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Standards, inequality, and ability grouping

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Will high standards for student achievement solve problems of unequal learning?

- Only if “high standards” are applied to learning opportunities as well as to examination performance.

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Dilemmas of high-stakes testing

- Low-level tests
 - High pass rates, but little incentive for effort
- High-level tests
 - Strong incentive, but inequality is salient
 - Politically difficult
 - Morally problematic

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Unequal Learning Opportunities

- Among Schools
- Within Schools
 - Tracking / Ability Grouping (U.S.)
 - Streaming / Setting (Scotland)

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Efforts to Improve Learning Opportunities

- | | |
|---|--------------------------------------|
| ■ United States | ■ Scotland |
| – Moving away from tracking towards “de-tracking” | – Moving towards setting / streaming |
| – Especially in middle school | – Especially in S1/S2 |



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Why are the U.S. and Scotland moving in opposite directions on middle school tracking (setting in S1/S2)?

- Because there is no single best system
- Both approaches have drawbacks
- Most important points:
 - Effective implementation
 - Best approach may depend on context

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Goals of this presentation:

1. Expose problems of unequal learning opportunities
 - Primary versus secondary schools
 - Among and within schools
2. Consider the strengths and weaknesses of de-tracking (mixed ability grouping) as a solution

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Unequal Opportunities in Primary Schools

- Nature of instruction:
 - Worksheets, teacher explanation, recitation
- Students who listen but do not understand hear the same explanation again and again
- Students who do not listen get little attention from the teacher
 - Vicious cycle of low expectations
- Most of the inequality is *within* the classroom

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Problems of ability grouping in primary schools

- Segregation of students on non-academic criteria
- Unequal achievement
 - The gap increases over time

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Ability grouping in primary schools

- Best (least harmful) uses of ability grouping in primary schools
 - Subject specific
 - Assignment based on relevant criteria
 - Instructional content tailored to students' needs
- But many schools use broader, more rigid forms of grouping (streaming)

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Unequal opportunities among secondary schools

- Academic credits
- Mathematics and science programs
- Algebra in 8th grade (S2)
- Calculus available
- Teacher qualifications

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Consequences of tracking in secondary schools

- No effect on achievement **productivity**
- Increase in achievement **inequality**



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Tracking and inequality within secondary schools

- Course work
- Course sequences
- Complexity of curriculum
- Student responses to instruction
- Teacher qualifications (urban schools only)

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Relatively successful low-ability classes

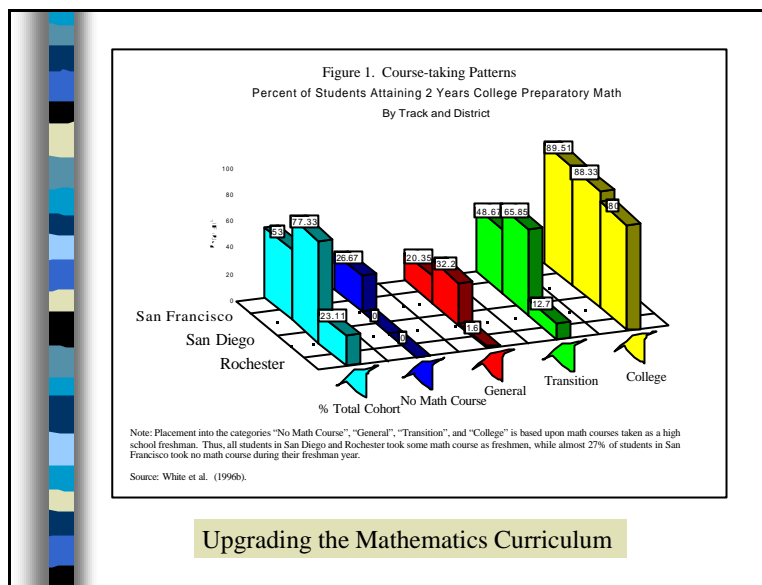
- No “teacher tracking”
- High expectations
 - Refusal to give up on the academic curriculum
- Extra effort to foster oral discourse

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Mathematics Upgrading Project

- New “transition” classes replaced “general math”
- Transition classes were more successful than “general math”
- But students are best off going directly into college-preparatory mathematics

