

# **Head Start National Reporting System**

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# Purpose & Functions

- The Head Start National Reporting System (HSNRS) was designed to provide indicators of the progress children are making on key early literacy and math skills for all local programs.

# Purpose & Functions (2)

- NRS supplements local child assessment and program self-assessment efforts.
- For the first time, NRS provides Head Start with consistently-collected, comparable measures for all programs.
- To be used in planning training and technical assistance for programs.

# How NRS Works

- All kindergarten-eligible 4- and 5-year-old children are given the same brief one-on-one assessment.
- Fall and spring assessments are reported to show progress over course of year.
- 3-day regional training sessions for trainers from 2,000 Head Start programs.
- They train local staff to conduct child assessments.

# How NRS Works (2)

- Child's responses recorded by assessor on scannable answer sheets.
- Internet-based Computer-Based Reporting System (CBRS) supports the NRS data collection activities.
- Baseline and Growth NRS program reports for individual Head Start programs.
- NRS Reference Data tables.

# HSNRS Assessment Components

- English Language Screener
- Vocabulary
- Letter Naming
- Early Math Skills

# Spanish Assessment Components

- Spanish Language Screener
- Spanish Vocabulary
- Spanish Letter Naming
- Spanish Early Math Skills

# Criteria for Assessment Components

- Skills that policy makers expect Head Start children to learn.
- Can be reliably measured in relatively brief assessment.
- Contribute to achievement in school.
- Can be enhanced by activities in Head Start.
- Skills that parents want children to learn.

# Developing Assessments

- Westat used extensive assessment data base from longitudinal studies on samples of Head Start children (FACES, QRC, Head Start Impact Study, ECLS-K).
- Select subsets of items with difficulty levels suitable for Head Start children.
- Simplify assessment procedures to enhance reliability with local assessors.

# Developing Assessments (2)

- Development process guided by expert advice of Technical Work Group.
- National field test, public comment preceded first year of implementation.
- Extensive quality-control effort, including monitoring study by independent contractor and comparisons with longitudinal sample survey (FACES 2003).

# How Assessments Are Scored

- Each assessment component scored separately.
- No attempt to produce single summary score for entire assessment.
- Mean percent of items correct and percentage of children at different skill levels reported to local programs.

# Profile of NRS Participants

- Next slide shows number of Head Start programs participating and numbers of children assessed in a typical round of the NRS (Spring 2006).
- Chart also shows breakdown of children assessed by race/ethnicity, home language, and disability status.

