



What the 'fadeout' effect really means for quality early learning

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Some studies suggest academic gains from high-quality early learning experiences diminish over time.

In reality, the full weight of evidence shows otherwise.

Sustained, high-quality early learning opportunities throughout children's earliest years can narrow the achievement gap and set them on the path to ongoing success in school and beyond.

Key Points

- Some studies of specific early childhood programs suggest the cognitive and academic benefits of these experiences “disappear” by grade 3. These studies tend to focus on programs targeting children one or two years immediately before they enter kindergarten.
- The positive effects of quality early learning experiences are cumulative. Sustained educational supports throughout children's early development are necessary for persistent gains.
- Improving the quality of elementary education settings and aligning K-12 systems with pre-kindergarten experiences can yield more enduring benefits from early learning opportunities.

1. Common misconceptions about the 'fadeout' effect

High-quality early learning experiences are a recognized strategy for closing the achievement gap that separates children who face significant obstacles to their cognitive, social and emotional development from their peers. This gap is often apparent before kindergarten entry and generally widens as children proceed through the K-12 system.

Credible evidence not only indicates quality early learning experiences reduce the achievement gap, but shows these gains persist. The result is fewer special education placements, decreased grade retentions and increased graduation rates.¹

Despite the body of evidence supporting these conclusions, other studies argue the cognitive and academic gains from early learning experiences disappear by third grade or sooner.² This phenomenon, known as the “fadeout” effect, is often used to question the overall value of public investments in early learning.

These studies, however, focus narrowly on specific programs and outcomes without considering the full scope of children's early developmental needs over time. Recent interpretations of this research implicitly assume that a single preschool program or learning environment should be able to act as a magic bullet against the broad range of developmental and educational obstacles children may encounter throughout their earliest years. This reveals an essential misconception about how young children learn and develop.

Accurately defining and addressing the “fadeout” effect requires a more realistic and comprehensive understanding of children's educational and developmental trajectories.

2. Quality early experiences matter

Quality is the common denominator in programs that demonstrate developmental gains in young children. There is a vast difference between early childhood programs that meet minimum standards for basic health and safety, and those intentionally designed to promote socioemotional growth, learning habits and skill formation.³

Unless children are consistently exposed to stimulating, emotionally supportive learning environments, they are unlikely to realize significant benefits in either the short or long term.

This raises an important question—what makes the difference between interventions that result in “fadeout” and those that successfully yield lasting gains?

3. Longer exposure to quality offsets ‘fadeout’

The amount of time children spend in quality early learning environments is an important factor in the benefits those experiences produce. In most studies where “fadeout” was observed, the specific interventions typically occurred only in the year or two immediately prior to school entry.

Brain development in the first three years of life is crucially important to the emergence of skills and competencies that drive ongoing success in and beyond the classroom. Without developmental advantages in the earliest years to build upon, it is improbable that children will realize the full benefits of preschool programs at ages 3 or 4, no matter how high the quality of those programs may be.

Early learning experiences should be tailored to children’s individual needs. They must also be of sufficient duration to offset the developmental challenges children face.

4. Aligning pre- and post-kindergarten experiences consolidates early learning

Children’s academic trajectories are affected by their learning experiences both before *and* after kindergarten entry, as well as the transition between the two. Pre-kindergarten environments and elementary education have historically been seen as separate systems. This has made it difficult for them to collaborate to ensure a more uniform transition into kindergarten and approach the first eight years of life as a continuous period of early learning.

Research has suggested that the “fadeout” effect is, in fact, more of a “fade up” phenomenon—the result of other students catching up with their peers who had the benefit

of participating in quality early learning programs.⁴ The absence of an aligned curriculum and teaching practice on either side of kindergarten entry sets the stage for these kinds of effects to occur. To avoid these problems, it is essential that we design education policies to make it easier for early childhood providers, elementary teachers and administrators to work together on meeting children’s distinct early learning needs.

5. Conclusion

Nebraska policymakers are trusted to make difficult decisions about where to allocate resources for the greater good of the state and its citizens. Evidence of the “fadeout” effect can therefore seem to offer reasons for rethinking our state’s ongoing commitment to quality early learning. This is why it is imperative that policymakers fully and objectively understand the evidence supporting the documented benefits of preparing young children for success in school and life.

Scientific research shows sufficient exposure to quality early learning opportunities results in greater educational achievement, higher adult wages, better health outcomes and reductions in violent crime, arrests and unemployment.⁵ As a key strategy for growing a well-educated, socially competent citizenry, these investments offer a critical pathway for Nebraska’s ongoing civic and economic development.

¹ McCoy, D. C., Yoshikawa, H., Ziol-Guest, K. M., Duncan, G. J., Schindler, H. S., Magnuson, K., ... & Shonkoff, J. P. (2017). Impacts of early childhood education on medium-and long-term educational outcomes. *Educational Researcher*, 46(8), 474-487.

² Bailey, D., Duncan, G. J., Odgers, C. L., & Yu, W. (2017). Persistence and fadeout in the impacts of child and adolescent interventions. *Journal of Research on Educational Effectiveness*, 10(1), 7-39.

³ Camilli, G., Vargas, S., Ryan, S., & Barnett, W. S. (2010). Meta-analysis of the effects of early education interventions on cognitive and social development. *Teachers college record*, 112(3), 579-620.

⁴ Engel, M., Claessens, A., & Finch, M. A. (2013). Teaching students what they already know? The (mis) alignment between mathematics instructional content and student knowledge in kindergarten. *Educational Evaluation and Policy Analysis*, 35(2), 157-178.

⁵ Karoly, L. A., Kilburn, M. R., & Cannon, J. S. (2006). *Early childhood interventions: Proven results, future promise*. Rand Corporation.

