DECISION 2024: YOUR VOICES, YOUR FUTURE



SEPTEMBER 2024

CHILDCARE The state of early care and education in Indiana

High-quality early care and education for children ages 0–5 is proven to have a meaningful impact on a child's success in school and beyond. Ninety percent of brain development occurs by age 5.¹ Infants and children learn from every interaction and activity. Everyone shares a collective responsibility to make sure interactions in childcare settings nurture, respond to needs, and optimize brain development and early learning. However, systemic barriers related to access, affordability, and program quality prevent children and their families from fully benefiting from early care and education opportunities when needed, ultimately limiting the multigenerational impact of a sturdy learning foundation.

Every day, Hoosier families face difficult decisions about out-of-home early care and education, inhibiting their ability to work or seek further education to improve their social mobility. At the same time, businesses and communities experience short-term economic impacts from the loss of worker productivity and turnover costs, as well as in the longer term being unable to realize the full potential of tomorrow's talent pipeline—today's youngest learners.

The past four years have represented a time of unprecedented focus on and investment in early childhood education. Unparalleled public spending has expanded affordability for vulnerable families and promoted the sustainability of supply through increased provider reimbursement rates. This investment—coupled with historically low unemployment rates that left employers seeking strategies to increase labor force participation resulted in a renewed appreciation for the value of childcare to a working economy. At the same time, the ever-present challenge of the shortfall in the number of early care workers threatens to erode the quality of early learning outcomes. While steps have been taken to address the complexity of operating within the system, greater opportunity exists to encourage new entrants to the childcare market and growth from existing providers.

Childcare presents a significant opportunity for children, families, businesses, and the broader community. The central question facing stakeholders responsible for the growth, maintenance, or regulation of early childhood education programs is how to ensure access to high-quality early care and learning opportunities for all children.

ACCESS TO QUALITY EARLY CARE AND LEARNING OPPORTUNITIES

In Indiana, there are 500,000 children ages 0-5,² all of whom can benefit from early care and learning opportunities. Moreover, as many as two-thirds of these children need access to early care and learning so their families can work.³

Many factors contribute to a family's ability to access early care and learning opportunities that meet their unique needs—such as cost, location, hours, and provider type (e.g., care within a home, religious-based setting, or center). A one-size-fits-all, supply-and-demand equation will not meet the unique childcare needs of all families.

The Early Learning Access Index^A captures these factors, moving beyond treating access solely in terms of uniform

A The Early Learning Access Index is the cornerstone of Early Learning Indiana's annual Closing the Gap report. First published in 2021, the index creates weighted scores for the state of early childhood education access for the state, counties, and census tracts. The index weights capacity and quality at 30% each and affordability and choice at 20% each. Adequate access is defined as a score of 80 or more, moderate access is defined as a score of 60–79, and inadequate access is defined as a score of less than 60. A full explanation of the methodology for the index is available in the appendix of Closing the Gap: An Assessment of Indiana's Early Learning Opportunities 2023 Update (2024).

supply and demand by layering in the additional components of quality, choice, and affordability. These factors provide a more robust picture of Hoosier families' ability to access early learning opportunities.

Indiana's 2023 Early Learning Access Index score is 63.5, at the lower end of moderate access to care and a slight increase from 60.6 in 2021. No counties currently meet the threshold for providing adequate access to care—as defined by a score greater than 80. However, the number of counties with moderate access has improved from 14 in 2021 to 28 in 2023 (Figure 1), and further actual and planned investments through Indiana's Employer-Sponsored Child Care Fund grants, community-led READI initiatives,^{B,4} and philanthropic support promise more access. A short discussion of each of the individual components follows.

CAPACITY

According to Early Learning Indiana's most recent Closing the Gap report, the state's capacity sufficiency rate is 61%, meaning that across Indiana slightly more than 6 out of every 10 children likely to need care can be served. As shown in Figure 2, capacity varies greatly statewide. Sixty-two percent of counties have capacity sufficiency under 50%, with some counties as low as 8%. Given the progress in recent years, some counties enjoy enough capacity to serve more children than may need care. However, the quality and affordability of care in these counties still present a barrier for local families.⁵



FIGURE 1. Changes in Indiana Early Learning Access Index by county-2021-23

Sources: Adapted from Early Learning Indiana (2024), using data from the U.S. Census Bureau, 2021 American Community Survey 5-year estimates; Indiana Family and Social Services Administration, Regulated Child Care System, 2023; Worklife Systems, Indiana, 2023; and Indiana Department of Education, INView, 2023.