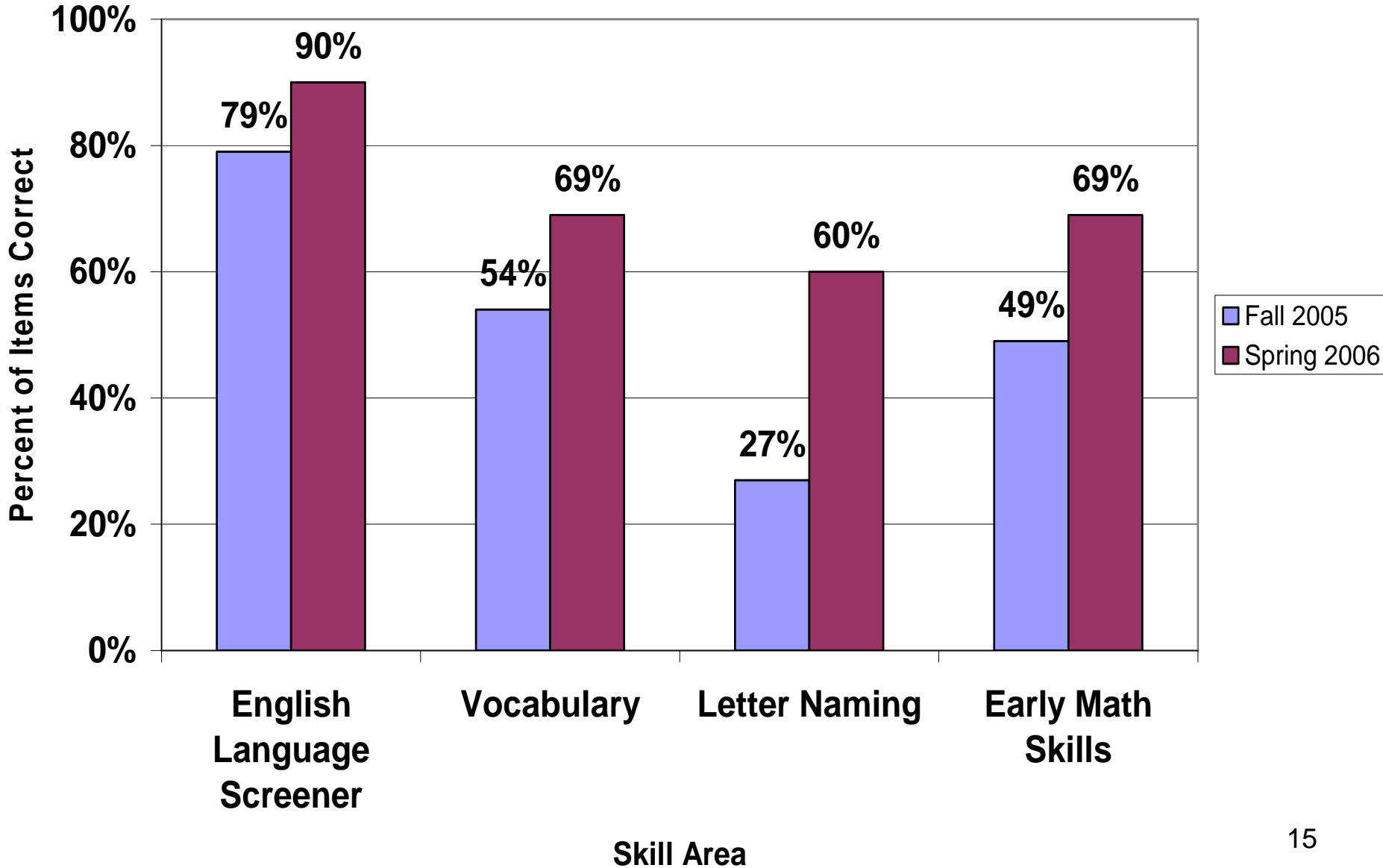
## Spring 2006 Head Start National Reporting System

Number and percentage of children assessed	396,823 (97.7%)
Total number of children available for assessment	406, 263
Valid English assessments only	298,972
Valid Spanish assessments only	22,903
Valid English and Spanish assessments only	74,948
Percentage of assessed children who are English Language Learners	26%
Percentage of assessed racial/ethnic minority children	71%
Percentage of assessed children with identified disabilities	9%
Number of participating Head Start programs	1,787 (94%)
Total number of eligible Head Start programs	1,905

