



# Technical Issues Underlying Dropout and Completion Indicators

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THE CONSORTIUM ON CHICAGO SCHOOL RESEARCH  
AT THE UNIVERSITY OF CHICAGO / URBAN EDUCATION INSTITUTE

# Technical Issues

- Who is a completer? Who is a dropout?
- Who should be included in the base group?
- Data and record keeping issues

# There is no one best method

Technical decisions depend on the purpose of the indicator

## Indicators should be ...

- **Accurate**... to show the state of education
  - **Fair**... for judging schools and accountability sanctions
  - **Inclusive**... to provide incentives for good practice
  - **Sensitive, Stable**... to evaluate programs and policies
- ... but there are generally trade-offs among criteria

### Other considerations

- Data availability
- Usefulness (timeliness, simplicity)
- Political issues (school reactions, public perceptions)
- Aggregation issues

# Who is a completer?

- Which outcomes should count as “completing”?  
*Graduates, GEDs, alternative diplomas*
  - Indicators may not be equivalent across units
  - Different definitions affect school incentives
- How long should students have to complete?
  - More time provides more accuracy, incentives for recovery, broader inclusion
  - Indicator timeliness is very important
  - Time limits bring questions about how to count students still enrolled, decisions affect accuracy and sensitivity

# Who is a dropout?

- Outcomes may be unknown
  - Verifying outcomes requires resources
    - Under accountability, not validating may encourage false reporting (introduce inaccuracy, bias)
    - Requiring validation will inflate dropout rates, especially for schools with high mobility or first generation immigrant students (introduce inaccuracy, bias)
- There is debate about which outcomes to count
  - Students in GED/alternative programs
  - Institutionalized students
- Students may re-enroll and drop out repeatedly
  - Students may be double-counted (affects accuracy)

# Who should be counted in the group being measured?

## **Problems with defining cohorts/groups by grade**

- Grade repetition in high school
  - Introduces bias, exaggerates differences between schools
- Grade repetition prior to high school
  - Makes indicators unstable, inaccurate
    - Students enter at older ages
    - Weak students may be pushed to different cohorts
    - Some students never enter the base grade
- Schools with less-common grade configurations may not be included

## **Age-based definitions are more stable, sensitive, accurate and unbiased**

- Difficult to apply to schools, better for states/districts

# Who should be counted in the group being measured?

## Issues with the time element in the definition

- Snapshot definition
  - Misses students not enrolled on snapshot date
  - Indicator numerator may not be subset of denominator
    - Adjustments require many assumptions
- Year-long definition (four-year long definition)
  - Higher data requirements
  - More inclusive, but introduces possibility of double-counting students
  - Requires decisions about students enrolled for partial periods
    - These decisions will systematically raise or lower the indicator

# Who should be counted in the group being measured?

## **Which school should transfer students be counted in?**

- Both schools
- Neither school
- The receiving school
- The sending school

*In practice, most rates mix attribution for different kinds of students*

# Who should be counted in the group being measured?

## Which school should transfer students be counted in?

- Both schools
  - Most inclusive
    - If rates are aggregated, mobile students are double counted
  - Requires schools to share information
    - Or indicators calculated by higher unit with full information
  - Weighting credit by time in the school not practical
    - Requires data sharing and strict guidelines for defining dropout date
- Neither school
- The receiving school
- The sending school

# Who should be counted in the group being measured?

## **Which school should transfer students be counted in?**

- Both schools
- Neither school
  - Excludes all mobile students (inaccurate)
  - Few data requirements, political advantages
  - In practice, only non-graduate transfers sometimes excluded from indicators
    - Introduces more inaccuracies than excluding all transfers
- The receiving school
- The sending school

# Who should be counted in the group being measured?

## Which school should transfer students be counted in?

Both schools

- Neither school
- The receiving school
  - Few data constraints, political advantages
  - Makes little conceptual sense, given strong relationship between 9<sup>th</sup> grade failure and eventual dropout
  - Biased in favor of schools with enrollment control
  - Can encourage push-out to lower-quality schools
- The sending school