B The Indiana READI Program is administered by the Indiana Economic Development Corporation. The program creates and provides funding to Indiana regions for the development of collaborative regional plans and projects that will attract, develop, and retain talent that can meet Indiana's current and future workforce needs. The second round of funding (READI 2.0) was awarded in April 2024. For more information, see https://www.iedc.in.gov/program/indiana-readi/overview

QUALITY

The limited number of seats available in high-quality programs magnifies capacity challenges. Throughout Indiana, nearly half (49%) of all early learning capacity qualifies as high quality—measured by a childcare provider's participation in the state of Indiana's quality rating and improvement system, Paths to QUALITY™. Yet, these providers can only serve 28% of young children in Indiana. The available high-quality capacity varies greatly at the local level, with more than one-quarter of counties able to serve only 10% of local children within high-quality programs.⁶

CHOICE

Families benefit from a variety of options to meet their children's unique needs. As families consider the learning environment best suited for their children, they evaluate numerous factors including educational philosophy, location, religious beliefs, and more. Indiana's "mixed delivery" early learning system honors family preferences, especially in urban centers enjoying higher supply overall. Yet, this is a hollow choice for many communities because the lack of overall capacity makes any available seat a leading candidate for families. Additionally, families with infants and toddlers or those looking for early care and education during a second or third shift will have fewer options than families seeking traditional prekindergarten services.⁷

AFFORDABILITY

The federal government recommends that childcare costs not exceed 7% of a family's income.^{8,9,10} Statewide, the average childcare cost—for one child—is just over \$8,000, or 10% of an average Hoosier family's annual income.^{11,12,13} Costs decrease with the age of the child (with infant care being the most expensive care) and increase with the quality rating of the provider because higher quality programs generally charge higher rates. In fact, the average annual cost of high-quality care for one infant child is \$12,000, comparable to a year of tuition at an Indiana college.¹⁴

FIGURE 2. Indiana's early care and learning capacity sufficiency by census tract–2023



Sources: Early Learning Indiana (2024), using data from the U.S. Census Bureau, 2021 American Community Survey 5-year estimates; Indiana Family and Social Services Administration, Regulated Child Care System, 2023; Worklife Systems, Indiana, 2023; and Indiana Department of Education, INView, 2023.

The Ball State University Center for Business and Economic Research (CBER) reported that an Indiana worker with two children in childcare and "a spouse who earns \$57,000 annually earns less than \$4.00 per hour in take-home pay after taxes and childcare costs." The CBER model indicates that this worker and parent of two young children would need to earn \$65,000 yearly to enjoy a boost of \$20,800 in annual income after paying taxes and childcare costs.¹⁵

The influx of federal pandemic-response funding created opportunities to address childcare affordability. For example, the state of Indiana's Build, Learn, Grow Scholarship Fund provided relief by connecting children of essential workers with quality care and learning opportunities. Tiered according to family income, the fund provided tuition assistance—ranging from 20% to 80% of tuition to working families not typically eligible for childcare subsidies. This \$81.6M investment benefited children in more than 21,000 essential worker households.¹⁶ As this and other pandemic-era investments wane, increasing costs put high-quality care further out of reach.

THE CHALLENGES FACING EARLY CARE AND EDUCATION PROVIDERS

Every day, childcare providers throughout the state are focused on what matters most—meeting the developmental needs of the children within their care. At the same time, those providers must manage the daily challenges of operating a sustainable business, including navigating a complex regulatory environment regarding licensing, safety, and funding.

Already operating on razor-thin margins, the pandemic further exacerbated the providers' challenges and shed new light on the true costs of providing care. The early care and education industry has balanced recent inflationary effects by setting tuition rates that more accurately reflect the true cost of providing care. Recognizing increased expenses and the historical underfunding of childcare, Indiana raised subsidy reimbursement rates in 2023 to better reflect providers' costs.

