Major Findings for Jumpstart’s Dual Language Learners:

2016–2017 Program Year
INTRODUCTION

In the 2016-2017 program year, 53% of the children participating with Jumpstart were Dual Language Learners (DLLs), or children living in a household where one or more members speak a language other than English.¹ DLLs are a rapidly growing population in the U.S., with ten states experiencing more than 200% growth from 1990 to 2010.² Jumpstart is particularly interested in understanding how it serves this important population.

Research suggests that children who are DLLs, particularly those who are less proficient in English, may benefit more from participation in high-quality early learning programs relative to their monolingual peers.³⁴产品研发 Evidence also suggests that DLLs can have strong, positive outcomes if their systematic and deliberate exposure to English is paired with support for home language development⁵,⁶,⁷ and if cultural connections and communication with family members are maintained⁸. Informed by this and other research, Jumpstart continually strives to deliver programming that helps DLLs acquire English language skills while using their home language as a bridge whenever possible. By measuring the English language and literacy gains made by DLLs, Jumpstart can gauge how well it served this group over the course of a program year.

Language Development in Dual Language Learners

DLLs are young children acquiring two or more languages at the same time,⁹ and come from a wide array of language backgrounds. Some children are from homes in which English is the most commonly used language; others are from homes in which another language is used exclusively or more commonly than English (see Appendix for Jumpstart children’s home language information). Importantly, the ongoing challenges of processing more than one language and frequently switching between languages results in a different set of strengths and needs for DLLs as compared to monolingual children.¹⁰ Therefore, despite the variation within the DLL population in terms of overall language ability and amount of English input, it makes sense to identify DLLs according to the broad definition stated above.

According to a recent consensus report by the National Academy of Sciences¹¹, DLLs may show uneven progress between the two languages they are acquiring, depending on the age and circumstances of their first exposure to English and their development in the other language. Young children’s language acquisition occurs along a developmental continuum that can be described by six stages, beginning with “Entering” (stage 1) through “Reaching” (stage 6).¹² Children who are acquiring two or more languages may be at different stages along the continuum for their first language (L1) versus their second (L2). Children who are acquiring two languages sequentially can also be in the “home language stage” or “non-verbal stage” in their second language (L2).¹³

Assessing Dual Language Learners

Many children enter the Jumpstart program with emergent English language and literacy skill levels, and do not yet score on the assessments Jumpstart uses (see below for a description). A considerable number of these children are DLLs; they are likely at stage 1 of the developmental continuum, and may be in the “home language stage” or “non-verbal stage” of dual language acquisition. In previous years, Jumpstart did not report the outcomes of children who did not have pre-intervention scores, even though they were likely making strides in language and literacy over the course of the year. In an attempt to capture more information about the progress that this group was making, the Research & Evaluation department modified the Jumpstart School Success Checklist (see below for description) for the 2016-2017 program year. A new checkbox at the start of the assessment now asks teachers, “Are you able to rate this child on his/her skills in the English language at this time?” A “No” response to this question indicates that the child’s skill levels are outside the range of the five-point scale of the assessment, and allows the Research & Evaluation department to track the outcomes of children who do not have pre-intervention scores.¹⁴

As a note, while the JSSC measures children’s language ability in English only, Jumpstart recognizes that such a tool may give an incomplete picture of a child’s language and literacy development. The modified approach taken this year, with the new checkbox, is part of an ongoing effort to better understand the progress of all participating children.
RESEARCH QUESTIONS

1. How did Jumpstart children who are Dual Language Learners progress in language and literacy skills during the 2016-2017 program year?
2. How did the language and literacy outcomes of Dual Language Learner children differ based on their level of English at the start of the program year?

METHODS

Assessment

Jumpstart School Success Checklist

Children were assessed on the Jumpstart School Success Checklist (JSSC). The JSSC is comprised of select items from the HighScope Educational Research Foundation’s Preschool Child Observation Record (COR), 2nd Edition (HighScope, 2003), a standardized teacher observational tool. Typically, preschool teachers complete the JSSC at pre-intervention (before children attend sessions) and at post-intervention (after program completion). In select sites, teachers also complete the JSSC at mid-intervention.

