



# Dolly Parton's Imagination Library of Kansas

2023-2024 Evaluation

# Overview

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Dolly Parton’s Imagination Library (DPIL) is an initiative aimed at promoting early childhood literacy and fostering a love for reading among young children. Founded by country music icon Dolly Parton, the program provides free, high quality, age-appropriate books to children from birth to age five, regardless of their family's income. While the first local Imagination Library affiliate in Kansas was established in 2005, state-level efforts to expand DPIL began in 2021 when the Kansas Legislature named the Kansas Children’s Cabinet and Trust Fund (Children’s Cabinet) to serve as the state partner for DPIL. In this role, the Children’s Cabinet provided a 50% financial match to newly established local DPIL programs in unenrolled counties using federal Preschool Development Grant funds. This work was expanded in July of 2022 with a \$500,000 line item being added to the Children's Initiatives Fund (CIF), allowing the Children’s Cabinet to fulfill the role of statewide partner for DPIL by providing a 50% financial match to all local community programs in the state of Kansas. After the Children’s Cabinet increased the DPIL line item in the CIF budget in the summer of 2023, Kansas achieved statewide coverage, making every child in every zip code in Kansas, birth to age five, eligible to receive free DPIL books monthly.

The Children’s Cabinet has contracted with the University of Kansas Center for Public Partnership and Research (KU-CPPR) to investigate the reach and impact of DPIL in Kansas. This evaluation's main objective is to determine whether participation in the DPIL program correlates with improved child early learning outcomes. To do so, we have leveraged data collected through the evaluation of the Early Childhood Block Grant (ECBG) to create a dataset of children who (1) participated in both DPIL and ECBG or (2) participated in ECBG alone. This matched dataset allows us to understand the added benefit of participating in DPIL for children already exposed to high-quality early childhood programming, as well as identify opportunities to expand DPIL participation.

# Data and Methods

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The purpose of this evaluation is to investigate if the DPIL program in Kansas is reaching children who receive Early Childhood Block Grant (ECBG) funded services (services also funded through the CIF), and if participation in DPIL is correlated with improved child learning outcomes. The ECBG program is focused on at-risk children and their families, making it essential to understand whether additional programs like DPIL are effectively reaching this vulnerable population and assess the added value of the DPIL program in enhancing educational and developmental results for children already receiving ECBG services. Furthermore, ECBG programs collect extensive demographic data and outcomes data, enabling a more in-depth evaluation than could be facilitated by DPIL data alone. This initial exploratory study provides information on the program's reach among at-risk families receiving ECBG services and insights on program uptake and help inform subsequent outreach efforts.

## Research Questions

This evaluation is guided by the following research questions:

1. What is the distribution of DPIL enrollment across the state?
2. How do the characteristics of children participating in both DPIL and ECBG differ from those participating in ECBG alone?
3. Do children enrolled in DPIL demonstrate greater improvement in emerging literacy skills in preschool when compared to children who do not participate in the program?

## Research Design and Data Matching

The study employed a quasi-experimental research design to compare the effects of enrollment in DPIL on emerging literacy skills. As part of the ECBG evaluation, programs collect and report myIGDIs (Individual Growth and Development Indicators), which are assessments designed for preschoolers to track their progress towards kindergarten readiness<sup>1</sup>. A subset of this assessment battery is the Early Literacy tool that encompasses five subtests to assess a child's literacy and language skills, including *Picture Naming* for Vocabulary, *Rhyming and Alliteration* for Phonological Awareness, *Which One Doesn't Belong* for Comprehension, and *Sound Identification* for Alphabet Knowledge. This tool helps determine if children are achieving appropriate performance levels with standard instruction (Tier 1) or if they require more intensive instruction (Tier 2 or Tier 3) based on their performance.

Datasets used in this study include the book distribution records maintained by Dolly Parton Imagination Library and the records of children who receive services through programs funded by ECBG. A matching protocol was used within a restricted and secure KU hosting environment to link records in the ECBG and DPIL using descriptive statistics (name, gender, and birthdate) to create a matched dataset that KU-CPPR de-identified prior to analysis.