ATTRACTION AND RETENTION OF A QUALIFIED WORKFORCE

The attraction and retention of a qualified workforce presents the biggest challenge to providers, and the presence of effective professionals in the classroom is the single most important driver of early learning outcomes. A well-prepared early learning workforce is the cornerstone to achieving Indiana's goals for expanding access to early learning opportunities, while, most importantly, improving the quality of outcomes for both children and their families. While the pandemic compounded the issue, early learning providers have long suffered from inadequate staffing. According to an Indiana Business Research Center study conducted to investigate early childhood staffing trends between 2017 and 2021, this workforce has lost approximately 9% of its workers since its high-water mark in 2017.¹⁷ In September 2023 (the most recent available

data), 68% of regulated providers reported more than 2,000 vacant early educator positions.¹⁸ Moreover, the Indiana Department of Workforce Development estimates that Indiana will face an early care and education workforce shortfall of roughly 8,200 workers by 2030.¹⁹

Even pre-pandemic, early care and education providers struggled to recruit and retain an effective workforce capable of driving high-quality learning outcomes. The insufficient supply of qualified early childhood educators has its roots in historically inadequate compensation levels—the median wage of a childcare worker in Indiana is \$14.00/hour and \$16.28/hour for preschool teachers challenging working conditions, outdated educator preparation models, and outmoded workforce structures. Chronically high turnover amplifies the shortage, stretching providers to the limits of quality practice and diminishing the sustainability of an already fragile industry.²⁰ The recent Ball State CBER analysis estimates that "to increase the workforce by 10 percent would require a roughly 8 percent overall wage increase."²¹

Childcare providers, however, struggle to pay higher wages. In regions where women's average earnings are higher, the supply of childcare workers is also higher.²² When parents can earn enough to pay for childcare and increase their take-home pay, they generate demand for well-paid childcare. Without this effective demand, providers are unable to add staffing. When parents do not earn enough to pay what it costs to provide quality care, providers cannot hire additional staff.

State leaders have taken steps, both administratively and legislatively, to help address the workforce challenge. Two recent examples included making the high-value childcare workforce eligible for the state's Workforce Ready Grants that historically benefited high-demand, high-wage industries. Additionally, the Indiana General Assembly took the critical step in early 2024 of expanding eligibility for Child Care Development Fund and On My Way PreK vouchers to employees of childcare programs. Moving the eligibility requirements—from 150% of the federal poverty level to 85% of the state median income—also allowed more of the workforce to qualify for this assistance.

BENEFITS OF QUALITY EARLY CHILDCARE

Ninety percent of a child's learning capacity is developed by age 5.²³ The human brain's framework is in place by the second year of life,²⁴ and research shows that a child's experiences during that same period have a profound effect on their success later in life.²⁵ Without supportive, nurturing interactions and environments during this critical growth phase, the brain does not develop optimally, leading to disparities in long-term learning, behavioral competency, and health outcomes.²⁶

Building foundations for reading begins from early infancy by talking to infants, with direct eye contact, and engaging with them as they talk back. These interactions help babies learn language and understand facial expressions and their connection to emotions.^{27,28,29} Physical play and body movement develop muscles and stimulate brain development.^{30,31,32,33} Reading aloud—along with the use of board books that can withstand infant handling and mouthing—nurtures an interest in books and preliteracy skills. These skills include how to hold books, read language left to right, turn pages, and tell stories about what is happening in a book's pictures.^{34,35}

High-quality settings for children ages birth to age five with language-rich environments maximize brain development. This is accomplished by engaging children with developmentally appropriate activities across ages and stages.^{36,37,38} Such activities nurture literacy skills, quantitative reasoning, analytical skills, problem solving, behavioral management, and social and emotional competencies and prevent childhood obesity and negative adult health outcomes.^{39,40,41,42}

Stacking, sorting, and singing activities develop quantitative skills. Counting, songs, and games that include adding and taking away items support number skills and math concepts from very early ages.⁴³ Play with shape sorters, nesting cups and cubes, unit blocks, and measuring cups all develop early quantitative reasoning.⁴⁴ A planned, developmentally appropriate curriculum can engage children in all these activities.

To measure outcomes in Indiana, the National Institute for Early Education Research evaluated 206 early childhood programs between spring 2021 and summer 2022. Researchers found moderate-to-high quality emotional and behavioral support across all age groups in participating classrooms. However, like findings in other states, these classrooms scored low in language and instructional support, resulting in lower development levels in language and cognition for children ages 0–5. Based on these findings, there is a clear need for new investments designed to enhance early language and cognitive development, expand research-based curricula use, and increase educators' skills in facilitated learning and the application of new concepts, particularly in language development.⁴⁵

