# ROBOKIND PHONICS

## IMPROVING EARLY CHILDHOOD READING EDUCATION: **A REVIEW ON ROBOKIND PHONICS IN SPECIAL EDUCATION CLASSROOMS**



# SCHOOL PROFILE

This white paper focuses on four different schools across various states that participated in the RoboKind Phonics Beta program. These schools, committed to improving early childhood reading education and open to innovative solutions, include:

- South Ripley Elementary School, Indiana
- Montour School District, Pennsylvania
- St. John School District #3, North Dakota
- Deer Park ISD, Texas

Each of these schools faced challenges in early childhood reading education and sought to address these challenges through the implementation of the RoboKind Phonics Beta program.

# THE CHALLENGE

The primary challenge faced by these schools was the need to improve early childhood reading skills, particularly in special education classrooms. These classrooms catered to students with a range of special needs, including those diagnosed with autism, Down syndrome, and those with intellectual disabilities, characterized by IQ scores within the 45-70 range.

Teaching reading skills to these students presents unique challenges. Traditional reading programs often fail to engage these students or accommodate their diverse learning needs. Furthermore, students with intellectual disabilities often require more repetition and practice to master reading skills, and they may struggle with the abstract and symbolic nature of written language.

Despite various strategies and programs, there were still gaps in these students' reading abilities. The schools were particularly interested in a program that could effectively engage students, accommodate their diverse learning needs, and foster a positive attitude towards reading.


# THE SOLUTION

The solution came in the form of RoboKind Phonics Beta, a program designed to improve early childhood reading skills. The program was implemented over four weeks, covering eleven lessons. The program was unique in its approach, using a combination of technology and interactive learning to engage students and improve their reading skills.

RoboKind Phonics is a play-based, explicit, and systematic phonics program aligned with the Science of Reading. It is the only phonics program that uses a humanoid robot, providing a unique and engaging learning experience for students. The program stimulates multiple sensory modalities by combining interactive technology with visual, auditory, kinesthetic, and tactile learning materials. This multi-sensory approach is particularly effective for students with special needs, who often benefit from more engaging and hands-on learning experiences.

The program was developed by former educators and experts in the field of early childhood reading, and it uses research- and evidence-based practices that lead to measurable outcomes. Each lesson includes target sound practice, build, write, and read a word activities, and assessments. The program also provides all the necessary materials for delivering a meaningful early literacy curriculum, including foam letters, LCD writing tablets, flashcards, and learning centers.

RoboKind Phonics can be delivered individually for targeted intervention, in small group settings, or to the whole class, providing flexibility for different classroom needs and contexts.

# IMPLEMENTATION

The implementation of RoboKind Phonics Beta involved a comprehensive training process for the autism specialists chosen to work with the program as facilitators. This training included a live distance training session and access to an archive of professional learning support videos. These resources ensured that facilitators were well-equipped to deliver the program effectively. Facilitators then worked with their local students while trainers observed via webcam and provided feedback.

The students selected for the program were those for whom other approaches had not been successful. They had large deficits in social skills, communication skills, and emotion regulation. Over the course of the program, the students completed 63 lessons, with 95% of them reporting feeling excited or happy during the lessons. This high level of positive emotional engagement was a testament to the program's ability to connect with and motivate the students.


# RESULTS

The results of the RoboKind Phonics Beta program were promising. Despite the small sample size, there were significant changes across all outcomes.

- The students' DIBELS (Dynamic Indicators of Basic Early Literacy Skills) Correct Letter Sound (CLS) scores improved from a pre-median of 42.5 to a post-median of 138. This increase signifies that students were able to recognize 96 more letter sounds within one minute after using RoboKind Phonics for four weeks.

## Test Statistics[a]

| | DIBELS CLS POSTTEST - DIBELS CLS PRETTEST | DIBELS WWR POSTTEST - DIBELS WWR PRETTEST | ERAS POSTTEST - ERAS PRETTEST |
|---|---|---|---|
| Z | -1.604[b] | -1.826[b] | -1.841[b] |
| Asymp. Sig. (2-Tailed) | .109 | .068 | .066 |

a.Wilcoxon Signed Ranks Test
b. Based on negative ranks

- The DIBELS Whole Words Read (WWR) scores also showed improvement, with a pre-median score of 11 increasing to a post-median score of 46.5. This indicates that students were able to read 35 more words within one minute after the program.

