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# 25

## Project Giant Step

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by Douglas J. Besharov, Peter Germans, Caeli A. Higney, and Douglas M. Call

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## 25

# Project Giant Step

Project Giant Step, operating in New York City between 1986 and 1990, was New York City mayor Ed Koch's "bold attempt to institute a universal program that will provide comprehensive services to all four-year-olds in New York beginning with those low-income children and their families in New York City who are unserved by existing programs."<sup>1</sup> The program, however, was suspended after its fourth year of operation, before it could be expanded beyond its initial phase. Despite being short-lived, Project Giant Step is included in this document because of its innovative methodology.

Jean Layzer, Barbara Goodson, and Judith Layzer, researchers at Abt Associates ("the Abt team"), compared the test scores of samples of children in Giant Step from the 1987-1988 and 1988-1989 school years to the expected test scores of the children (based on the children's pre-test scores) if they had not participated in the program. They found that children who attended Project Giant Step made significant cognitive gains—about twice what would have been expected as part of normal development. Giant Step children also showed improvements in their ability to work with adults and other children and to organize, manage, and complete classroom tasks. Additionally, the program positively affected parents' attitudes towards child rearing and child development. While promising, these findings need to be regarded with a degree of caution due to the absence of a random assignment design, the unvalidated testing instruments that were used for the children's social and behavioral assessment, and high rates of attrition in the second cohort of children. In addition, the proposed evaluation to follow the children through kindergarten and first grade was cancelled and no attempt has been made to assess the long-term impacts of the program.

### Program Design

**Program group.** The first phase of Project Giant Step targeted four-year-old children from families in the poorest areas of New York City, especially those "who were likely to be at greatest educational risk and who were unserved by other programs."<sup>2</sup> Parents were made aware of the program through flyers, posters, media announcements, and referrals from public agencies

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<sup>1</sup>Jean I. Layzer, Barbara D. Goodson, and Judith A. Layzer, *Evaluation of Project Giant Step, Year Two Report: The Study of Program Effects, Executive Summary* (Cambridge, MA: Abt Associates, Inc., 1990), 2.

<sup>2</sup>Layzer, Goodson, and Layzer, 1990, 12.

or religious institutions.<sup>3</sup> Funding was available for about 8,000 children in the 1987-1988 school year and for about 10,000 children in the 1988-1989 school year.<sup>4</sup> However, the program operated at less than capacity; the Abt team estimates that the average capacity utilization of Project Giant Step classrooms was 91 percent in the 1987-1988 school year.<sup>5</sup> Actual average daily attendance was lower for all Giant Step classrooms (73 percent) than the actual average daily attendance in other New York City half-day prekindergarten programs (77 percent).<sup>6</sup>

Almost two-thirds of the children enrolled in Giant Step lived in families with incomes below the poverty line. Half of the families included in the sample had two parents and another 25 percent had other adults living in the home. No data on race or ethnicity are provided. The average age of children in Giant Step was 4.3, with ages ranging from 3.9 to 4.8.

**Services.** Project Giant Step was a half-day, comprehensive program for four-year-olds and their families. The program was offered in selected public schools, day care centers, and Head Start programs in New York City. Two city agencies—the New York City Board of Education (BOE) and the Agency for Child Development (ACD)—worked in collaboration to administer the program.

Children spent three hours in the classroom (either in the morning or afternoon), five days per week, nine months per year. The curriculum covered children’s social, emotional, physical, and cognitive development, as well as health and nutrition. The program was widely praised for its high quality curriculum that “embraced diversity, promoted nurturing and was built upon solid early childhood development and education principles.”<sup>7</sup> Children spent the majority of their time engaged in experiential activities (including “block play, arts and crafts, puzzles and games,

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<sup>3</sup>New York City Public Schools, Office of Research, Evaluation, and Assessment, *Project Giant Step Chapter I program: 1987-1988* (New York: New York City Public Schools, 1989).