ECONOMIC BENEFITS OF EARLY CHILDCARE

Investments in quality early education and care yield strong returns. Research suggests that for every \$1 invested in high-quality early childhood programs, there is a \$4–\$16 return.^{46,47} High-quality early childhood education creates good jobs, increases employment, raises family earnings, improves productivity, lowers turnover and absentee costs for employers, and lays the foundation for tomorrow's quality workforce. Direct benefits lead to induced effects from the spending of higher-earning workers who purchase goods and services and increased demand for industries that supply goods and services to childcare providers.⁴⁸

Investments in childcare increase employment in the childcare sector. Quality care creates skilled jobs. It requires an educated workforce with significant training and ongoing professional development and a need to pay wages appropriate to that skill level.⁴⁹

Childcare increases earnings for working parents, childcare workers, and the children who will comprise the future workforce. Working parents with high-quality childcare are more likely to work, work more hours, and accept promotions.^{50,51}

FIGURE 3. Annual economic activity lost as the result of insufficient childcare in Indiana



Source: United States Chamber of Commerce Foundation, Early Learning Indiana, and Indiana Chamber of Commerce (Forthcoming).

Education and training for low-to-moderate-income workers may be important for economic mobility and financial stability. Low-to-middle-income families are most vulnerable to disruptions in work due to childcare. For example, of the 30% of parents pursuing workforce training or education, many report switching from full time to part time in those programs, being dropped from a class roster, or leaving a program due to childcare issues.⁵²

Children from low-income families who receive quality early education and care are more likely to finish high school, have higher earnings, and own a home. Conversely, they are less likely to receive social services or be arrested for a crime.⁵³

ECONOMIC COST OF INSUFFICIENT CARE

In March 2024, the U.S. Chamber of Commerce surveyed 609 parents of children under age 6 in Indiana. Based on findings from the survey and established impact modeling for the industry, the U.S. Chamber estimates, in its soon-to-be-released report, that insufficient childcare in Indiana leads to an estimated \$4.22 billion in lost economic activity annually, including

- \$1.17 billion in foregone tax revenue,
- \$2.14 billion cost to employers in employee turnover, and
- \$906 million cost to employers in employee absences.

The lack of quality early care and education creates an unstable workforce and increases absenteeism. Fifty-seven

percent of Indiana parents of young children missed work or class at least once in the past three months for childcarerelated reasons. Those workers report missing an average of 14 days annually.

Forty percent of parents who reported disruptions to their employment left the workforce as a direct result of childcare issues. In the past year, 42% of parenting students and trainees had to make a significant adjustment to their schedule due to childcare issues.

Childcare challenges hit low-income Hoosiers hardest, with 36% of low-income Indiana survey respondents indicating such disruptions in the past 12 months compared to 20% of high-income working parents. Of those surveyed, 11% of women and 12% of men said they planned to leave employment during the next 12 months for reasons related to childcare. Disruptions are more pronounced among low-and middle-income workers (13% each) than among high-income workers (8%).⁵⁴

Insufficient early care and education also increases the gender gap in pay, with single mothers bearing the brunt of this inequity. In Indiana, single-parent households headed by women with children under age 18 have a median income of \$32,861, compared to \$53,831 for similar households headed by men.⁵⁵

Lack of access to quality early care and education greatly impacts women workers' lifetime earnings and average income. Women are more likely to take time away from the labor force to care for young children. Those years, in terms of wage gains due to experience and time in position, cannot be replaced. Among all Indiana workers aged 25 and older in 2022, men had median earnings of \$55,045, compared to \$39,409 for women. While these figures suggest a persistent wage gap explained by more than childcare challenges, the gap between working parents and the adult population, as a whole, is considerably larger for women than for men, reflecting the wage penalty of motherhood.⁵⁶

The CBER study also examines the potential increase in women's labor force participation (in fields other than childcare) if the supply of childcare is expanded. CBER researchers estimate that adding 100 childcare workers to the typical Indiana economic growth region will lead to an increase of 2,300 women ages 35–44 in the workforce. For women ages 25–34, an increase of 100 childcare workers would boost labor force participation by an estimated 860 women.⁵⁷ Investments in childcare can have an immediate impact on the female workforce, the economic well-being of families, and lifetime pay equity for women.

POLICY RECOMMENDATIONS

Early childhood education plays a critical role in a community. It is essential for economic development an important ingredient of a thriving neighborhood—and has a multigenerational impact on the families it serves. Early education is vital in a two-generational approach to ending the cycle of poverty—focused on working with the whole family to create educational success and economic prosperity passed from one generation to the next.