To ensure adherence to best practices in record linkage and disclosure risk mitigation<sup>2</sup>, the matching protocol involved a comprehensive multi-step process to de-duplicate and accurately match records across the two primary datasets. The methodology involved a systematic approach to identify duplicates and match records, wherein each case was assigned a matching score based on a uniform set of criteria. Key identifiers utilized in this process included first and last names, date of birth, and gender—both in their complete and partial forms. A crucial component of the analytical toolkit was the Soundex function, a phonetic algorithm that generates character codes to index names by their sound. This facilitated the assessment of similarities or near-similarities among the records, ensuring a robust matching process.

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1 Renaissance (2024). myIGDIs: Research-Proven Preschool Assessment.

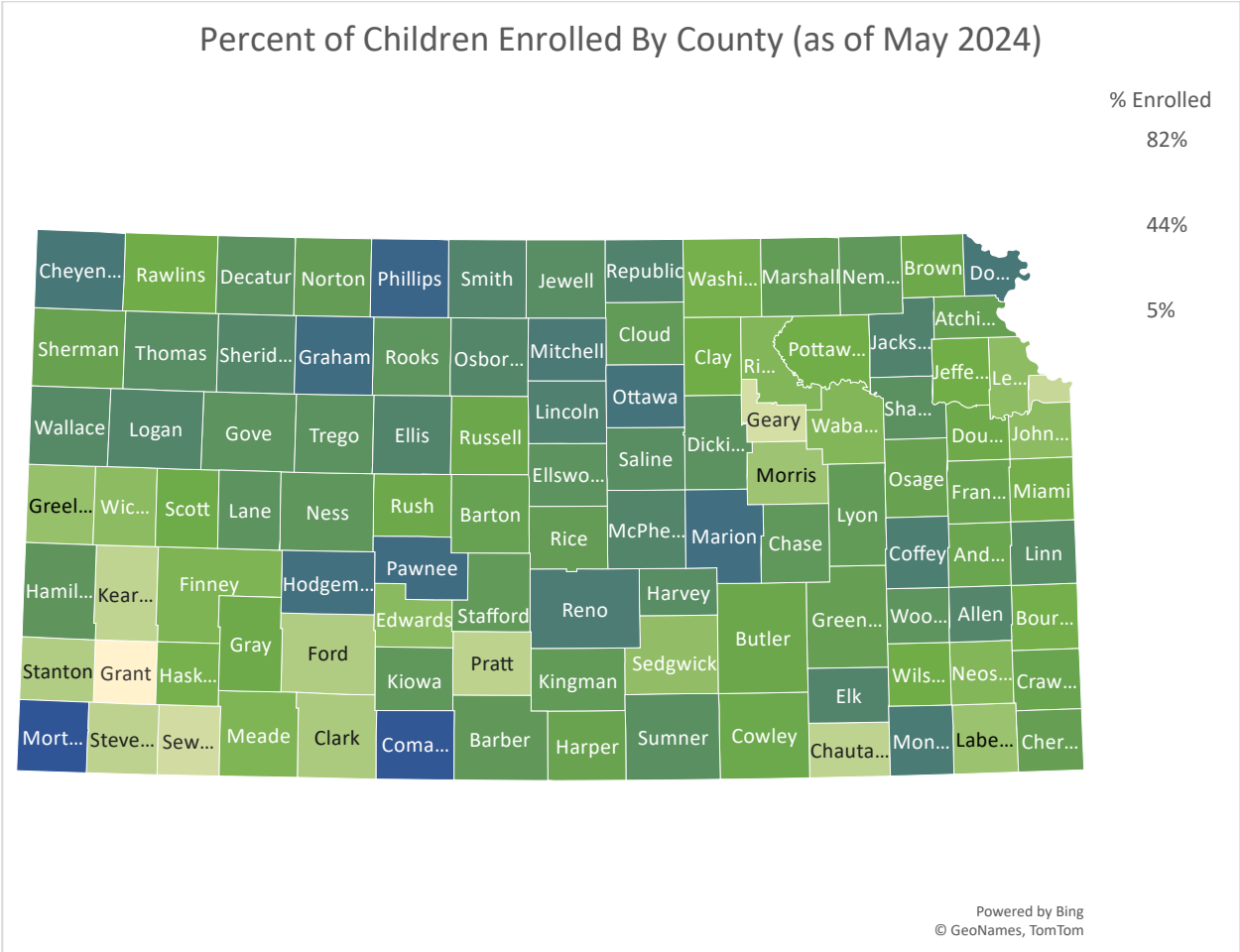
<https://www.renaissance.com/products/myigdis-for-preschool/>