<sup>4</sup>Frederic B. Glantz, Barbara D. Goodson, and Jean I. Layzer, “Cost-effectiveness of Early Childhood Program Low Income Children: Findings from the Evaluation of Project Giant Step” (paper, annual conference of the National Association for the Education of Young Children, Denver, CO, November 9, 1991).

<sup>5</sup>Frederic B. Glantz, Barbara D. Goodson, and Jean I. Layzer, “Cost-effectiveness of Early Childhood Program Low Income Children: Findings from the Evaluation of Project Giant Step” (paper, annual conference of the National Association for the Education of Young Children, Denver, CO, November 9, 1991).

<sup>6</sup>New York City Public Schools, Office of Research, Evaluation, and Assessment, *Project Giant Step Chapter I program: 1987-1988* (New York: New York City Public Schools, 1989).

<sup>7</sup>Shirley Gatenio, “Taking a Giant Step: A Case Study of New York City’s Efforts To Implement Universal Pre-Kindergarten Services,” (working paper, Foundation for Child Development, New York, April 2002), 23.

sand/water play and dramatic play”)<sup>8</sup> and only a relatively small amount of time (about 10 percent) was devoted to instruction of specific academic skills.

Project Giant Step also placed a strong emphasis on parental involvement, assigning one full-time staff member to each classroom to work with parents. These “family assistants” conducted workshops for parents, performed home visits, and referred parents to other community resources. In addition to the family assistants, about 75 percent of all Giant Step classrooms had a social worker and psychologist available to parents.<sup>9</sup>

**The Evaluation.** The evaluation was a three year study to assess the impacts and cost-effectiveness of Project Giant Step. The first two years consisted of examining the impact of Giant Step on samples of children from the 1987-1988 (cohort I) and 1988-1989 (cohort II) school years. The third year consisted of a cost-effectiveness analysis based on the 1987-1988 cohort. An additional proposed assessment of the two cohorts in kindergarten and first grade was never performed.<sup>10</sup> Classes and children within the classes were randomly selected to participate in the evaluation; the sample from cohort I consisted of 454 children and cohort II consisted of 585 children. Both groups were tested in the fall, before the program began, and in the spring, after an average of about six months of participation.

The Abt team did not use random assignment or create a comparison group for the two cohorts; rather, the impact of the program is assessed by comparing the gains made by Giant Step children over the course of the program year to what would be expected on the basis of their development alone. To determine what would be expected on the basis of development alone, the Abt team constructed developmental norms for the Giant Step children using their own pretest scores. Because the ages of the children varied, the Abt team used the pre-test scores of the older children to determine the expected performance of the younger children. Based on the distribution of pre-test scores that developed, the Abt team then projected the expected performance scores for the older children.<sup>11</sup>

## Major Findings

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<sup>8</sup>New York City Public Schools, Office of Research, Evaluation, and Assessment, *Project Giant Step Chapter I program: 1987-1988* (New York: New York Public Schools, 1989), 32.

<sup>9</sup>New York City Public Schools, Office of Research, Evaluation, and Assessment, *Project Giant Step Chapter I program: 1987-1988* (New York: New York Public Schools, 1989).

<sup>10</sup>Jean I. Layzer, Barbara D. Goodson, and Judith A. Layzer, *Evaluation of Project Giant Step, Year Two Report: The Study of Program Effects* (Cambridge, MA: Abt Associates, Inc., June 1990), 6.

<sup>11</sup>Jean I. Layzer and Barbara D. Goodson, Abt Associates, e-mail message to Douglas Call, March 20, 2008.

The Abt team found that children who attended Project Giant Step made significant cognitive gains—from 0.45 items gained per month on the PSI to 0.94 items gained per month, more than twice what would have been expected as part of normal development.<sup>12</sup> Giant Step children also showed improvements in their ability to work with adults and other children and to organize, manage, and complete classroom tasks. Additionally, the program positively affected parents' attitudes towards child rearing and child development.