Despite the undisputed benefits, the current childcare system is not optimized to meet the needs of young children, their families, or the communities in which they live. The state can strengthen Indiana's economy by increasing access to affordable high-quality early learning opportunities. Enrolling more young children in high-quality care today will improve Indiana's talent pipeline for decades to come. The recommendations below aim to build a more effective and sustainable early learning system.

EXPAND ACCESS TO HIGH-QUALITY EARLY LEARNING

To increase the supply of diverse childcare options for Hoosier families rural and urban, policy makers should streamline rules and regulations to simplify licensing across provider types. Today, licensing rules cross 10 sections of administrative code and vary by provider type requiring providers to navigate a redundant and complex regulatory system that leads many simply to opt out.

The Family and Social Services Administration and other stakeholders are working to create a consistent and streamlined set of standards and pilot new models, including micro-centers that create supply in areas lacking a critical mass of children. This re-regulation of the system must maintain the rules that matter most for the health and safety of our youngest learners while eliminating barriers that discourage new childcare providers from entering the market.

While re-regulation is necessary, it is unlikely sufficient to encourage the creation of supply in hard-toserve areas. The state should continue and expand the approach undertaken through the READI program, empowering communities to invest in childcare supply and quality improvement efforts based on local needs.

Re-regulation and supporting investment in quality improvements will increase the supply of quality birth-tofive care and education in ways that meet local needs.

FOCUS ON LEARNING OUTCOMES FOR KINDERGARTEN READINESS

Not all childcare services create equal gains. To build confidence that the state will enjoy the expected return on public investments in early learning services, Indiana should update its Paths to QUALITY™ rating system to focus on what matters most to child learning and development, including objective measures of adult-child interactions and the adoption of research-based curriculum aligned to Indiana's early learning standards.

GROW THE PURCHASING POWER OF YOUNG FAMILIES

Young families are burdened with childcare expenses at a stage of life when they are least equipped to manage them. The state should experiment with different types of family-centered assistance models including increasing the income eligibility threshold for existing public subsidies from 150% to 185% of the federal poverty level, instituting family-facing tax credits, and expanding Education Savings Accounts to cover childcare costs.

DEVELOP THE EARLY CARE WORKFORCE

Persistent workforce shortfalls and uneven expectations for the workforce itself threaten the viability of the early care and learning system. Job-embedded and competencybased teacher preparation models will prepare early learning workers who are confident in their ability to be successful in the classroom. Furthermore, for the benefit of educators and, equally important, for the families and children they serve, Indiana must transition from the existing patchwork of educator qualifications loosely tied to the developmental needs of children to a more modernized early educator framework built on essential health and safety licensing standards and a quality improvement approach that drives learning outcomes.

REFERENCES

- 1 Gilmore, J.H., Knickmeyer, R.C., & Gao, W. (2018). Imaging structural and functional brain development in early childhood. Nature Reviews Neuroscience, 19 (3), 123–137. DOI:10.1038/nrn.2018.1.
- 2 U.S. Census Bureau. (2023). Annual estimates of resident population by single-year of age and sex for Indiana—April 1, 2020–July 1, 2023. <u>https://www.census.gov/data/tables/time-series/demo/</u> <u>popest/2020s-state-detail.html</u>
- 3 U.S. Census Bureau. (2022). 2017–2021 American Community Survey—5-year estimates. https://www.census.gov/data/developers/data-sets/acs-5year.2021.html#list-tab-1806015614]
- 4 Indiana Economic Development Corporation. *READI Projects*. Retrieved July 31, 2024. <u>https://indianareadi.com/projects</u>
- 5 Early Learning Indiana. (2024). Closing the gap: *An assessment of Indiana's early learning opportunities 2023 update*. <u>https://earlylearningin.org/wp-content/uploads/2021/08/ELI_ClosingTheGap_Report_2023-</u> Update.pdf
- 6 Early Learning Indiana. (2024). *Closing the gap: An assessment of Indiana's early learning opportunities 2023* update. <u>https://earlylearningin.org/wp-content/uploads/2021/08/ELI_ClosingTheGap_Report_2023-Update.pdf</u>
- 7 Early Learning Indiana. (2024). Closing the gap: An assessment of Indiana's early learning opportunities 2023 update. <u>https://earlylearningin.org/wp-content/uploads/2021/08/ELI_ClosingTheGap_Report_2023-Update.pdf</u>
- 8 Landivar, L.C., Graf, N.L., & Rayo, G.A. (2023). Childcare prices in local areas: Initial findings from the National Database of Childcare Prices. U.S. Department of Labor. <u>https://www.dol.gov/sites/dolgov/files/WB/</u> NDCP/508 WB IssueBrief-NDCP-20230213.pdf
- 9 Federal Register. (2016, September 30). 81 FR 67515 (<u>https://www.govinfo.gov/content/pkg/FR-2016-09-30/pdf/2016-22986.pdf</u>)
- 10 Hardy, E. & Park, J.E. (2022). 2019 National Survey of Early Care and Education snapshot: Child care cost burden in U.S. households with children Under age 5. OPRE Report No. 2022-05. Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services. <u>https://www.acf.hhs.gov/opre/report/2019-nsece-snapshot-child-care-cost-burden-us-householdschildren-under-age-5</u>