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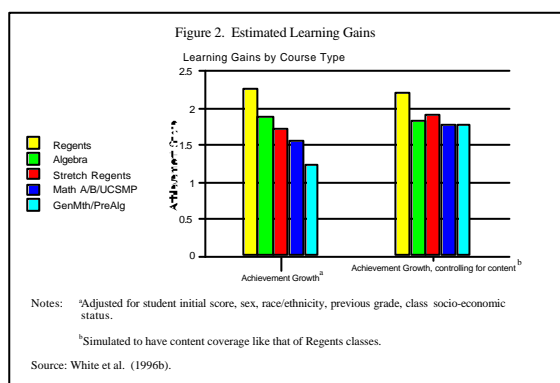


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Mathematics Upgrading Project

- Achievement in transition courses was higher than in general math, but lower than in college-preparatory courses
- More rigorous curricular content accounted for the advantages of college-preparatory and transition courses

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Israel versus the U.S.: Setting in the context of national examinations

■ U.S.

- The more tracking, the more inequality
- Low-level classes characterized by:
 - Diluted curriculum
 - Low expectations
 - Minimal effort

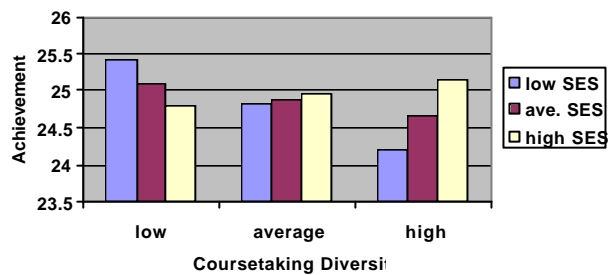
■ Israel

- More differentiation, *less* inequality
 - Meaningful incentives are found at all levels



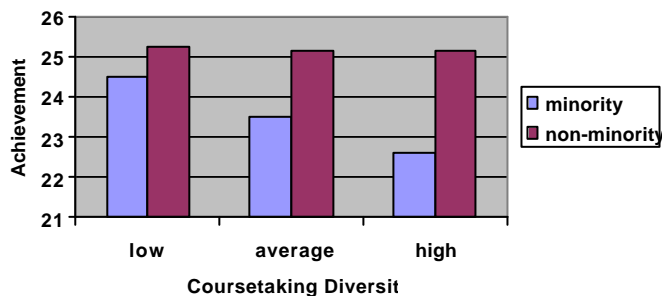
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Course taking diversity in mathematics, United States.

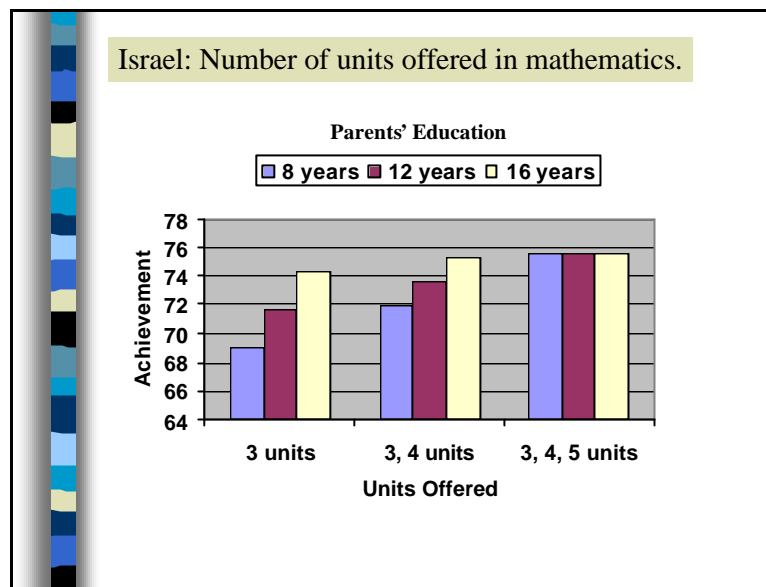


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Course taking diversity in mathematics, United States.