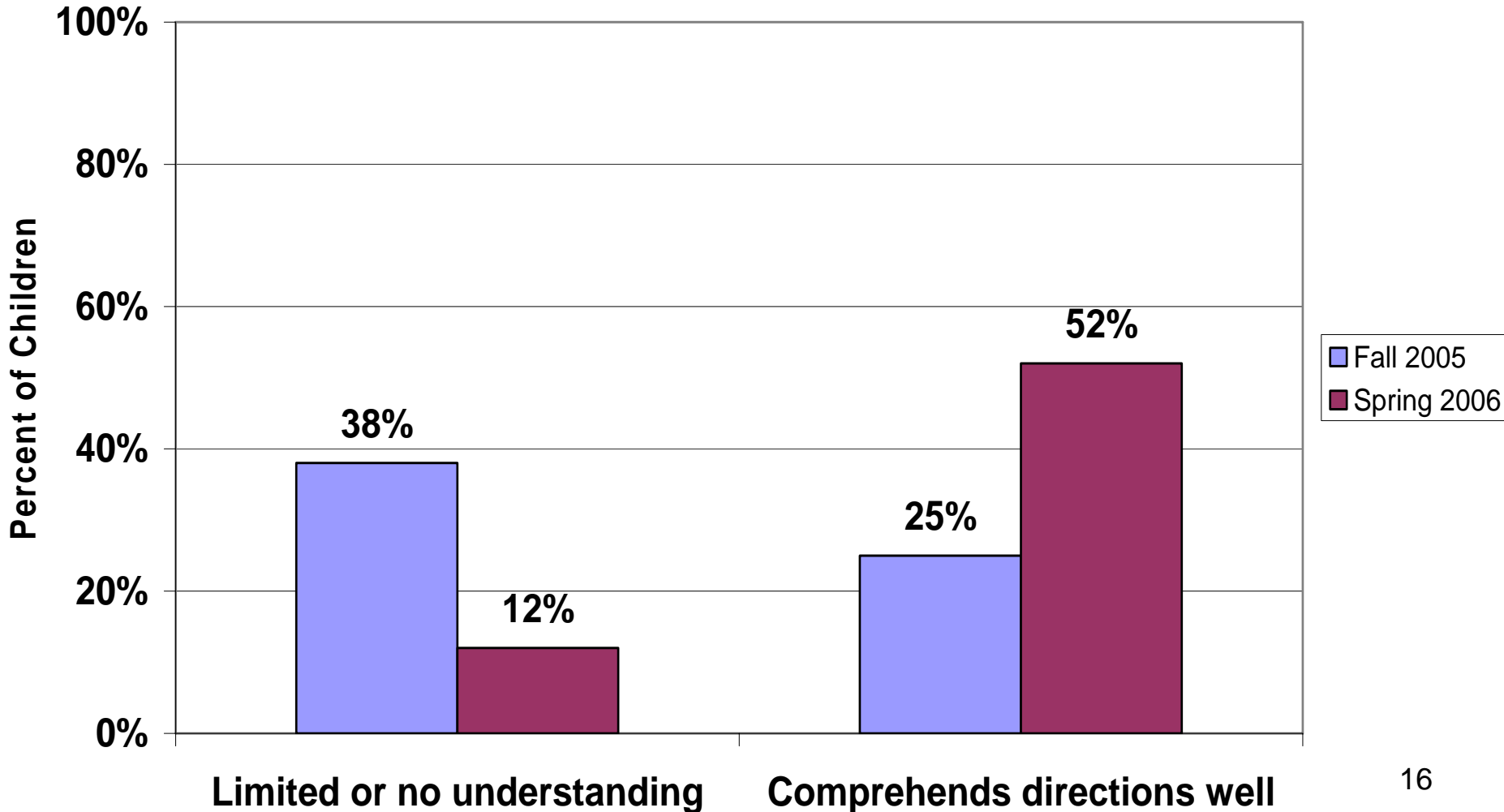
# Illustrative NRS Growth Data

- Next graph shows average percent of items correct for each NRS English assessment component in Fall 2005 and Spring 2006 (national data for all children assessed in both fall and spring).
- Following graphs show percentage of Head Start children below or above key values in each skill area.