- 11 Scott, E.K., Leymon, A.S., & Abelson M. (2011). Assessing the impact of Oregon's 2007 changes to child-care subsidy policy. University of Oregon. <u>https://health.oregonstate.edu/early-learners/research/assessing-</u> impacts-oregon%E2%80%99s-2007-changes-child-care-subsidy-policy
- 12 Grobe, D., Weber, R., Davis, E., & Scott, E. (2012). Struggling to pay the bills: Using mixed-methods to understand families' financial stress and child care costs. *Contemporary Perspectives in Family Research*. (6), 93–121. <u>https://health.oregonstate.edu/sites/health.oregonstate.edu/files/sbhs/pdf/struggling-to-pay-thebills-using-mixed-methods-to-understand-families-financial-stress-and-child-care-costs.pdf</u>
- 13 Morrissey, T.W. (2017). Child care and parent labor force participation: A review of the research literature. Review of Economics of the Household, 15 (1), 1–24. <u>https://link.springer.com/content/pdf/10.1007/s11150-016-9331-3.pdf</u>.
- 14 Early Learning Indiana. (2024). *Closing the gap: An assessment of Indiana's early learning opportunities 2023* update. <u>https://earlylearningin.org/wp-content/uploads/2021/08/ELI_ClosingTheGap_Report_2023-Update.pdf</u>
- 15 Faulk, D., Hicks, M., & Ponsier, M. (2024). *Child care and women's participation in the workforce: Estimates for Indiana*. (p.5). Ball State University Center for Business and Economic Research.
- 16 Office of Early Childhood & Out-of-School Learning. (2023). Supporting Indiana's early care & education system: COVID-19 federal funding report. Indiana Family and Social Services Administration. <u>https://www. in.gov/fssa/carefinder/files/OECOSL-EOYFundingReport2023.pdf</u>
- 17 Zipper, R., Kinghorn, M., Hotchkiss, B., & Rogers, C. (2022, September). Childcare workforce study. Indiana Business Research Center. <u>https://www.ibrc.indiana.edu/studies/Childcare-Workforce-Analysis-for-ELI.pdf</u>
- 18 Office of Early Childhood and Out-of-school Learning. (2023, September). Childcare provider data. Indiana Family and Social Services Administration.
- 19 Indiana Department of Workforce Development. (2019, October) EMSI Q4. In Indiana Early Learning Advisory Committee. (2020). 2020 annual report.23. Indiana Family and Social Services Administration. <u>https://iga.in.gov/publications/agency_report/2020-annual-report-early-learning-advisory-committee.pdf</u>
- 20 SOC code: Standard Occupational Classification code—see <u>http://www.bls.gov/soc/home.htm</u>; Extracted on June 25, 2024
- 21 Faulk, D., Hicks, M., & Ponsier, M. (2024). *Child care and women's participation in the workforce: Estimates for Indiana*. (p. 7). Ball State University Center for Business and Economic Research.
- 22 Faulk, D., Hicks, M., & Ponsier, M. (2024). *Child care and women's participation in the workforce: Estimates for Indiana*. (p.4). Ball State University Center for Business and Economic Research.
- 23 Center for the Developing Child. (2024a). *Brain architecture*. Harvard University. <u>https://developingchild.harvard.edu/science/key-concepts/brain-architecture/#neuron-footnote</u>
- 24 Gilmore, J.H., Knickmeyer, R.C., & Gao, W. (2018). Imaging structural and functional brain development in early childhood. Nature Reviews | Neuroscience, 19 (3), 123–137. DOI:10.1038/nrn.2018.1.
- 25 Shonkoff, J.P., & Phillips, D. (2000) *From Neurons to neighborhoods: The science of early childhood development*. National Academy Press.
- 26 Center for the Developing Child. (2024b). *Serve and return*. Harvard University. <u>https://developingchild</u>. <u>harvard.edu/science/key-concepts/serve-and-return/</u>

