

Cynthia Zettler-Greeley, Laura Bailet, & Vera Meyerholtz, Nemours BrightStart!, Jacksonville, Florida

INTRODUCTION

- Nemours BrightStart! (NBS!) Response to Intervention (RTI) Tier Two early literacy program for pre-kindergartners is effective when implemented by NBS! trained early literacy specialists (Bailet et al., 2009; Bailet et al., 2011, in press)
- To increase the scope of the program, NBS! trained non-NBS! certified pre-kindergarten teachers and paraprofessionals in implementation of curriculum
- Implementation fidelity influences child outcomes (Wasik & Hindman, 2011)
- The present study examined the impact of:
 - paraprofessionals implementing an RTI Tier Two early literacy intervention
 - whether there are differences in fidelity of implementation between certified, degreed teachers and paraprofessionals
 - whether fidelity of implementation is dependent on number of years of teaching

METHOD

Participants

- 23 certified, degreed pre-kindergarten teachers
- 21 pre-kindergarten paraprofessionals
- Mean years of teaching experience for classroom teachers = 20.46 years (SD=11.87), n=13 reporting
- Mean years of teaching experience for paraprofessionals = 11.0 (SD=10.63), n=11 reporting

Measures

- Nemours BrightStart! Lesson Observation Rating Form (Likert scale rating from 1= "Not at all" to 5= "Completely"):
 - "The teacher followed the script and instructions in the lesson plan"
 - "The teacher was comfortable during this lesson (e.g., use of materials, speed, long pauses, referring to manual, etc)"
 - "The lesson was delivered in a place that had minimal distractions (e.g., low levels of noise, traffic, activity, etc)"
 - "The materials were used according to the instructions"
 - "Of the activities observed, all elements were completed"
 - "The students were engaged during this lesson (e.g., attending, participating, enjoying tasks)"

Procedure

- Paraprofessionals attended two-day training on implementation of NBS! prekindergarten program; certified, degreed pre-kindergarten teachers had previously attended; participants received curriculum kit and associated manipulatives during training
- Each instructor was observed by NBS! observer experienced in using the curriculum twice during the course of the intervention
- One observer may have observed the same teacher across both observations
- Time 2 observation sessions ranged from 1 week after the first observation to 4 months, with an average time between observations between 2 to 3 months
- Intervention
 - Delivered by certified, degreed preschool teachers or paraprofessionals at preschools and childcare centers in a large, urban city in the Southeastern United States
- Eighteen 30-minute lessons delivered over 4 to 5 months
- Designed as a RTI Tier Two "push-in" intervention; small groups consisted of no more than 4 children
- Lessons covered developmentally appropriate areas such as: syllable segmentation, letter identification, letter sound, blending, elision, and rhyming

Table 1. Descriptive Statistics, Time 1

Variable	n	Mean	SD	Range
Certified Teachers				
Q1	23 (20)	4.52 (4.40)	.79 (.88)	2-5 (2-5)
Q2	23 (20)	4.65 (4.45)	.57 (.83)	3-5 (3-5)
Q3	23 (20)	3.30 (4.00)	1.06 (1.17)	1-5 (1-5)
Q4	23 (20)	4.65 (4.40)	.94 (.88)	1-5 (2-5)
Q5	23 (20)	4.65 (4.30)	.71 (.87)	3-5 (2-5)
Q6	23 (20)	4.70 (4.45)	.56 (.76)	3-5 (3-5)

Table 2. Descriptive Statistics, Time 2

Variable	n	Mean	SD	Range
Parapros				
Q1	21 (18)	4.05 (3.72)	1.07 (1.36)	1-5 (1-5)
Q2	21 (18)	3.62 (3.56)	1.50 (1.20)	1-5 (1-5)
Q3	21 (18)	3.48 (4.06)	1.37 (1.16)	1-5 (2-5)
Q4	21 (18)	4.19 (3.89)	1.12 (1.28)	1-5 (1-5)
Q5	21 (18)	3.81 (3.83)	1.12 (1.51)	1-5 (1-5)
Q6	21 (18)	3.95 (4.06)	1.12 (1.43)	2-5 (1-5)

RESULTS

- Of those reporting teaching experience, certified teachers had marginally more teaching experience than paraprofessionals ($F[1,22]=4.159, p=.054$).
- Years of teaching experience did not contribute significantly to any of the observation ratings at either Time 1 or Time 2 ($p > .05$)
- The total score across all ratings was significantly higher for certified teachers relative to paraprofessionals at Time 1 ($F[1,42]=6.98, p < .05$) but not Time 2 ($p > .05$); total scores did not differ within either group from Time 1 to Time 2 ($p > .05$).
- On average, certified teachers were significantly more comfortable delivering the lesson than paraprofessionals at the Time 1 observation ($F[1,42]=9.43, p < .01$), even when controlling for teaching experience ($F[1,21]=5.01, p < .05$).
- This difference remained significant at the Time 2 observation ($F[1,36]=7.30, p = .01$), even when controlling for teaching experience ($F[1,21]=10.90, p < .01$).