## Percentiles

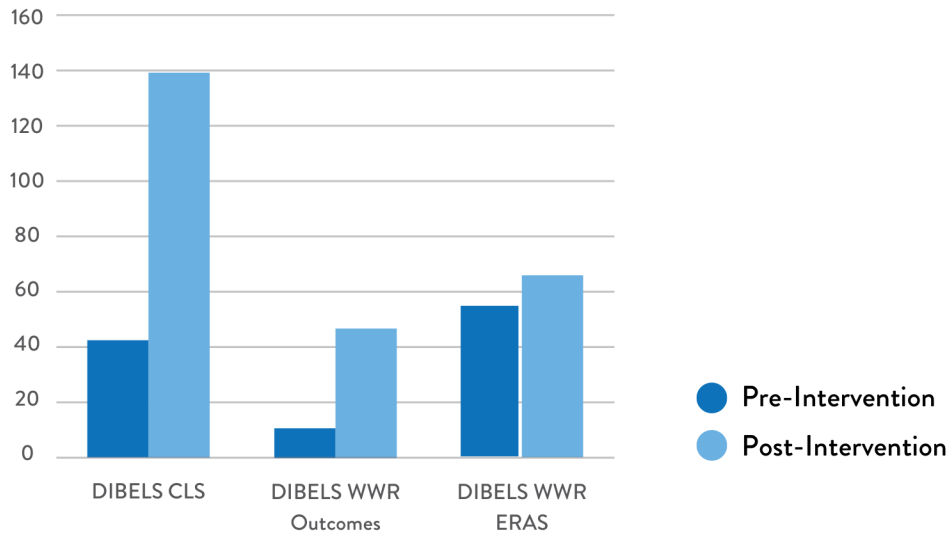
| | | Percentiles 25 | 50 | 75 |
|---|---|---|---|---|
| Turkey's Hinges | DIBELS CLS Prettest | 22.0000 | 42.5000 | 100.5000 |
| | DIBELS CLS Posttest | 78.0000 | 138.0000 | 144.5000 |
| | DIBELS WWR Prettest | 4.5000 | 11.0000 | 22.5000 |
| | DIBELS WWR Posttest | 24.0000 | 46.5000 | 48.0000 |
| | ERAS Prettest | 44.0000 | 53.5000 | 62.0000 |
| | ERAS Posttest | 60.0000 | 66.0000 | 76.0000 |

Medians and Interquartile Ranges

| Outcome | Pre-intervention | Post-intervention | p-Value |
|---|---|---|---|
| DIBELS CLS | 42.5 (22.0 - 100.5) | 138.0 (78.0 - 144.5) | 0.11 |
| DIBELS WWR | 11.0 (4.5 - 22.5) | 46.5 (24.0 - 48.0) | 0.068 |
| ERAS | 53.5 (44.0 - 62.0) | 66.0 (60.0 - 76.0) | 0.066 |

- The Elementary Reading Attitude Survey (ERAS) scores showed an increase in students' reading enjoyment. The pre-median score was 53.5, which is within the 25th percentile of the nation. The post-median score was 66, which is within the 66th percentile of the nation. This demonstrates that students' reading enjoyment increased significantly after participating in the program.