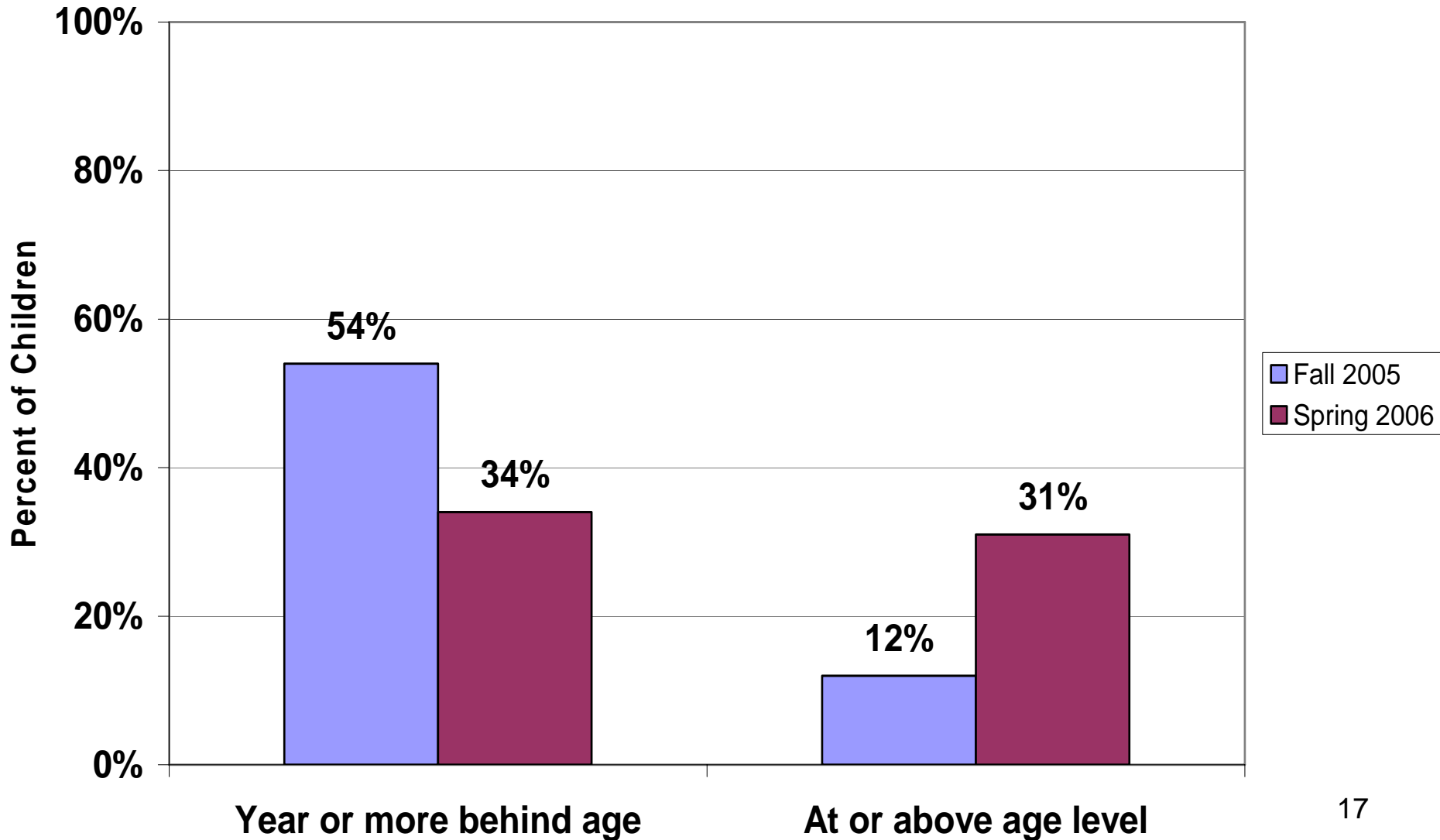
# Fall-Spring Growth Chart



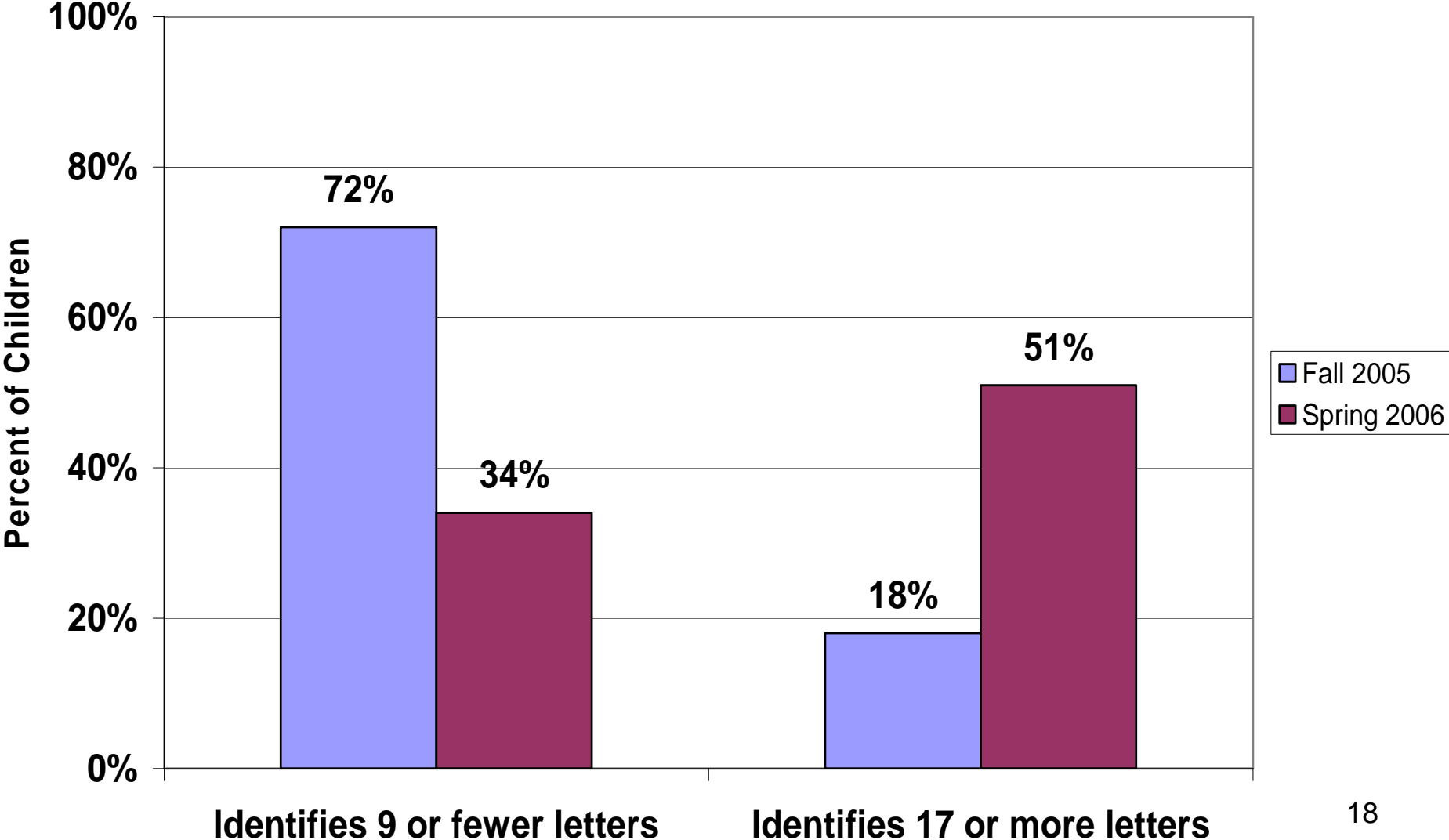
# Skill Level Growth Chart for English Language Screener (English Language Learners Only)



