Fostering Conversations about Learning in High School Math

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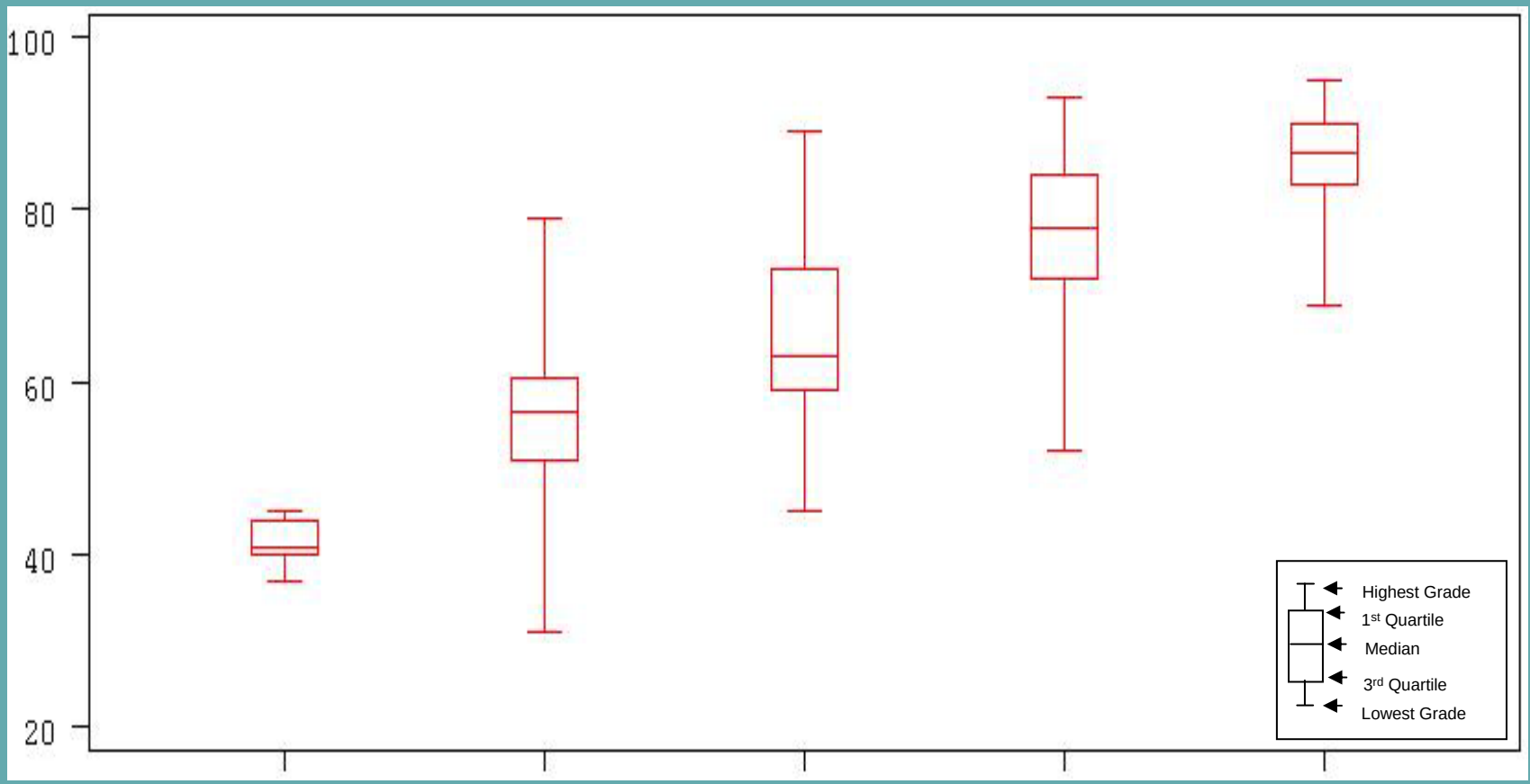
Trajectories Research Project

- Research purpose
  - To determine factors affecting choice of courses
  - To determine the effects of student choices within courses
- Research context
  - Year 1: A 1-year pilot study
  - Years 2-5: Longitudinal study 9-12