2 Winkler, W. E. (2006), "Overview of Record Linkage and Current Research Directions," U.S. Bureau of the Census, Statistical Research Division Report <http://www.census.gov/srd/papers/pdf/rrs2006-02.pdf>

## Data Analysis

First, we conducted a geospatial analysis to map the distribution of DPIL participants across the state. This analysis identified counties with higher enrollment in DPIL, providing valuable insights into the program's reach and impact at the county level. Next, we undertook a comparative study of the characteristics of children in the ECBG and DPIL programs to identify differences between those enrolled in both programs and those only enrolled in ECBG. The ECBG data, which includes a wide range of demographic characteristics, allowed for a statistical comparison of children enrolled in DPIL versus those not enrolled. These characteristics included gender, race, ethnicity, primary language spoken at home, special needs status, insurance coverage, and poverty levels. Finally, the study compared the early literacy skills of children who participated in the DPIL program with those who did not, within the ECBG dataset. This comparison aimed to determine the impact of DPIL participation on enhancing children's early literacy skills. Several sets of logistic regression analyses were conducted to evaluate the association between DPIL participation, along with children's demographic and familial characteristics, and the likelihood of improvement in early literacy skills as measured by myIGDIs.

# DPIL Enrollment



## Enrollment

DPIL enrollment fluctuates due to the time of the month, when children age out, and when they get registered. Currently, 74,620 total children are enrolled in DPIL, which is 42% of the Total Eligible Population (TEP) of Kansas kids 0-5. Dolly Parton’s Imagination Library considers 65% enrollment of the TEP to be full coverage. This is an increase from 22% (~42,000) in 2021, when Kansas started expanding DPIL coverage. Kansas enrollment has remained constant at about 40% since Fall 2023. As of May 2024, 13 counties were at or above 65% enrollment with the highest being Morton County at 82%.

## Demographic Differences

Within the ECBG dataset, our analysis finds significant differences in demographic characteristics between children participating in DPIL and those who are not. The group of ECBG children

enrolled in DPIL includes a higher proportion of children with English as their primary language and a lower percentage of Spanish-speaking children than the group of ECBG children who are not enrolled in DPIL. Children enrolled in DPIL are more likely to be white (79%) compared to those receiving ECBG alone (69%). Furthermore, the DPIL group has a higher percentage of non-Hispanic children (78%) compared to the ECBG group (70%). 39% of children enrolled in both programs are privately insured, compared to 25% of children enrolled in ECBG alone. Likewise, 8% of children enrolled in ECBG only had no insurance, whereas just under 3% of children enrolled in both programs were not insured. Finally, the DPIL group includes more children with special needs, as measured by enrollment in Individualized Education Program (IEP) or Individualized Family Service Plan (IFSP) (21%, compared to 14% of ECBG alone), and disabilities as measured by participation in Part B or Part C services (21%, compared to 13% of ECBG alone). This suggests that the DPIL program is effectively reaching children with diverse healthcare and developmental needs.

## Early Literacy Skills

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For each early literacy skill domain, we included children who participated in the DPIL program for more than six months and were assessed at least twice after beginning the program. We considered the earliest assessment as the baseline and the last assessment as the follow-up. The average duration between baseline and follow-up assessments was 6.7 months for the DPIL group and 6.4 months for the ECBG/non-DPIL group.

### Regression Analysis of Literacy Outcomes

Regression analysis is a statistical method that examines the relationship between two or more variables of interest while controlling for other variables that may influence the outcome <sup>3</sup>, including family income, primary language, and other demographics.

Overall, participation in the DPIL program shows significant positive effects on children's early literacy skills, particularly in *Picture Naming* and *Alliteration*. DPIL participants are 23% more

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<sup>3</sup> Montgomery, D. C., Peck, E. A., & Vining, G. G. (2021). Introduction to linear regression analysis (6th ed.). Wiley.

likely to improve in *Picture Naming* and 39% more likely to advance in *Alliteration* compared to non-participants. However, the program's impact is not significant in *Rhyming*, *Sound Identification*, and *Which One Doesn't Belong*.