The JSSC consists of 15 items from the COR that focus on language and literacy skills as well as social-emotional competencies that have a language component (e.g., relating to adults through conversation, and making choices and plans by verbally expressing them). On each item, a child is given a score of 1, 2, 3, 4, or 5, where each score corresponds to a specific skill/behavior, and higher scores represent a more developmentally advanced skill. For example, on Item 3 (Using complex patterns of speech), a child who receives a 1 uses words and phrases, while a child who receives a 2 can use a sentence of four or more words. A child who does not use words or phrases (i.e., does not yet score a 1) would have no score reported, as their language and literacy skill levels fall outside the range measured by the assessment.\footnote{v}

For the 2016-2017 program year, a new checkbox at the start of the assessment now asks teachers, “Are you able to rate this child on his/her skills in the English language at this time?” A “No” response to this question indicates that the child’s skill levels were outside the range of the five-point scale of the assessment, and allows the Research & Evaluation department to confirm that the absence of ratings between 1 and 5 are a reflection of the teacher’s determination of a child’s skill levels at the time of the assessment, rather than missing data.

Participants

Of the 12,230 children served by Jumpstart over the course of the 2016-2017 program year, 5,084 were DLLs. DLLs had a language other than English reported for one or more of the following: 1) language most spoken in the home; 2) language most comfortable for the child; 3) other language(s) spoken in the home. Children identified as DLLs were grouped into three evaluation samples according to their pre- or mid-intervention assessment results, described below.

Evaluation Samples

This evaluation includes three samples drawn from the overall population of 5,084 DLLs with information and consent. For all samples, the children included met the following criteria: 1) they received Jumpstart’s traditional programming (i.e., not an innovation or pilot program); 2) they had family consent for participation in evaluation activities; 3) they had post-intervention assessment data; and 4) they were enrolled with Jumpstart for a minimum of 120 days.

Sample 1: Dual Language Learners With Pre-Intervention JSSC Scores in the Valid Range

Of the 5,084 Jumpstart children who were identified as dual language learners (DLLs), 2,720 were included in Sample 1. These children met the above four criteria, and, in contrast to some of their DLL peers, started the program year with
language and literacy skills that were within the range measured by the JSSC. Thus, they had pre- and post-intervention scores that could be compared in order to measure growth over the course of the program year.

**Sample 2: Dual Language Learners With Pre-Intervention JSSC Scores outside the Valid Range**

Among DLLs, there were 235 children for whom teachers checked the “unable to assess” box at pre-intervention. By post-intervention, 183 of these children had progressed to a point where they were displaying skills measured by the assessment; they were included in Sample 2. Because these children had pre-intervention scores outside the range measured by the JSSC, a quantitative measure of their pre- to post-intervention growth cannot be reported. However, their nonzero post-intervention scores, taken together with the fact that they were outside the measurable range at pre-intervention, can give an idea of the progress they made over the course of the year.

**Sample 3: Dual Language Learners With Pre-Intervention JSSC Scores outside the Valid Range and Mid-Intervention JSSC scores in the Valid Range**

In certain geographic locations, Jumpstart sites administered mid-intervention JSSCs. A subset of the children in Sample 2 were also assessed at mid-intervention, and these 75 children were included in Sample 3. Thus, children in Sample 3 had mid- and post-intervention JSSC scores that could be compared in order to measure growth during the latter part of the program year. As a note, children in Sample 3 are a subset of Sample 2, and they differ only in their geographic location (i.e., not their skill levels at mid-intervention) from those who do not have mid-intervention data.

**Demographics**

Based on information that families shared about their children, the Research and Evaluation team looked at the demographic composition of the 5,084 DLLs in Jumpstart’s traditional direct service program, as well as for each of the three subsamples described above (see Appendix for a complete tabulation).

DLLs in 2016-2017 differed considerably from the overall Jumpstart population in terms of race/ethnicity. Most notably, a majority (67%) of DLLs were identified by their families as Hispanic or Latinx, while only 39% of all Jumpstart children were (see Figure 1). This was consistent across the subsamples; 80% of children in Sample 2 were Hispanic or Latinx, and 85% of children in Sample 3 were (see Appendix). Also, fewer DLLs were identified by their families as White (3%) or Black (10%) as compared to Jumpstart children overall (8% White and 35% Black), and more DLLs were identified as Asian (10%) as compared to Jumpstart children overall (6%).