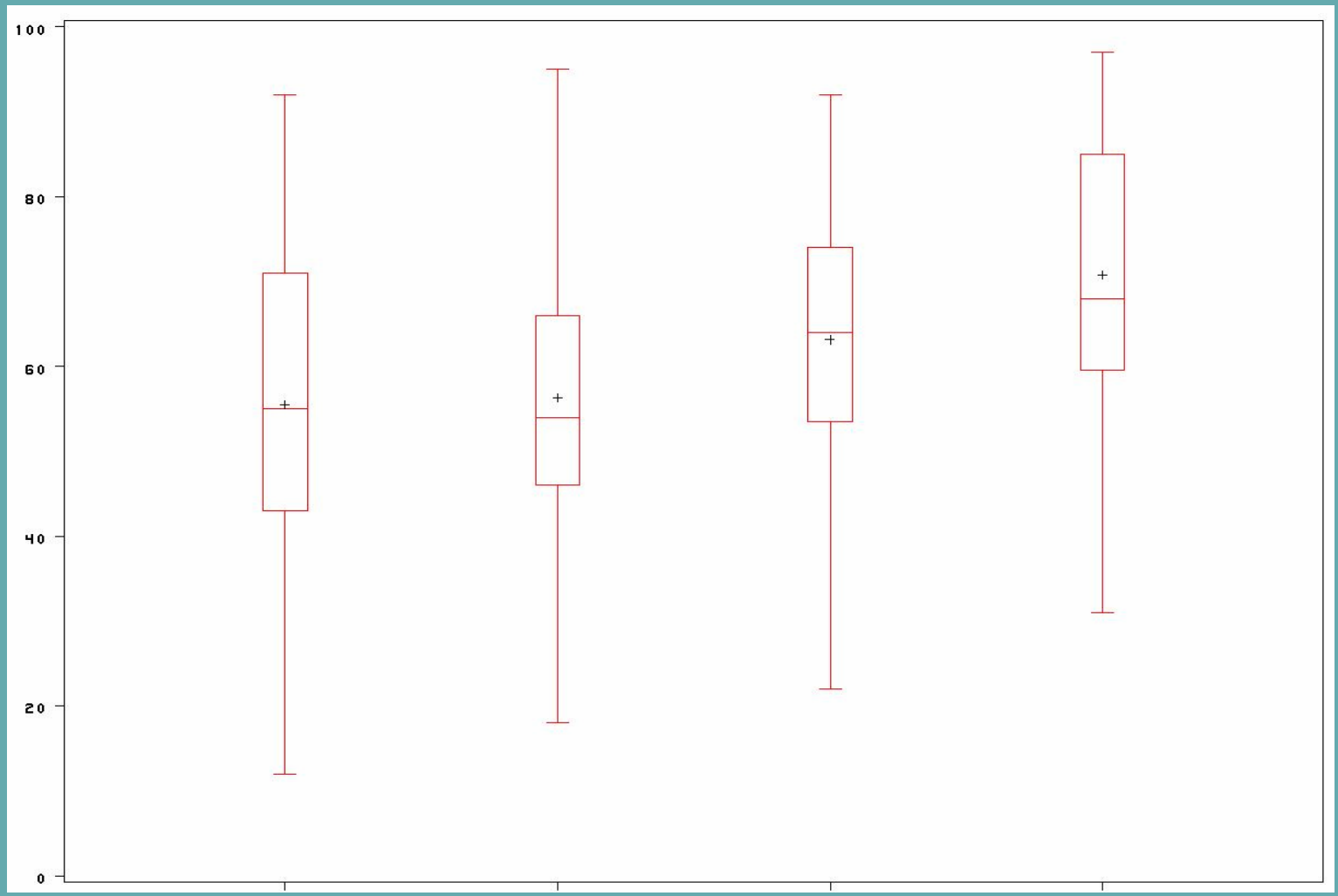
Records-based data

- Includes all grade-cohort students
- Data sets:
  - school achievement
  - school attendance
  - course registrations
  - SES (by postal code), gender
- Interpretation:
  - correlations and analyses of variance

Grade 9 Math Achievement



Grade 10 Math Achievement



Interpersonal data

- Cycles of interaction
  - An online survey
  - Customizing interview questions
  - One-on-one interview
  - Transcription, interpretation
- Longitudinal study
- Interpretation
  - Phenomenographic, narrative, thematic
  - From *description* through *explanation* to *education*

Preparing to Learn High School Math

- Different experiences in grade 9
  - Teachers making it easy or hard
  - Academic press, home support
  - Intensity in studenting behaviors
- Common experiences in grade 9
  - Teacher reliance for interest, success
  - Complacency about math's importance
  - Little complexity in learning processes

Desire – Persistence

- Students do *desire* success in math.
- Most are willing *to persist, to try harder*
  - And sometimes they win
  - And sometimes they lower expectations
  - And sometimes they don’t win
  - And sometimes they fail to persist

Desire – Persistence

- The alternative to persistence:
  - developing one's current strategies
  - developing more strategies
  - developing different goals

Students' Approaches to Succeeding in Math

- Strategic processes
  - taking notes
  - doing homework
  - reviewing
  - doing practice
  - asking for help
  - studying
- Intentions
  - credentials
  - finishing
  - understanding
  - good student/child
  - remembering
  - avoid failure
- Identity
  - sustaining
  - reconstructing

Professional Development Opportunity

- Structure
- Processes
- Intentions

Intentions for PD

- Informing
- Encouraging
- Linking

Ideals

- Success in math is crucial.
- Teachers can enable more students to succeed.
- High school students need coaching to developing learning strategies.
- High school students need support in becoming more intentional.
- Teacher and student success can evolve through interpersonal interactions.

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