**Cognitive.** Gains in children's cognitive achievement were measured by comparing fall (pretest) and spring (post-test) scores on the Preschool Inventory (PSI), an instrument designed to measure educational skills traditionally expected of middle-class kindergarten children. The test score was defined as the number of items answered correctly by the child, out of thirty-two total items. Giant Step children gained an average of about one item per month on the PSI.

To assess how these gains compared to the gains that the children would be expected to make if they had not participated in the program, the Abt team constructed developmental norms for the PSI, using the pretest scores of the Giant Step children. According to these constructed norms, Giant Step children could be expected to gain 0.45 items per month on the PSI, as a part of their normal development. The Abt team reported that the overall average gain was 0.94 items per month, or more than twice what could be expected based on normal development. The overall effect size of the gains was 0.85 SD, with slightly larger gains in cohort II (0.88 SD) than in cohort I (0.82 SD). Using Jacob Cohen's widely accepted guidelines for effect sizes (small=0.20 SD, medium=0.50 SD, and large=0.80 SD),<sup>13</sup> these findings can be considered large gains. (See Appendix 1 for a further discussion of effect sizes and their interpretation.)

Substantial variation in PSI scores was found across different Giant Step sites, but the Abt team notes that "averages for individual programs were within one standard deviation of the group average."<sup>14</sup> Additionally, there was a statistically significant difference in the effect size of the number of items gained per month for children in the ACD programs (0.94 SD) versus those in the BOE programs (0.78 SD).

**School readiness/performance.** Relevant tests apparently not administered or results not reported.

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<sup>12</sup>Jean I. Layzer, Barbara D. Goodson, and Judith A. Layzer, *Evaluation of Project Giant Step, Year Two Report: The Study of Program Effects* (Cambridge, MA: Abt Associates, Inc., June 1990), 3.

<sup>13</sup>Jacob Cohen, *Statistical Power Analysis for the Behavioral Sciences* (Hillsdale, NJ: Lawrence Erlbaum, 1988), 535.

<sup>14</sup>Jean I. Layzer, Barbara D. Goodson, and Judith A. Layzer, *Evaluation of Project Giant Step, Year Two Report: The Study of Program Effects* (Cambridge, MA: Abt Associates, Inc., June 1990), 25.

**Socioemotional development.** Giant Step children’s social and emotional functioning was measured using the Child Behavior Rating Scale (CBRS), an instrument developed specifically for the Giant Step evaluation. The CBRS rates children on their social skills with peers and adults and their ability to organize, manage, and complete classroom tasks. As with the PSI, the Abt team compared the post-test scores of the children with constructed developmental norms based on the children’s pre-test scores. Giant Step children had overall gains that were higher than the constructed developmental norms with an effect size of 0.33 SD. The children showed gains in all three individual areas measured: social skills with peers, social skills with adults, and task behavior, with the largest gains being found on the task behavior rating (a gain of 0.41 SD and 0.37 SD, for cohorts I and II, respectively).

**Health.** Relevant tests apparently not administered or results not reported.

**Behavior.** Relevant tests apparently not administered or results not reported.

**Crime/delinquency.** Relevant tests apparently not administered or results not reported.

**Early/nonmarital births.** Relevant tests apparently not administered or results not reported.

**Economic outcomes.** Relevant tests apparently not administered or results not reported.

**Effects on parents.** The evaluation sought to measure changes in parenting behavior, their attitudes towards and expectations of their children, as well as their satisfaction with the program and its services. The Parent As a Teacher Inventory (PAAT) measures parents’ child rearing attitudes and practices. Comparing pretest and post-test scores for cohort one parents, there was a small, statistically significant increase in the overall PAAT score. The post-test PAAT was not administered to cohort II, so the gain could not be assessed. Generally, parent expectations for their children were high at the outset of the program—85 percent of parents expected their child to do well or very well in school—so there was not much room for change in this measure. A year later, over 90 percent of these parents expected their child to do well or very well in school.