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<thead>
<tr>
<th></th>
<th>Has Pre</th>
<th>Has Mid</th>
<th>Has Post</th>
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<tbody>
<tr>
<td>Sample 1</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
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<tr>
<td>Sample 2</td>
<td>✔️</td>
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<tr>
<td>Sample 3</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
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</tbody>
</table>

**Figure 1.** Reported race and ethnicity for DLL children and Jumpstart children overall. Note: 93% of children had race/ethnicity reported for them.
There were striking differences among the different samples within the DLL population in terms of home language. While 44% of DLLs in Sample 1 (i.e., could be assessed at pre-intervention) had English selected as the language most spoken in the home, this number was much lower for DLLs in Sample 2 (9%) and Sample 3 (14%). See Figure 2. In some sense, it is not surprising that children who did not yet score at pre-intervention tended to have less English input than their peers who had pre-intervention scores. However, the variation seen across different subgroups within the DLL population confirms the need to analyze the outcomes of subgroups within it—especially for children without pre-intervention scores, who in previous years were not included in any evaluation samples.

On a related note, while 40% of DLLs in Sample 1 (i.e., began the program with English language skill levels within the measurable range) had Spanish selected as the language most spoken in the home, 76% of DLLs in Sample 2 (i.e., began the program with English language skill levels outside the measurable range) had Spanish as their home language, as did 78% of DLLs in Sample 3 (i.e., the subset of children in Sample 3 who also had mid-intervention data available). See Figure 3.

In terms of age, DLLs with pre-intervention scores outside the measurable range were slightly younger than those with nonzero pre-intervention scores (Samples 2 and 3 as compared to Sample 1; see Appendix). This is consistent with expectations, in that DLL children who are slightly older may have had time to develop to a point where they were displaying language and literacy skills that are measurable by the JSSC.

There were no notable differences in terms of gender composition among the different sample populations.

OUTCOMES

Children Who Could Be Assessed At Pre-Intervention

Sample 1: Dual Language Learners who had pre- and post-intervention scores in the valid range

Children in Sample 1 had pre- and post-intervention scores that could be compared in order to measure growth over the course of the program year. Among children in Sample 1, 90% made a gain from pre- to post-intervention, and 53% made a gain of 1 point or more on the five-point scale of the JSSC, which is considered to be a substantive gain. Children in Sample 1 began the year with an average pre-intervention score of 2.55 and finished the year with an average post-intervention score of 3.62, making an average gain of 1.07 on the five-point scale of the assessment (see Figure 4 and Table 1).
Figure 4. Average JSSC score gains of DLLs in Sample 1, as compared to monolinguals and all children who have pre- and post-intervention scores. Note: The numbers shown reflect averages of individual pre- to post-intervention gains, and may not equal the difference between the average pre-intervention score and average post-intervention score.

Table 1
JSSC Outcomes of Dual Language Learner Children, Monolingual Children, and Children of All Language Backgrounds

<table>
<thead>
<tr>
<th></th>
<th>Percentage Making Gains</th>
<th>Percentage Making Gains of 1 Point or More</th>
<th>Average Pre-Intervention Score</th>
<th>Average Post-Intervention Score</th>
<th>Average Gain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample 1: DLLs With Pre and Post</td>
<td>90%</td>
<td>53%</td>
<td>2.55</td>
<td>3.62</td>
<td>1.07</td>
</tr>
<tr>
<td>Monolinguals With Pre and Post</td>
<td>89%</td>
<td>48%</td>
<td>2.75</td>
<td>3.75</td>
<td>0.99</td>
</tr>
<tr>
<td>All With Pre and Post</td>
<td>90%</td>
<td>50%</td>
<td>2.65</td>
<td>3.68</td>
<td>1.03</td>
</tr>
</tbody>
</table>

These outcomes compare favorably to those of monolingual children, and to those of Jumpstart children in the overall evaluation sample. While 53% of the DLL children in Sample 1 made substantive gains, 48% of their monolingual peers did so, and did 50% of Jumpstart children overall. Children in Sample 1 made greater average gains from pre- to post-intervention (1.07 points) than their monolingual peers (0.99 points), and this difference was statistically significant, t(5,090)=3.04, p=.002. It is worth highlighting that DLLs, despite the fact that they are juggling multiple language inputs, are still making comparable or greater gains than their monolingual peers.
Children Who Could Not Be Assessed At Pre-Intervention