- 27 Center for the Developing Child. (2024b). *Serve and return*. Harvard University. <u>https://developingchild</u>. <u>harvard.edu/science/key-concepts/serve-and-return/</u>
- 28 Shonkoff, J.P., & Phillips, D. (2000) *From Neurons to neighborhoods: The science of early childhood development*. National Academy Press.
- 29 National Scientific Council on the Developing Child. (2004). Young children develop in an environment of relationships: Working Paper No. 1. Retrieved from <u>www.developingchild.harvard.edu</u>
- 30 Nan, Z., Ayyub, M., Sun, H., Wen, X., Xiang, P., & Gao, Z. (2017, December 13). Effects of physical activity on motor skills and cognitive development in early childhood: A systematic review. *BioMed Research International*. https://doi.org/10.1155/2017/2760716.
- 31 Hillman, C.H. & Biggan, J.R. (2017). A review of childhood physical activity, brain, and cognition: Perspectives on the future. *Human Kinetics Journal*, 29(2), 170–176. <u>https://doi.org/10.1123/pes.2016-0125</u>
- 32 Eichner-Seitz, N., Pate, R., , & Paul, I. (2023, May 23). Physical activity in infancy and early childhood: A narrative review of interventions for prevention of obesity and associated health outcomes. *Frontiers in Endocrinology*, 14 (May). <u>https://doi.org/10.3389/fendo.2023.1155925</u>
- 33 World Health Organization. (2019). *Guidelines on physical activity, sedentary behaviour and sleep for children under 5 years of age*. <u>https://www.who.int/publications/i/item/9789241550536</u>
- 34 Wang, Y. (2019). Chapter 14: Emergent reading and brain development. In Farland-Smith, D. (Ed.), Early childhood education. (pp. 223–236). Intechopen Limited. DOI: 10.5772/intechopen.82423
- 35 DeWitt, M.W. & Lessing, A.C.. (2017, May 25). The deconstruction and understanding of pre-literacy development and reading acquisition. *Early Child Development and Care*, 188(12). <u>https://doi.org/10.1080/03</u> 004430.2017.1329727
- 36 World Health Organization. (2019). *Guidelines on physical activity, sedentary behaviour and sleep for children under 5 years of age*. <u>https://www.who.int/publications/i/item/9789241550536</u>
- 37 Ruel, M., & Hoddinott, J. (2008). Investing in early childhood nutrition: Policy Brief 8. International Food Policy Research Institute as published in AgEcon Search. <u>https://ageconsearch.umn.edu/record/48929</u>
- 38 Benjamin-Neelon, S.E. (2018, July). Position of the Academy of Nutrition and Dietetics: Benchmarks for nutrition in child care. *Journal of the Academy of Nutrition and Dietetics*, 118(7), 1291–1300.
- 39 Chandry, A. Morrissey, T., Weiland, C., & Yoshikawa, H. (2017). *Cradle to kindergarten: A new plan to combat inequality*. (pp.42–43). Russell Sage Foundation.
- 40 World Health Organization. (2019). *Guidelines on physical activity, sedentary behaviour and sleep for children under 5 years of age*. <u>https://www.who.int/publications/i/item/9789241550536</u>
- 41 Ruel, M., & Hoddinott, J. (2008). Investing in early childhood nutrition: Policy Brief 8. International Food Policy Research Institute as published in *AgEcon Search*. <u>https://ageconsearch.umn.edu/record/48929</u>
- 42 Benjamin-Neelon, S.E. (2018, July). Position of the Academy of Nutrition and Dietetics: Benchmarks for nutrition in child care. *Journal of the Academy of Nutrition and Dietetics*, 118(7), 1291–1300.
- 43 Geist, E. (2024). *Support math readiness through music*. National Association for the Education of Young Children. <u>www.naeyc.org/our-work/families/support-math-readiness-through-music</u>