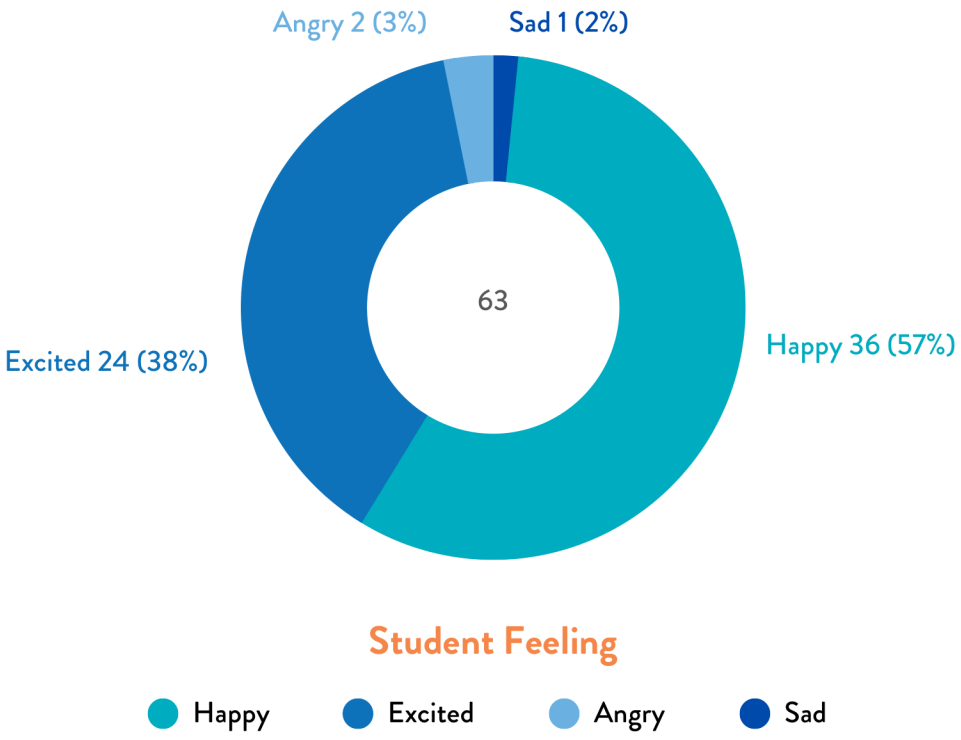
## Wilcoxon Signed Ranks Tests



These improvements suggest that the RoboKind Phonics Beta program had a positive impact on students' reading skills and attitudes towards reading.

Furthermore, teacher-reported student engagement rates went up in all four studies, from 70% with the previous phonics curriculum to 95% with RoboKind Phonics. Student self-reported engagement also increased, from the 71st percentile before starting RoboKind Phonics to the 85th percentile after. Additionally, 95% of the students reported feeling excited or happy during the lessons, further demonstrating the program's positive impact on student engagement and enjoyment.

## Student's Self-Reported Feelings When Using Robokind Phonics



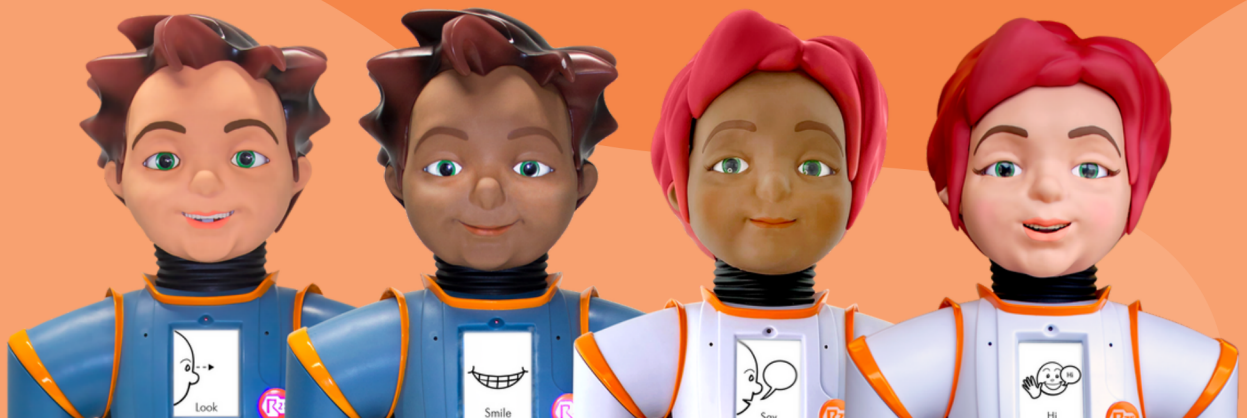
# EXAMPLES OF **INDIVIDUAL PROGRESS**

Several students showed significant improvement after participating in the RoboKind Phonics Beta program.