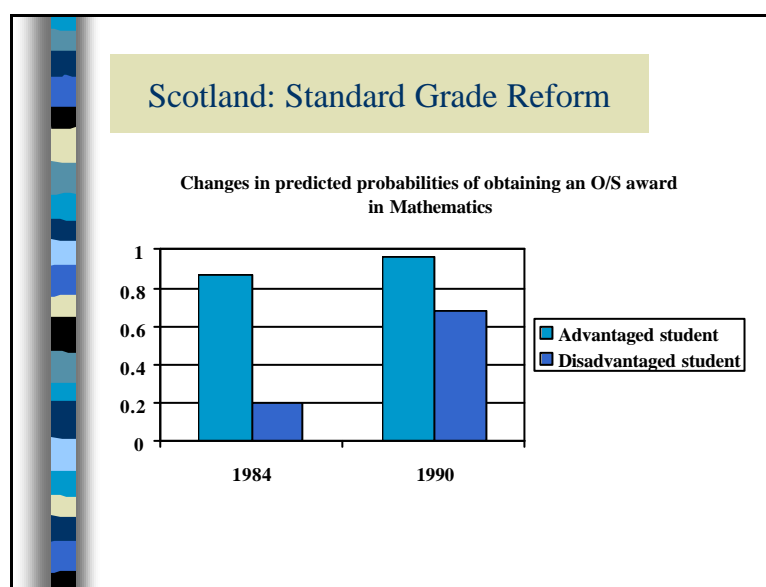
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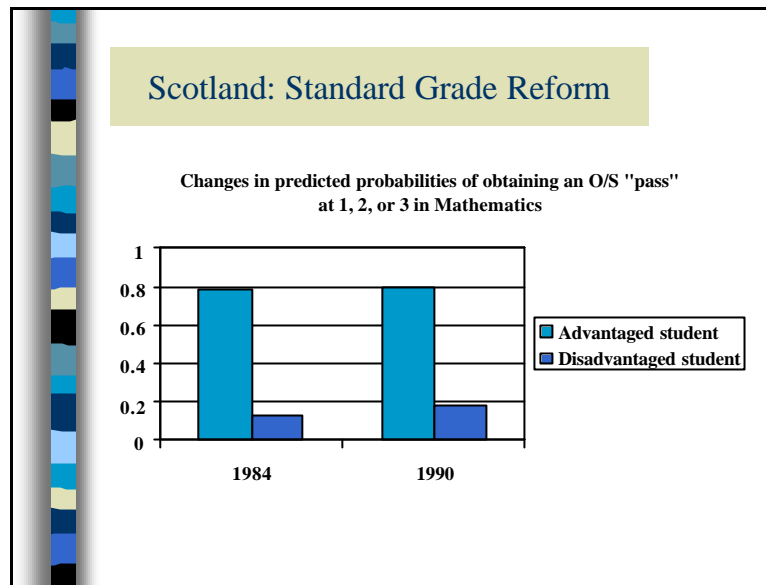
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- Scotland: Standard Grade Reform
- The Standard grade reform expanded access to the academic curriculum
 - Students from disadvantaged backgrounds had much better chances for awards
 - Chances of obtaining high marks did not increase much – no closing of the gap

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Conclusions about Tracking

- Successful use of tracking, though apparently not impossible, is very rare
- The most rigid forms of tracking should be eliminated
 - Tracking into separate classes for the entire school day in primary school
 - Tracking into fixed programs that determine all courses in secondary school

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Conclusions about Tracking

- Dead-end courses such as General Math should be eliminated
- If low-level courses are maintained, they must be offered in the context of high expectations for progress

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Will De-Tracking Solve the Problems of Unequal Opportunities?

- If curriculum inequality *magnifies* achievement inequality, can we *reduce* inequality by promoting the same high standards for all students?
- Promising in principle, but difficult to implement effectively

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Mixed Evidence about De-Tracking

1. Normative, political, and technical challenges
2. Differentiation and opportunity in restructured schools


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Successful mixed-ability grouping in high school mathematics

(this is a description of one case, not a recipe!)

- Complex academic projects
- Varied expectations for different students
- Curriculum not bound by a rigid sequence
- Supporting conditions:
 - Small classes
 - Extra tutoring on Saturdays
 - Selection of staff and students


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Mixed Evidence about De-Tracking

1. Normative, political, and technical challenges
2. Differentiation and opportunity in restructured schools
3. Interactive Mathematics Program (IMP)


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Mixed Evidence about De-Tracking

1. Normative, political, and technical challenges
2. Differentiation and opportunity in restructured schools
3. Interactive Mathematics Program (IMP)
4. Equity 2000

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Mixed Evidence about De-Tracking

1. Normative, political, and technical challenges
2. Differentiation and opportunity in restructured schools
3. Interactive Mathematics Program (IMP)
4. Equity 2000
5. Algebra for Everyone

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Recommendations

1. Extreme forms of tracking (streaming) should be eliminated
2. In a context of high standards, some forms of differentiation (that is, divisions among students) can help reduce achievement inequality.

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Recommendations

3. Where tracking is completely eliminated, see that standards for high-achieving students are not lowered.
4. Where some degree of tracking is maintained, it is essential to implement high standards for low-achieving students.