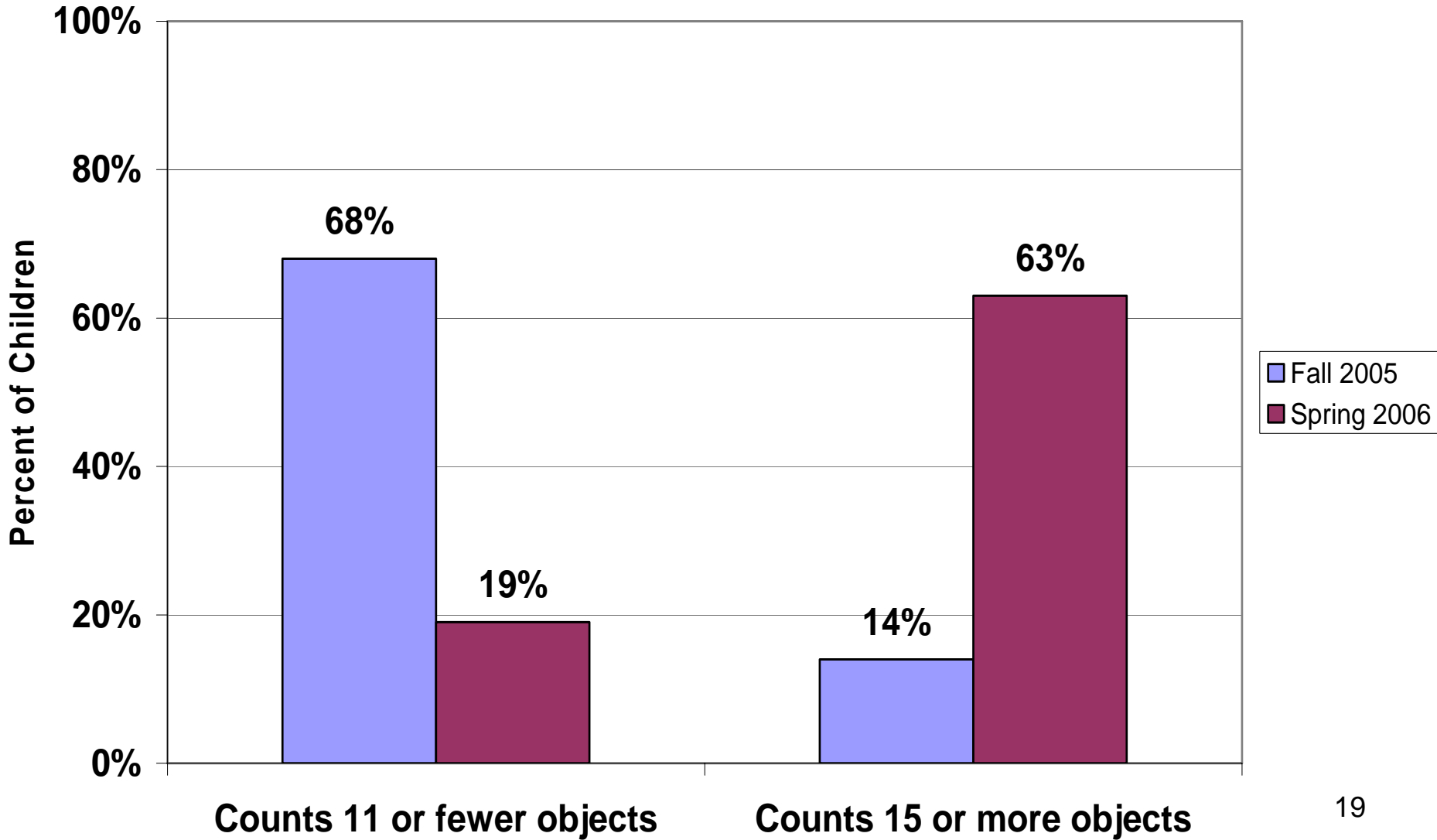
# Skill Level Growth Chart for English Language Vocabulary



# Skill Level Growth Chart for Letter Recognition (English)



# Skill Level Growth Chart for Early Math Skills (English)



# Ratings of Social-Emotional Development

- Starting Fall 2006, NRS expanded to encompass domains of social-emotional development of Head Start children.
- Classroom teachers report in three behavior areas:
  - Positive Approaches to Learning
  - Cooperative Behavior and Positive Relations with Others
  - Absence of Problem Behaviors

# Evidence on Validity of NRS Assessment

- Cooperation rates
- Seems developmentally appropriate
- Reliability
- Predictive validity

# Evidence Shows High Cooperation

- Vast majority of children eligible for NRS were successfully assessed.
  - 97.3% in Fall 2005 NRS, or 408,498 children
  - Less than one percent not assessed because of repeated child non-cooperation (0.8%)
  - Less than half a percent not assessed because of severe disability or IEP prohibition (0.4%)
  - Less than two percent not assessed because parent refused permission (1.5%)

# High Cooperation (continued)

- In NRS, majority of children with disabilities and IEPs were assessed.
  - 94.6% (33,866 of 35,796) in Spring 2006
- According to Quality Assurance study, most programs report children respond positively to the assessment.