**Benefit-cost findings.** Project Giant Step cost approximately \$3,900 per child in the 1987-1988 school year (in 2005 dollars).<sup>15</sup> Cost estimates are not available for the 1988-1989 school year. There was large variation in the expenditures per student between the ACD and BOE sites. According to the Abt team, “Across the ACD sites, average annual expenditures per child

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<sup>15</sup>Shirley Gatenio, “Taking a Giant Step: A Case Study of New York City’s Efforts To Implement Universal Pre-Kindergarten Services” (working paper, Foundation for Child Development, New York, April 2002), 24.

enrolled were nearly double the average across the BOE sites” (\$5,044 vs. 2,871).<sup>16</sup> When calculated using the average annual cost per child-hour, Giant Step sites spent \$7.68 per child hour enrolled. ACD sites spent an average of \$9.92 per child hour and BOE sites spent an average of \$5.62. The Abt team mentions that the average annual cost per child hour for Giant Step is much higher than for high quality child care (about \$3.71 an hour) but lower than for New York City Head Start offices (about \$8.46 an hour).

In addition, the Abt team also calculated a cost-effectiveness ratio for the ACD and BOE sites, dividing the average monthly gain on the PSI by the cost per child hour. Overall, the average CE ratio was 0.22, but this was actually higher in BOE sites (0.24) than in ACD sites (0.20). The Abt team concluded that “substantial cognitive gains made by Project Giant Step children were achieved at a substantial cost.”<sup>17</sup>

## Overall Assessment

**Program theory.** Project Giant Step was based on the “body of evidence that well-structured, comprehensive preschool programs can have a major effect on the school achievement of children from low-income families.”<sup>18</sup> It was also believed that a high-quality preschool program could “help ameliorate the effects of the City’s escalating poverty rates and could provide needed socialization and school readiness services to the children of the growing minority and immigrant populations in the City.”<sup>19</sup>

**Program implementation.** The Abt team does not discuss Project Giant Step’s implementation. Other reports, however, note that there were several initial difficulties in getting the program off the ground. There was some conflict between the two agencies, ACD and BOE, responsible for administering the program.<sup>20</sup> For instance, salary inequities between ACD and

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<sup>16</sup>Frederic B. Glantz, Barbara D. Goodson, and Jean I. Layzer, “Cost-effectiveness of Early Childhood Program Low Income Children: Findings from the Evaluation of Project Giant Step” (paper, annual conference of the National Association for the Education of Young Children, Denver, CO, November 9, 1991), 21.

<sup>17</sup>Frederic B. Glantz, Barbara D. Goodson, and Jean I. Layzer, “Cost-effectiveness of Early Childhood Program Low Income Children: Findings from the Evaluation of Project Giant Step” (paper, annual conference of the National Association for the Education of Young Children, Denver, CO, November 9, 1991), 25.

<sup>18</sup>Jean I. Layzer, Barbara D. Goodson, and Judith A. Layzer, *Evaluation of Project Giant Step, Year Two Report: The Study of Program Effects* (Cambridge, MA: Abt Associates, Inc., June 1990), 1.

<sup>19</sup>Shirley Gatenio, “Taking a Giant Step: A Case Study of New York City’s Efforts To Implement Universal Pre-Kindergarten Services,” (working paper, Foundation for Child Development, New York, April 2002), 5.

<sup>20</sup>Shirley Gatenio, “Taking a Giant Step: A Case Study of New York City’s Efforts To Implement Universal Pre-Kindergarten Services,” (working paper, Foundation for Child Development, New York, April

BOE staff were a source of dissatisfaction for the ACD staff. Difficulties also arose in obtaining adequate space to house the programs, because Giant Step was operating in areas with crowded schools and poor quality building stock, where extensive and expensive renovations were often necessary.<sup>21</sup> The program also had difficulty with low initial enrollment in new Giant Step sites. New program sites in the 1987-1988 school year had enrollment at 72 percent of capacity, and new program sites in the 1988-1989 school year had enrollment of 63 percent of capacity. This was attributed to the late start of Giant Step (November), poor recruitment in new sites, and the demand for full-day classes.<sup>22</sup>