- 44 National Association for the Education of Young Children. (2024). *Math talk with infants and toddlers*. <u>https://www.naeyc.org/our-work/families/math-talk-infants-and-toddlers</u> Note: see links from this page to wide range of activities that build quantitative reasoning skills including, shape sorting, measuring, stacking, etc
- 45 Nores, M., Harmeyer, E., Connors-Tadros, L., Li, Z. & Contreras, C. (2023). Evaluation of early childhood programs & development in Indiana—Second report. National Institute for Early Education Research.
- 46 Rolnick, A. (2014a). *Investing in early childhood development is smart economic development*. Wisconsin Family Impact Seminars. <u>https://evidence2impact.psu.edu/wp-content/uploads/2023/05/s_wifis32c01.pdf</u>.
- 47 Rolnick, A. (2014b). *Investing in early childhood development is smart economic development: The science of early brain Development*. Wisconsin Family Impact Seminars. <u>https://evidence2impact.psu.edu/wp-content/uploads/2023/12/FIS32RolnickBrief2_723.pdf</u>
- 48 United States Chamber of Commerce Foundation, Early Learning Indiana, & Indiana Chamber of Commerce. (Forthcoming). Untapped potential in IN: How childcare Impacts Indiana's workforce productivity and the state's economy
- 49 Warner, M. (2009). Overview: the regional economics of child care. *Journal of Regional Analysis and Policy*, 39(1), 37–39
- 50 Morrissey, T.W. (2017). Child care and parent labor force participation: a review of the research literature. *Review of Economics of the Household*, 15, 1–24. <u>https://doi.org/10.1007/s11150-016-9331-3</u>.
- 51 Chaudry, A., Morrissey, T., Weiland, C., & Yoshikawa, H. (2021). *Cradle to Kindergarten: A New Plan to Combat Inequality* (2nd ed.). Russell Sage Foundation.
- 52 United States Chamber of Commerce Foundation, Early Learning Indiana, and the Indiana Chamber of Commerce (Forthcoming). Untapped potential in IN: How childcare Impacts Indiana's workforce productivity and the state's economy.
- 53 Schweinhart, L.J., & Weikart, D.P. (2008). The High/Scope Perry Preschool Study: Implications for early childhood care and education. *Prevention in Human Services*, 7(1), 109–32.
- 54 United States Chamber of Commerce Foundation, Early Learning Indiana, & Indiana Chamber of Commerce. (Forthcoming). Untapped potential in IN: How childcare Impacts Indiana's workforce productivity and the state's economy.
- 55 U.S. Census Bureau. (2022). Median income in the past 12 months in 2022 inflation-adjusted dollars. American Community Survey, 1-Year estimates subject tables, Table S1903. <u>https://data.census.gov/table/ACSST1Y2022.S1903?q=Income%20(Households,%20Families,%20Individuals</u>)
- 56 Budig, M.J., & England, P. (2001). The wage penalty for mothers. *American Sociological Review, 66 (April)*, 204–225.
- 57 Faulk, D., Hicks, M., & Ponsier, M. (2024). *Child care and women's participation in the workforce: Estimates for Indiana*. (p.4). Ball State University Center for Business and Economic Research.

UINDIANA UNIVERSITY **PUBLIC POLICY INSTITUTE**

The IU Public Policy Institute delivers unbiased research and data-driven, objective, expert policy analysis to help public, private, and nonprofit sectors make important decisions that impact quality of life in Indiana and throughout the nation. As a multidisciplinary institute within the Paul H. O'Neill School of Public and Environmental Affairs, we also support the Center for Civic Literacy (CCL), Center for Health & Justice Research (CHJR), the Center for Research on Inclusion & Social Policy (CRISP), and the Manufacturing Policy Initiative (MPI).

AUTHORS

Jonathan Dilley, Early Learning Indiana Melissa Fry, Ph.D., Applied Research and Education Center, Indiana University Southeast

PREPARED BY

Elizabeth Thuranira, Program Analyst Jamie Palmer, Senior Policy Analyst Elizabeth J. Van Allen, Technical Writer Claire Menard, Graphic Designer Emanuel Vargas, Research Assistant



719 Indiana Avenue, Suite 302 Indianapolis, IN 46202

Phone: (317) 278-1305 Email: iuppi@iu.edu policyinstitute.iu.edu

Follow us on X @IUPublicPolicy

LinkedIn Indiana University Public Policy Institute

Watch what 2024 gubernatorial candidates say about childcare go.iu.edu/forum2024childcare

