Differentiated Instruction to Support High-Risk Preschool Learners

Barbara D. DeBaryshe
University of Hawaii Center on the Family
Achievement Disparities Within At-Risk Populations

- Does the Matthew effect operate within low SES samples?
  - Molfese et al. (2006) – yes
  - FACES 2000 (ACF, 2003) – no
  - Kaplan & Walpole (2005) – yes
Differentiated Instruction

- Response to differences within a classroom
  - Same curriculum and goals
  - Different materials, activities, teacher scaffolding, ways to show knowledge

- Hallmarks
  - Small group instruction
  - Flexible grouping
  - Continuous performance assessment
Purpose

- Describe a differentiated instruction (DI) model used in Early Reading First (ERF)
- Post-hoc comparison of higher-risk vs. classroom peers
- N.B., not an RTI protocol
- Promises and challenges of DI
Participants—Sites and Teachers

- Hawaii ERF project
- 8 Head Start classrooms
- 5 lead teachers
  - (88% BA, > 16 years)
- 11 assistant teachers
  - (40% HS, 40% CDA, 20% BA, 9 years)
Participants--Children

- 128 children with pre- and posttest data
- Mean age 44 months
- 57% kinderbound
- 56% Hawaiian,
  14% Pacific Islander
  26% Asian, 4% other
- 35% ELL (19 different home languages)
- 6% had IEP, 19% referred
Curricula

- Creative Curriculum
- Learning Connections
  - Literacy and math enrichment
  - Small group focus
  - Sequenced & differentiated
Differentiation Strategies

- Small learning groups
- Bi-level lesson plans
  - Different lessons for Level 1 vs. Level 2 children
- Activity variations
Measures

- LC-COR
- PPVT-III
- TERA-3
- PALS
- DSC mathematics & logical operations
Group Definitions

- Higher-Risk
  - PPVT pretest 75 or below
  - \( n = 33 \) (26% of children)
- Peers
- Pretest Comparisons
  - Similar age, gender
  - HR > ELL (72% vs. 22%)
  - HR < PPVT (59 vs. 90)
  - HR < other pretest scores
Results—Curriculum Progress

- Higher-risk moved through less of the curriculum sequence
- Higher-risk lower level of mastery
- $\eta^2 = .03 - .19$
Results—PPVT

- 2 (group) x 2 (time) ANOVA
- GT interaction for PPVT
  - Steeper change for higher-risk
  - 15 vs. 4 for mean gain
  - $\eta^2 = .15$
PPVT Gains Over Time

Pre

Post

Higher-Risk

Peer
Results—Other Tests

- GT trend for TERA, phonological awareness, math
  - Trend towards steeper change for peers
- ns for alphabet, print concepts
  - Both groups showed similar change scores
- Results across all tests inconsistent with regression to the mean
Did Children Attain Benchmarks?

![Bar chart showing comparison between Higher-Risk and Peers for PPVT*, TERA*, and DSC* benchmarks.]

- **Higher-Risk Peers**
  - PPVT*
  - TERA*
  - DSC*

- **Peers**
  - PPVT*
  - TERA*
  - DSC*
Benchmarks, Cont’d.

![Bar chart showing comparison between Higher-Risk and Peers in various categories such as Letter Names*, Letter Sounds, Rhyme, 1st Sounds, Print Concept*, and Write Name.]
Within the Higher-Risk Group

- 16 (48%) of higher-risk peers moved out of initial risk status (i.e., posttest PPVT > 75)
  - Gained 21 points vs. 9 points
- These large gainers:
  - Started with higher PPVT (64 vs. 55)
  - < likely to be ELL (37% vs. 89%)
  - > parent involvement
Discussion

- Matthew effect was not found
  - Higher risk > PPVT gains
  - Not simply regression to mean
  - Similar or slightly smaller gains on other outcomes

- But performance differences not erased
  - Higher-risk still well below age-level

- No non-DI control group
Practical Issues

- Naïve to expect to erase performance gap in one year, especially for ELL

- Effectiveness of DI vs. RTI

- Challenges of DI
  - Requires skilled teachers
  - Small group instruction
  - Progress monitoring burden
Research Questions

- Little experimental research on DI
- Define & measures differentiation strategies
- Feasibility trials—enabling conditions for DI components
- Efficacy and effectiveness field trials
Mahalo

debarysh@hawaii.edu