**Assessing the randomization.** The evaluation did not use random assignment.

**Assessing statistical controls in experimental and nonexperimental evaluations.** The Abt team based its findings on a comparison of Giant Step children's scores on cognitive and socioemotional measures with those that would have been expected in absence of the program. As explained above, they constructed developmental norms based on the children's pretest scores for each of the measurement instruments and then compared these norms to the actual gains experienced by the Giant Step children.

For the PSI, the Abt team's analysis showed that Giant Step children could be expected to gain 0.45 items per month as part of normal development. In order to assess the accuracy of this constructed norm, the evaluators compared it to similar PSI norms from three other national studies—the Home Start, Head Start, and National Day Care studies. Sample norms in these studies ranged from 0.35 items gained per month (Home Start) to 0.5 items per month (National Day Care Study), with an average of 0.44 items per month, which is quite close to the 0.45 items estimated by the Abt Giant Step norm. To establish the norm for the CBRS, the Abt team used the pretest scores from cohort II, which they felt were more reliable because improvements to the measure had been made after the first year. According to this norm, CBRS scores would increase about 0.029 points for each month of age under normal development, or 0.16 points per year. The accuracy of this norm was not validated through a comparison with similar norms.

**Sample size.** A total of 1,039 children participated in the evaluation: 454 in cohort I and 585 in cohort II.

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2002), 19.

<sup>21</sup>Shirley Gatenio, "Taking a Giant Step: A Case Study of New York City's Efforts To Implement Universal Pre-Kindergarten Services," (working paper, Foundation for Child Development, New York, April 2002), 19.

<sup>22</sup>New York City Public Schools, Office of Research, Evaluation, and Assessment, *Project Giant Step Chapter I program: 1987-1988* (New York: New York Public Schools, 1989).

**Attrition.** In cohort I, about 81 percent of the sample was retained for spring testing. Children who attrited were more likely to have single-parent families, lower family income, and a mother who was a teenager at the child's birth.<sup>23</sup> The differences between attrited children and non-attrited children on the PSI were not statistically significant.

Attrition was a significant problem in cohort II. Only 65 percent of the sample was retained for spring testing. The Abt team notes that "the much greater attrition in Cohort II can be attributed to a problem with the data collection procedures." Apparently, "the two testers responsible for administering the PSI to Spanish-speaking children did not complete their assignments, and could not be replaced before the end of the data collection period."<sup>24</sup> Among this sample, attrited children (missing post-test scores) had statistically significantly lower mean pre-test scores (9.9) than the non-attrited children (13.1) and the difference was larger in the BOE sites than in the ACD sites. This attrition raises concerns about the reported overall effects of the program. The positive average effects may be due more to the removal of children with lower scores from the sample than Giant Step itself.

**Data collection.** The data collection relied on two tests—the Preschool Inventory (PSI) and the Child Behavior Rating Scale (CBRS)—administered to children, as well as the Parent As a Teacher Inventory (PAAT) and parent interviews.

**Measurement issues.** The Preschool Inventory was developed by Bettye Caldwell with the aim of providing Head Start with a practical measure of preschool achievement.<sup>25</sup> Its questions were designed to measure the achievement of three- to six-year-olds in educational skills traditionally expected of middle-class kindergarten children. The instrument was used in a number of early Head Start evaluations (1968–1971), as well as the National Day Care Study (1975–1981), and the home-based Head Start evaluation, but has not been used in recent years.

The Child Behavior Rating Scale (CBRS) was developed especially for the Giant Step evaluation by Drs. Martha Bronson and John Love. The CBRS was based on the Bronson Executive Skill Profile, an observational measure of children's socioemotional development that had been used in small-scale program evaluation and was shown to be predictive of later school

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<sup>23</sup>Jean I. Layzer, Barbara D. Goodson, and Judith A. Layzer, *Evaluation of Project Giant Step, Year Two Report: The Study of Program Effects* (Cambridge, MA: Abt Associates, Inc., June 1990), 70.

