Teachers’ perceptions of ability and effort & children’s self-concept of ability

Katja Natale, Phd
Mina Vida & Jacquelynne Eccles
University of Michigan
When children enter into the primary school, they typically have very high perceptions of themselves as learners

- Overly optimistic self-concept of ability

During the primary school years children’s self-concepts become more realistic and stable

- Accuracy, normative decrease
- Knowledge of own skills
- Teachers’ evaluations & feedback
  - Based on their beliefs & perceptions concerning individual children
The most common causes to which teachers typically attribute children’s academic success (math, reading) are:

- **Ability**
  - Innate aptitude / talent
  - Internal, uncontrollable, stable

- **Effort**
  - Hard work, trying
  - Internal, controllable, unstable
Research questions

- How teachers’ perceptions of children’s ability & effort (in success) predict children’s self-concept of ability in math and reading?
  - During the primary school years
  - Controlling for academic achievement (math, reading)

- How children’s general intelligence, gender and cohort status contribute to the level and changes in their self-concept of ability?
The primary interest of the CAB study has been to follow the development and socialization of children's self-perceptions, task values, and activity choices.

- Started in 1986
- Children have been followed from kindergarten until 2 years after high school
  - 3 cohorts (N~250-300)
- Teachers were followed up during the first 4 waves of the study (K – 6th Grade)
Children’s measures

- Children’s self-concept in math & reading
  - Measured once a year each spring (W2 - W4)
  - Separately for math & reading
  - 5 questions (1-7 Likert scale)
    - How good at math are you?
    - Compared to your other subjects how good are you in math?
    - How well do you expect to do in math next year?
    - If you were to list all the students from best to worst in math, where are you?
    - How good would you be at learning something new in math?
Teachers’ measures

Teachers’ perceptions
- Teachers filled in a questionnaire once a year each spring (W1 - W4)

Ability & effort of the target child
- All children at the class
- Math, reading, etc.
- 1-7 Likert scale
  - Compared to other children, how much innate ability or talent this child have in each of the following?
  - Compared to other children, how hard does this child try in each activity area listed below?
Results

1. LGM & self-concept in math / reading

2. Teachers’ Ability / effort Perceptions & Math / reading performance

3. Other antecedents

4. multigroup: gender & cohort

All estimated paths

- self-concept of ability 2
- self-concept of ability 3
- self-concept of ability 4

Teachers’ perceptions 1

Teachers’ perceptions 2

Teachers’ perceptions 3

Teachers’ perceptions 4

performance 2

performance 3

performance 4

gender

cohort

iq
Results

- Children’s self-concept of ability in math and reading stabilized during the primary school years
  - Slight decrease in math & reading ability self-concepts
  - Boys had higher self-concept in math than girls
    - Girls’ self-concept of ability decreased more in math
    - Boys’ self-concept of ability decreased more in reading
      - How teachers’ perceptions predict the development of children’s self-concept of ability?
      - Would teachers’ ability and effort perceptions buffer against the normative decrease in children’s self-concepts?
      - How other antecedents, such as gender, cohort status, iq & teachers’ perceptions (W1) predict the level & changes in children’s self-concepts?
Results & discussion

- Especially teachers’ ability beliefs buffered against the normative decrease in children’s self-concept of ability in math and reading.

- Teachers’ effort beliefs predicted the initial level of children’s self-concept of ability in math and reading:
  - No predictions during each school year
  - Positive but fewer associations than with ability perceptions

- Children often perceive ability & effort as compensatory causes:
  - High effort & low ability, credit for success for the child but no confidence in skills

- Many problems at school related to learning to read which requires high effort:
  - Domain-specific differences?
    - In math, both ability (aptitude) & effort (hard work) are important
    - In reading, especially effort is important
    - Teachers’ emphasis on effort may reduce motivation?
Results & discussion

- Younger children had higher self-concept of ability than older children (cohort differences)

- Children with high general intelligence had higher self-concept of reading ability
  - Similarity of tasks (vocabulary, comprehension)?

- No gender differences in associations between teachers’ beliefs & children’s self-concept
  - Girls and boys equally sensitive to teachers’ feedback?

- Even teachers changed every year, they had very similar beliefs concerning individual children
  - Accuracy?
Limitations

- Accuracy of teachers’ perceptions may explain partly the results
- No control over teachers’ influence
  - Teachers changed every year, not possible to build multilevel models
Thank you!

kmarian@umich.edu
Teachers’ ability beliefs & children’s self-concept of math ability

(χ² (19, N = 1174) = 22.04, p = .28, CFI = 1.00, TLI = .99, RMSEA = .01, SRMR = .02)
Teachers’ effort beliefs & children’s self-concept of math ability

(χ² (14, N = 1174) = 20.03, p = .13, CFI = .99, TLI = .98, RMSEA = .02, SRMR = .02)
Teachers’ ability beliefs & children’s self-concept of reading ability

(χ² (22, N = 1174) = 37.15, p = .02, CFI = .97, TLI = .96, RMSEA = .02, SRMR = .02)
Teachers’ effort beliefs & children’s self-concept of reading ability

(χ² (22, N = 1174) = 24.34, p = 0.33, CFI = 1.00, TLI = .99, RMSEA = .01, SRMR = .02)