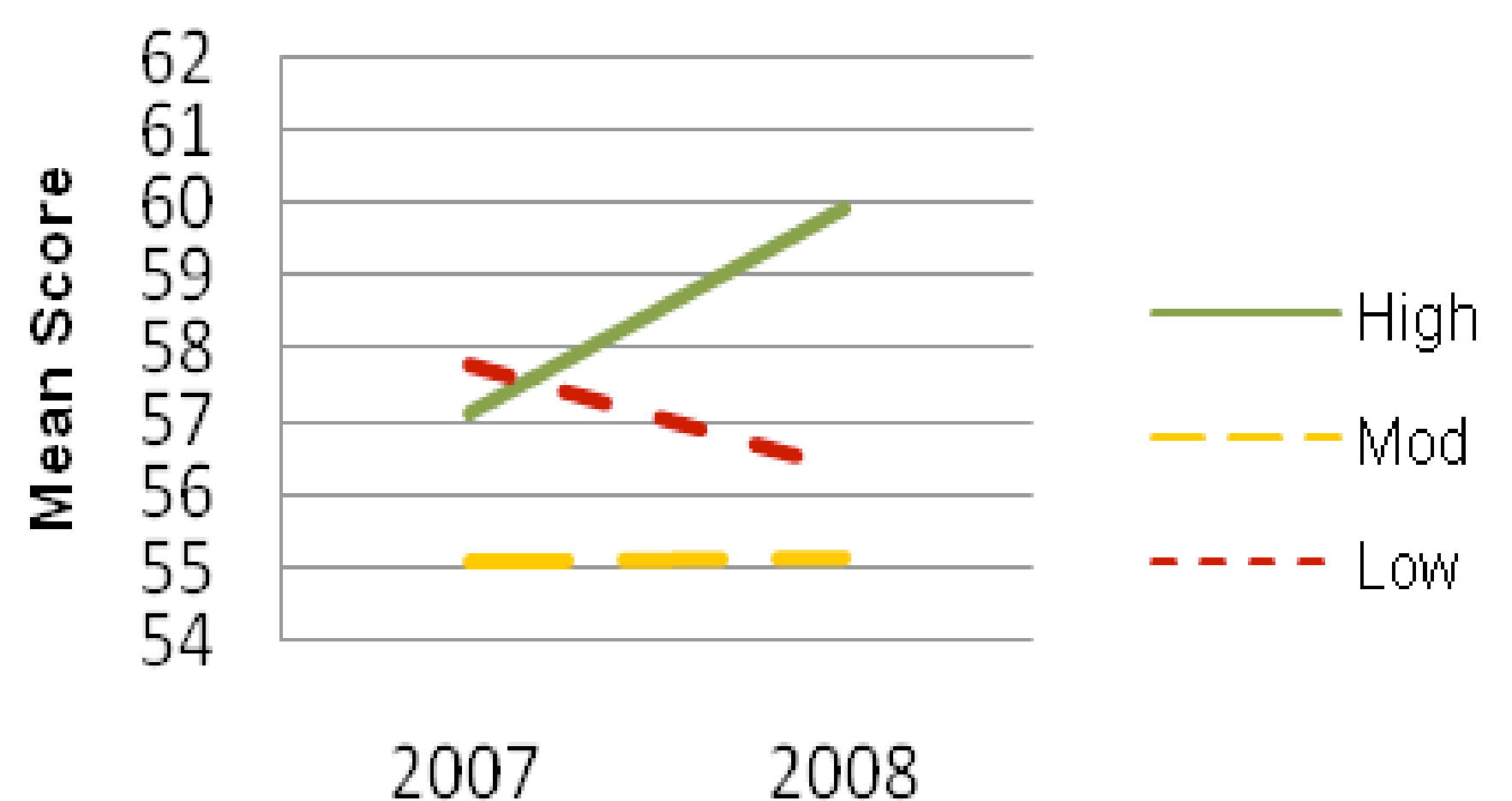
### Gains in Student Achievement

- Each grade in a school classified as High, Medium, or Low Implementing
- Normal curve equivalents on SAT-10 mathematics portion
- Data available on N=24,026 students
- Gains occurred regardless of socio-economic status

**Student Achievement by Implementation Level: Grade 5 to 6**



**Student Achievement by Implementation Level: All Grades**



- *High* implementing means 100% of teachers at that grade level took at least one GBMP summer course, and RTOP scores at that grade level were at least 12.5 out of 20 points (RTOP=Reformed Teaching Observation Protocol)

### Gains in Teacher Content Knowledge and Disposition

- *CKTM-Patterns* and *CKTM-Geometry* modifications of Learning Mathematics for Teaching Project's tests
- 3 point mean score increase pre- to post- (out of 31 items on Patterns and 23 on geometry) – medium effect size
- 5-point longitudinal mean increase! (At least one year later)
- Positive changes in teachers' beliefs about mathematics (behavioral checklist developed by UAB's Center for Educational Accountability (CEA))