# Who should be counted in the group being measured?

## **Which school should transfer students be counted in?**

- Both schools
- Neither school
- The receiving school
- The sending school
  - Attribution makes conceptual sense
  - Requires data sharing across units or student-level data at a higher unit (district/state)
  - Politically difficult

# Who should be counted in the group being measured?

## Subgroup definitions

- Limited English Proficiency (LEP)
  - Inconsistent definitions of English proficiency across districts and states
  - LEP status changes over time
    - English acquisition correlated with academic achievement, economic status, mobility and age at entry to US
    - Students still defined as LEP in high school are a select group
  - Best to classify students primary grades
    - Records need to accompany students

# Who should be counted in the group being measured?

## **Subgroup definitions**

- Students receiving special education services
  - Inconsistent definitions of disabilities across schools, districts
  - Status sometimes derived from achievement (select sub-group)
  - Time element problematic for ungraded students, or IEPs with additional years in school

# Data and record-keeping issues

- The more that data systems have detailed, linked, longitudinal student-level information...
  - The more options for indicator development
    - Can develop better indicators
  - Alternative methods can be tested
    - Biases/inaccuracies can be made explicit
- Good indicators depend on maintaining accurate, updated, consistent records
  - Demands on staff can be high, errors are common
    - Training is important, especially at new schools and with new staff
  - As systems change, data may not be comparable
  - Regular audits could identify degree of error and weaknesses in the system

# Concluding Remarks

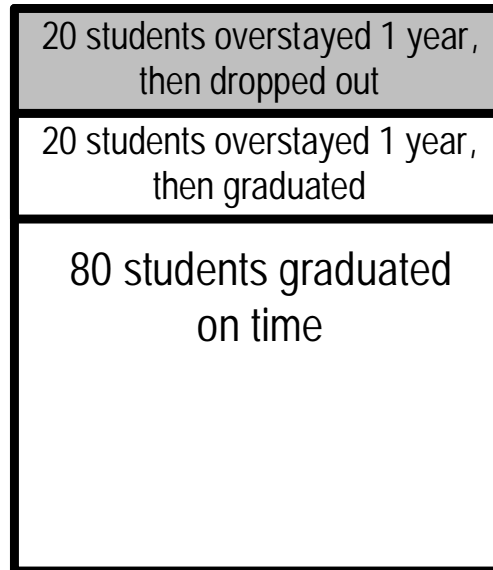
- **No one method is best**
  - Some methods are more problematic than others
  - Consistency is crucial
    - We can be explicit about indicator weaknesses if using a common indicator
    - We can gauge how different indicators would affect estimates of rates and comparisons among units
    - Uncertainty leads to reluctance to use the indicators
- **Even if viewed as unbiased, indicators will be viewed as unfair for schools serving different populations**
  - Unadjusted rates will not spur action by schools, and lead to misperceptions in judging schools
  - Can accompany indicators with adjusted statistics
- **Better data systems at the state level will ease some technical issues**
  - Increasing innovation will exacerbate issues
  - As we adjust methods, consistent records will allow comparison of old to new methods

For more information please visit [ccsr.uchicago.edu](https://ccsr.uchicago.edu)



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# An illustration of the effects of counting students from prior cohorts