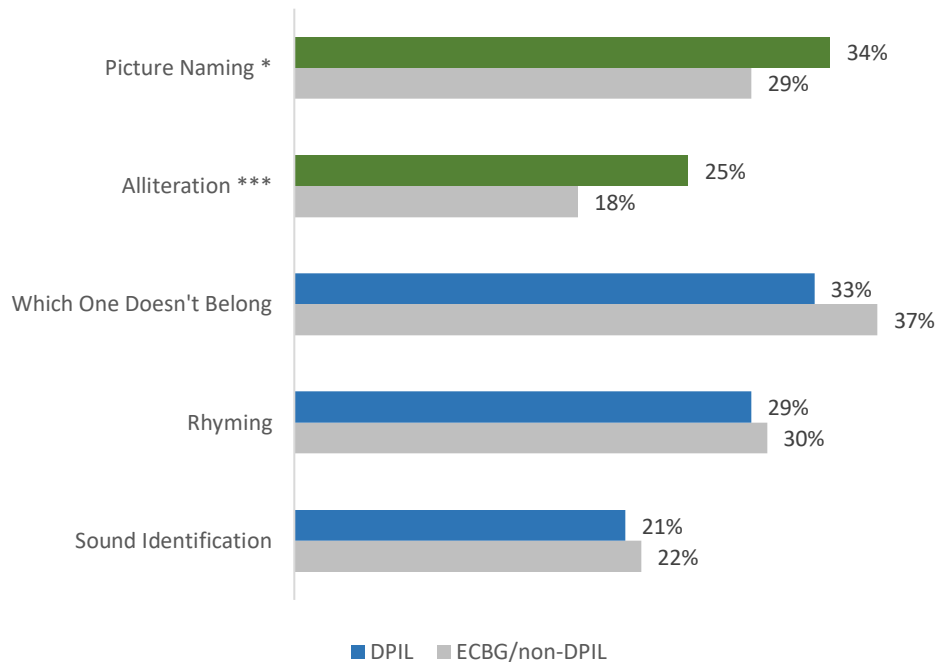


Fig 1: Probability of Children Showing Improvement in Early Literacy Skills from Baseline to Follow-up. Percentages shown in the chart represent the proportion of children in each group who demonstrated increased skill levels. Multiple logistic regressions were conducted to test for statistical significance. Data Source: DAISEY. N: ECBG/non-DPIL, 2492 to 3484; DPIL, 926 to 1282. \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

## Limitations

Out of the 114,534 unique children enrolled in the DPIL program, only 7,998 were also served by ECBG programs (about 7%). This overlap represents a subset of the total DPIL population and may not fully capture the diverse experiences and outcomes of all DPIL participants, especially considering the demographic differences between the ECBG and general population. While the research provides insights into the potential benefits of participating in both initiatives, it is important to recognize the limitations in drawing conclusions about the full scope and reach of these programs based solely on the overlapping population. Further research examining the



distinct effects and participant experiences of all DPIL participants would be valuable to gain a more comprehensive understanding.

A substantial body of research has established that early childhood development is critical for literacy in elementary school and throughout the life course. Further research should examine the association between DPIL participation on subsequent educational outcomes and literacy to identify longer-term impacts of the program.

# Recommendations

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Based on study findings, we propose the following recommendations to enhance the program's effectiveness and reach in Kansas:

## *1. Increase Outreach and Accessibility*

Focus efforts on high-population counties with low participation rates, including Sedgwick, Wyandotte, and Johnson counties. Implement targeted marketing campaigns, partnerships with local organizations, and community events to raise awareness and lower barriers to access the DPIL program.

## *2. Engage Diverse Communities*

Develop materials and outreach strategies that are culturally and linguistically appropriate to engage non-English speaking families and diverse racial and ethnic groups, particularly in areas with significant populations of Hispanic and African American children. The Kansas DPIL program will soon join the next cohort of states capable of providing parents with bilingual options on a monthly basis. This strategy is anticipated to enhance accessibility and inclusivity, thereby fostering greater parental engagement and support for early childhood education among diverse communities.

## *3. Enhance Program Support for Children with Special Needs*

Provide tailored resources and support for children with special needs, including those with Individualized Education Program (IEP) or an Individualized Family Service Plan (IFSP). Collaborate with special education professionals to ensure materials are inclusive and accessible.

## *4. Strengthen Partnerships with Healthcare Providers*

Strengthen partnerships with Medicaid and Tri-Care to ensure that families enrolled in these programs are aware of and can easily enroll in DPIL. Work with pediatricians and community clinics to distribute information about DPIL during routine visits, especially in areas with high rates of uninsured children.