<sup>24</sup>Jean I. Layzer, Barbara D. Goodson, and Judith A. Layzer, *Evaluation of Project Giant Step, Year Two Report: The Study of Program Effects* (Cambridge, MA: Abt Associates, Inc., June 1990), 74.

<sup>25</sup>Jean I. Layzer, Barbara D. Goodson, and Judith A. Layzer, *Evaluation of Project Giant Step, Year Two Report: The Study of Program Effects* (Cambridge, MA: Abt Associates, Inc., June 1990).

success.<sup>26</sup> The measure itself, however, had not been validated.

**Generalizability.** The Project Giant Step sample consisted of children from poor, underserved areas of New York City, thus limiting its overall generalizability. Moreover, the evaluation does not provide an indication of how the sample children's characteristics compare with those of other poor children in New York City, so it is impossible to assess its representativeness.

**Replication.** Project Giant Step has apparently not been replicated. After its dissolution, however, the Giant Step classrooms operated by BOE were converted into a new program, SuperStart, a program similar to Giant Step that focused exclusively on children from low-income families.

**Evaluator's description of findings.** The Abt team is positive in its description of the findings, noting: "A consistent pattern of findings emerged across different measure of children's development. Not only did children in Project Giant Step show significant gains on a test of cognitive achievement but also their social skills and their ability to undertake classroom task improved significantly."<sup>27</sup> Examining these gains in a comparative sense, the Abt team concludes, "These gains were considerably greater than would be expected as part of normal development and greater than gains achieved on the same test by children in other comparable early childhood programs."<sup>28</sup>

The evaluators examine the program's attrition rates and compare the characteristics and pretest scores of attrited versus non-attrited children. They do not, however, address how this attrition could have potentially biased their findings.

**Evaluator's independence.** Project Giant Step was evaluated by an independent team at Abt Associates Inc.

**Statistical significance/confidence intervals.** Statistical significance was measured and reported at the 1 percent, 5 percent, and 10 percent levels.

**Effect sizes.** Effect sizes are reported for Giant Step children's pretest to post-test gain in the PSI and CBRS, but not for the gains that they made compared to developmental norms. Effect

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<sup>26</sup>Martha B. Bronson, "Executive Competence in Preschool Children" (paper, Symposium on Dimensions of Competence in the Classroom, American Educational Research Association, Washington, DC, April 3, 1975).

<sup>27</sup>Jean I. Layzer, Barbara D. Goodson, and Judith A. Layzer, *Evaluation of Project Giant Step, Year Two Report: The Study of Program Effects* (Cambridge, MA: Abt Associates, Inc., June 1990), 3.

<sup>28</sup>Jean I. Layzer, Barbara D. Goodson, and Judith A. Layzer, *Evaluation of Project Giant Step, Year Two Report: The Study of Program Effects* (Cambridge, MA: Abt Associates, Inc., June 1990), 4.

sizes were calculated as the mean change in the PSI or CBRS score (from pretest to post-test) divided by the pretest standard deviation. The reported cognitive effect sizes fell in the range of about 0.7 SD to 0.9 SD. Effect sizes for the socioemotional measure (CBRS) ranged between 0.12 SD and 0.41 SD.

**Sustained effects.** The evaluation was suspended before the planned kindergarten follow-up could be completed.

**Benefit-cost analysis.** Apparently not performed.

**Cost-effectiveness analysis.** The Abt team conducted a cost-effectiveness analysis of the program.

## Commentary

**Editor's Note:** For each evaluation included in this report, we attempted to contact the senior evaluators to offer them the opportunity to respond to our assessment. Drs. Jean Layzer and Barbara Goodson provided assistance in editing the preliminary versions of this chapter but did not provide final comments.

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