# Criteria for Developmentally Appropriate

- Tasks are not too difficult for children in relevant age range (“floor effect”).
- Tasks are not too easy for children in relevant age range (“ceiling effect”).
- Typical child shows growth in task performance during program year.

# **NRS Tasks Seem Developmentally Appropriate**

For children in 4-5 year-old age range:

- All tasks used in NRS show substantial growth in task performance during program year.
- Growth shown by ethnic minority children and English-language learners, as well as by non-minority children.

# Percent Increase in Median Items Correct, Fall to Spring

- NRS Vocabulary (2005-2006)
  - Black children: 55%
  - White children: 46%
  - Hispanic ELL children: 33%
- NRS Early Math Skills (2005-2006)
  - Black children: 42%
  - White children: 42%
  - Hispanic ELL children: 36%

# NRS Seems Developmentally Appropriate (continued)

For children in 4-5 year-old age range:

- Most tasks neither too difficult nor too easy
  - Minimal floor and ceiling effects, except for letter naming task
  - Letter naming task shows huge growth during program year

# Establishing Reliability

- Internal consistency
  - Children who do well on one component of task tend to do well on other components.
- Test-retest reliability
  - Assessments of same child on two occasions produce similar results.
- Inter-assessor reliability
  - Assessments of same child by two different assessors produce similar results.

# Establishing Reliability (continued)

- NRS 2003 Field Test sent trained child assessors to national sample of 36 Head Start programs to conduct parallel assessments of same children assessed by trained local program staff, within one-to-two weeks of original assessment.
- In each round of national NRS, data are analyzed for internal-consistency reliability and other psychometric properties.

# Evidence Shows Good Reliability

- Internal consistency reliability of cognitive tasks used in FACES 2000-2001:
  - Median  $r = .88$ , range .77 to .97
- Internal consistency reliability of abbreviated tasks used in NRS 2005-2006:
  - Median  $r = .84$ , range .77 to .93
- Inter-assessor reliability of tasks in 2003 NRS field test:
  - Median  $r = .79$ , range .78 to .91

# Establishing Predictive Validity

- Do NRS assessment results correlate with child's tested performance at end of kindergarten?
- Do NRS results correlate with teacher ratings of child's academic performance in kindergarten?
- Do NRS results correlate with teacher reports of child's grade progress (e.g., retention vs. promotion to first grade)?

# Evidence Shows Predictive Validity

- We matched data for a sample of 671 children who were assessed in both the NRS in Head Start and in FACES 2003 at the end of kindergarten:
  - 86% response rate in FACES Kindergarten follow-up;
  - 71% matching rate (671 out of possible 942 children) between NRS and FACES.
- NRS assessment results were found to correlate with child's tested performance at end of kindergarten.

# Evidence Shows Predictive Validity

- Assessment results in Head Start correlate with child's tested performance at end of kindergarten.

Predicting to...

- Basic reading skills,  $R = .56$
- Math reasoning composite,  $R = .60$
- General knowledge composite,  $R = .66$

# Predictive Validity (continued)

- Assessment results in Head Start correlate with Kindergarten teacher ratings of child's academic performance at end of Kindergarten.
  - Ratings of language and literacy skills,  $R = .54$
  - Ratings of mathematical skills,  $R = .56$

# Predictive Validity (continued)

- Assessment results in Head Start correlate with teacher reports as to whether child will be promoted to regular first grade or will repeat kindergarten or attend transitional class.
  - Logistic equivalent of multiple R = .45
  - Percent agreement between predicted and actual decisions = 81%

# Predictive Validity to Later Grades

- Longitudinal follow-up of children in ECLS-K study show that direct assessment results at start of kindergarten correlate with children's tested performance at end of 1st, 3rd, and 5th grades.
- Assessment results correlate with likelihood of being retained in grade through 5th grade.
- Predictive importance of early math skills and general knowledge increases in later grades.

# Summary and Conclusions

- NRS assessments of children's early skills have achieved goals of getting good cooperation, being developmentally appropriate, reliable and valid.
- Continuing discussion on ways to improve assessments further.