Current cohort  
120 students

## 4-Year Graduation rate

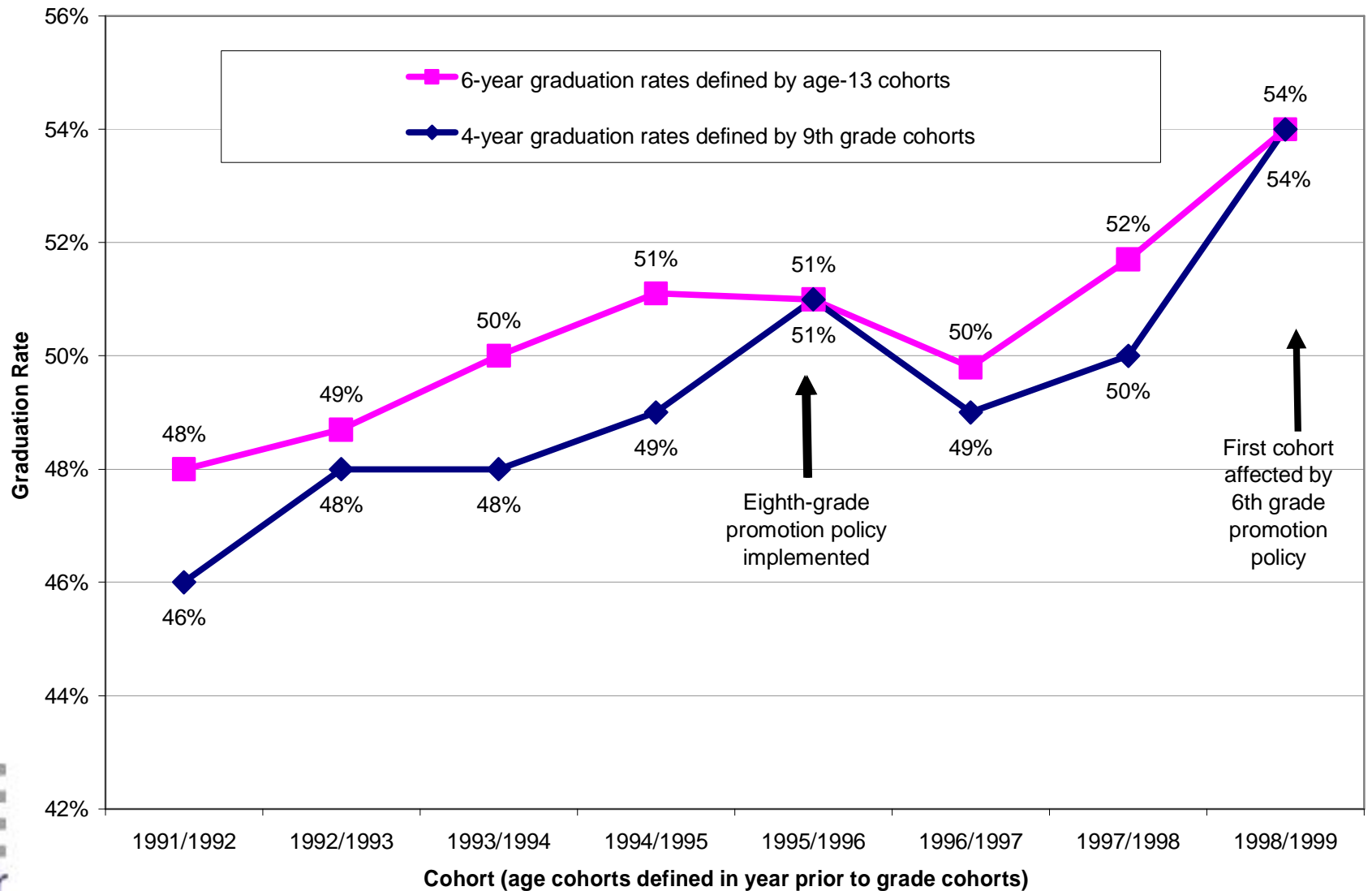
Current cohort:  
 $80/120 = 67\%$

Including graduates from  
prior cohort:  