Example #1: One student who initially had severe behavioral issues was able to transition to a full-day schedule after working with the program. His tantruming and aggression decreased, and he was able to self-regulate his emotions. He also improved his reading skills, moving from following along with a story being read to him to reading some books independently.

Example #2: A student who began the study below a kindergarten reading level and with very low reading enjoyment as shown in the preassessment, loved working with the robots and enjoyed the sound button I-VAKT activities, increased to an end of 3rd grade reading level by the end of the 4 week study and will be entering 1st grade in general education classes. This student is diagnosed with autism, and has an IQ of 60. He now enjoys reading and is expected to be ahead of his 1st grade class in reading.

Example #3: A student with autism and severe behavioral issues began the 4 week program with no reading comprehension and how letter recognition. By week 4, he was enjoying the program and after the formal reading lessons was choosing to read sports books available in the classroom when given free time activity choices. He also danced in celebration after completing lessons with the robots.



# EXAMPLES OF **INDIVIDUAL PROGRESS**

In addition to these improvements, teachers participating in the focus groups shared their positive experiences with the program:

**“I enjoyed using the RoboKind Phonics program. I had a lot of fun with my student. It was fun to teach and uses effective practices”**

Brooke Zupan, St. John #3

**“I'm really enjoying it! I can see this working for many of our SPED and general education students!”**

Casey Hutton, South Ripley

**“I am really enjoying using this program in my classroom it has become a part of our day and the students ask me when is it time to read :)”**

Fannie Penick, Deer Park ISD

**“I think Robokind Phonics has been beneficial to my student”**

Sheri Sumpter, Montour ISD

**"I thought the app was very user-friendly"**

Brooke Zupan, St. John #3

These quotes highlight the positive reception of the RoboKind Phonics Beta program among educators and its effectiveness in improving students' reading skills.


# LESSONS LEARNED

The implementation of the RoboKind Phonics Beta program provided valuable lessons for the schools. They learned the importance of proper training for facilitators and the need for patience and flexibility in implementing a new program. They also learned the value of engaging students with innovative and interactive learning methods.

The program's play-based, multi-sensory approach was particularly effective in engaging students and accommodating their diverse learning needs. The use of a humanoid robot added a unique element that captured students' interest and made learning more enjoyable.

Furthermore, the program's flexibility in delivery—allowing for individual or small group—was a significant advantage. It allowed schools to adapt the program to their specific needs and contexts.

The positive outcomes and feedback from the program led to recommendations for its wider use. As Casey Hutton from South Ripley stated, "I'm recommending this to our reading specialist, and the K-2 grades to help students."

These lessons highlight the potential of innovative, research-based programs like RoboKind Phonics to improve early childhood reading education, particularly in special education classrooms.

# CONCLUSION

The RoboKind Phonics Beta program demonstrated the potential for improving early childhood reading education, particularly in special education classrooms. The program's unique, play-based, multi-sensory approach effectively engaged students and accommodated their diverse learning needs. The positive outcomes, including significant improvements in students' reading skills and attitudes towards reading, suggest that the program could be a valuable tool for schools facing similar challenges.

Furthermore, the program's flexibility in delivery and the positive feedback from educators indicate its potential for wider use. As evidenced by the recommendations for its implementation in other grades and by reading specialists, the program has the potential to make a broader impact on early childhood reading education.

Further research and larger sample sizes could provide more definitive evidence of the program's effectiveness. However, the initial results and lessons learned from this study highlight the promise of innovative, research-based programs like RoboKind Phonics in addressing the challenges of early childhood reading education.

RoboKind believes that exceptional outcomes are possible for all students. We are an educational technology company that combines assistive robots & avatars, meaningful curricula, and professional learning in easy-to-use programs that are research-proven to accelerate student mastery. We are proud to say that, as of today, 7,358 exceptional students have spent 1,074,275 minutes learning with RoboKind's CASE-endorsed social skills program. Every day, our innovative partners and their passionate educators deliver measurable impact in special needs classrooms. In fact, 90% of students enrolled in our programs achieve at least one social skill IEP goal during the first semester of use.

**For us, that's something worth celebrating.**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