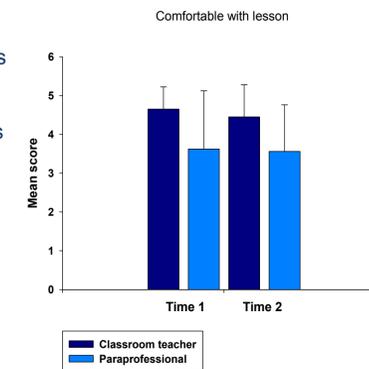


Figure 1. Teacher comfort during lesson, Time 1 and Time 2*

- On average, certified teachers completed significantly more activities than paraprofessionals at the Time 1 observation ($F[1,42]=8.98, p < .01$), even when controlling for teaching experience ($F[1,21]=5.76, p < .05$).

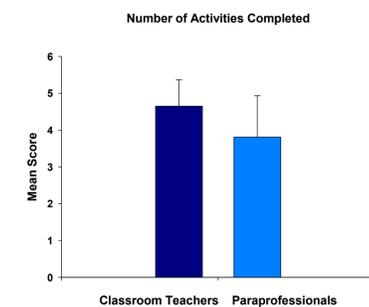


Figure 2. Number of activities completed, Time 1*

- On average, students were significantly more engaged when certified teachers were delivering the lesson than paraprofessionals at the Time 1 observation ($F[1,42]=8.00, p < .01$), even when controlling for teaching experience ($F[1,21]=5.07, p < .05$).

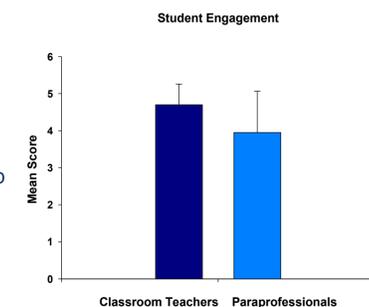


Figure 3. Student engagement during lesson, Time 1*

DISCUSSION

- At Time 1 observation, paraprofessionals scored significantly lower than certified teachers in three categories 1) teacher being comfortable during the lesson 2) completing all elements of activities observed, and 3) engaging the children
- At Time 2 observation, only "teacher comfort during the lesson" was a significantly lower rating for paraprofessionals relative to certified teachers ($p < .05$), suggesting that with more experience and practice with the curriculum, paraprofessionals improved in "completing all elements of activities observed" and "engaging the children"; however, certified teachers scores dropped somewhat in these categories from Time 1 to Time 2

Conclusions

- Results suggest that paraprofessionals can implement a RTI Tier Two early literacy curriculum with fidelity similar to that found by certified teachers
- They may require more training prior to curriculum implementation and may also benefit from additional training at the midpoint of the curriculum intervention
- Paraprofessionals may also benefit from having more opportunities to practice delivering the curriculum prior to the start of the intervention
- Of those reporting, paraprofessionals had significantly less teaching experience than the certified teachers
- However, results did not differ when the effect of instructor's years of teaching experience was statistically controlled for, suggesting that some other unmeasured variable was accounting for the differences found in the Time 1 and 2 observations

Limitations

- Observers were not blind to whether the classroom instructors were certified teachers or paraprofessionals
- Inter-rater reliability was not conducted; it is possible that different observers might apply ratings differently

Future Directions

- Measure child outcomes to analyze whether teacher credentials and experience impact child outcomes with this early literacy intervention
- Conduct inter-rater reliability assessment for the observation form
- Assess more detailed aspects of paraprofessional's specific work experience in classroom intervention more accurately.

REFERENCES

- Bailet, L.L., Murphy, S.P., Repper, K.K., Piasta, S.B., & Zettler-Greeley, C.M. (2011, in press). Emergent literacy intervention for prekindergartners at risk for reading failure: Years two and three of a multi-year study. *Journal of Learning Disabilities*.
- Bailet, L.L., Repper, K.K., Piasta, S.B., & Murphy, S.P. (2009). Emergent literacy intervention for prekindergartners at risk for reading failure. *Journal of Learning Disabilities*, 42(4), 336-355.
- Wasik, B.A., Hindman, A.H. (2011). Improving vocabulary and pre-literacy skills of at-risk preschoolers through teacher professional development. *Journal of Educational Psychology*, 103(2), 455-469.

ACKNOWLEDGEMENTS

This research was funded by the Nemours Foundation.