 $100/120 = 83\%$

Adjusting the denominator:  
 $100/140 = 71\%$

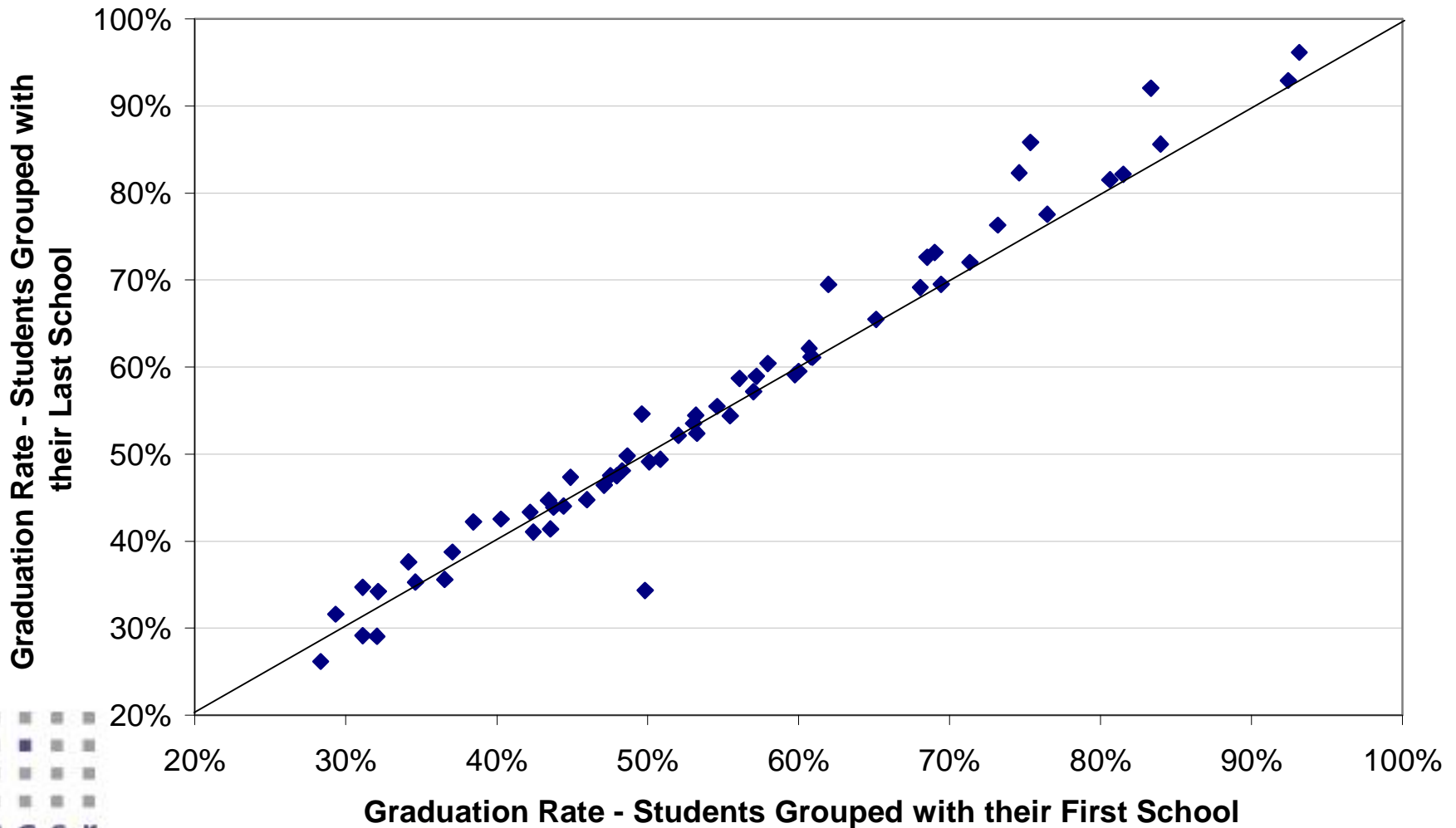
Including all over-stayers  
from prior cohort:  
 $100/160 = 63\%$

# Cohorts defined by grade produce unstable estimates due to early-grade retention



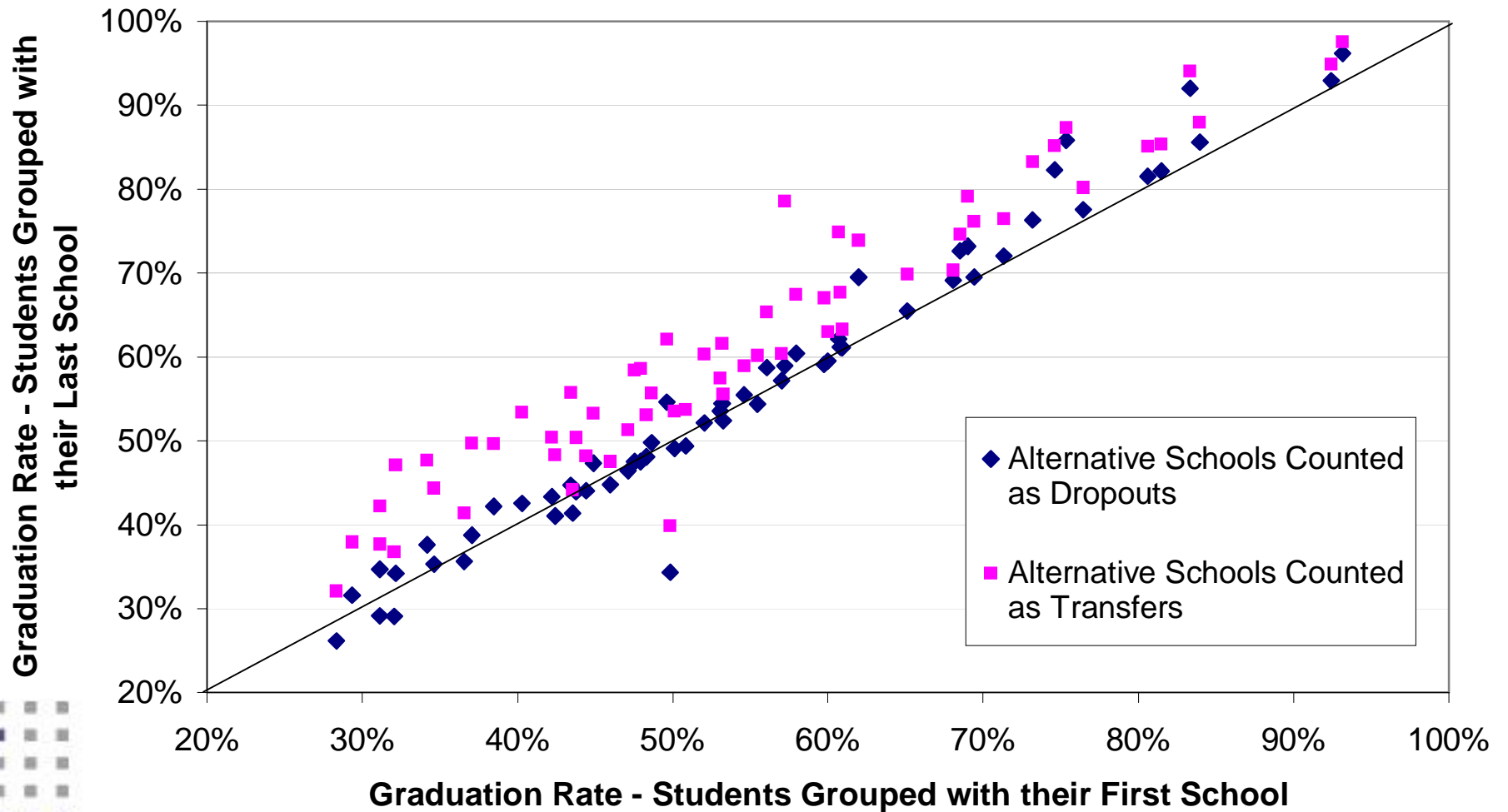
# Attribution of transfers to first school vs. last school

Graduation Rates that Group Students by their First High School Compared to Rates that Group Students by their Last High School



# Attribution of transfers to first school vs. last school

Graduation Rates that Group Students by their First High School Compared to Rates that Group Students by their Last High School



# Graduation rates by LEP status

Latino students in CPS who were 13-years-old in 1998

LEP status defined in  
high school

	In the bilingual program at age 14	Not in the bilingual program
<b>Girls</b>	<b>60%</b>	<b>67%</b>
<b>Boys</b>	<b>44%</b>	<b>55%</b>

LEP status defined in  
the primary grades

	In the bilingual program at age 9	Never in the bilingual program
<b>Girls</b>	<b>66%</b>	<b>64%</b>
<b>Boys</b>	<b>52%</b>	<b>49%</b>