Sample 2: Dual Language Learners who could be assessed at post-intervention but not at pre-intervention

Among DLLs, there were 235 children for whom teachers checked the “unable to assess” box at pre-intervention, and 183 of them could be assessed at post-intervention. These children were included in Sample 2. Because these children had pre-intervention scores outside the range measured by the JSSC, a quantitative measure of their pre- to post-intervention growth cannot be reported. However, their nonzero post-intervention scores, taken together with the fact that they were outside the measurable range at pre-intervention, can give an idea of the progress they made over the course of the year. As a note, this sample includes children with and without available mid-intervention data.

At post-intervention, children in Sample 2 scored an average of 2.90, suggesting that they made at least as much progress, on average, as if they had begun the year with a pre-intervention score of 1.00 (the minimum score possible) and made a gain of 1.90. See dotted line in Figure 5. This is a huge leap, given that children typically make gains of 1.00 over the course of a program year. What’s more, DLLs in Sample 2 finished the year with a post-intervention score that is within the range demonstrated by their peers (e.g., higher than the 2.75 scored by monolinguals at pre-intervention).

Sample 3: Children who could be assessed at mid- and post-intervention but not at pre-intervention

Sample 3 included a subset of children from Sample 2 who also had mid-intervention data. Children in Sample 3 scored an average of 2.59 at mid-intervention, suggesting that they made at least as much progress, on average, as if they had begun the year with a pre-intervention score of 1.00 and made a gain of 1.59 during the earlier part of the program year. Looking at the full program year, the post-intervention score of 3.17 for Sample 3 suggests that they made at least as much progress, on average, as if they had begun the year with a pre-intervention score of 1.00 and made a gain of 2.17. This is a huge leap, given that children are typically expected to make a gain of 1.00 over the course of an entire year. See Figure 6.

Because children in Sample 3 had mid- and post-intervention JSSC scores that could be compared, a quantitative measure of their growth during the latter part of the program year could be calculated. After scoring an average of 2.59 at mid-intervention, children in Sample 3 scored an average of 3.17 at post intervention, making an average gain of 0.58 over the
course of an average of 78 days. As a reference, children who make a gain of 1.00 over the course of 120 days are considered to have made substantive gains. Looking at all children who had pre-, mid-, and post-intervention scores, monolinguals had an average mid-intervention score of 3.43, and made an average mid- to post-intervention gain of 0.44. Thus, despite the fact that they could not be assessed at pre-intervention, DLLs in Sample 3 made greater mid- to post-intervention gains than their monolingual peers. See Figure 6.

**Dual Language Learners in Sample 3** had mid-intervention scores approaching the pre-intervention scores of their peers, and made greater mid- to post-intervention gains than their peers.

Despite the fact that they could not be assessed at pre-intervention, DLLs with mid- and post-intervention data still made comparable or greater gains than their monolingual peers.

**Figure 6.** Average mid- and post-intervention scores of DLLs in Sample 3, as compared to monolinguals and all children who have pre- and post-intervention scores.

**SUMMARY**

DLLs who had data that allowed for a quantitative comparison with monolingual children made greater gains than their monolingual peers. DLLs whose pre- to post-intervention gains could not be quantified ended the year with solid post-intervention scores, and those who had mid-intervention data available made sizeable gains during the latter part of the year. Thus, DLLs who participated with Jumpstart in the 2016-2017 program year made remarkable progress. These findings align with other research demonstrating that DLLs, particularly those who are less proficient in English, may benefit more from participation in high-quality early learning programs relative to their peers. Encouraged by these results, Jumpstart will continually work to find ways to better serve children who are DLLs, and to understand the progress they are making.
Demographic data are shown for the larger group identified as DLLs, and for each of the three evaluation samples. As a reference, corresponding data for all children served during the 2016-2017 program year are shown alongside the DLL data (greyed out).

Percentage of Children in Each Demographic Category During the 2016-2017 Program Year

<table>
<thead>
<tr>
<th>DEMOGRAPHICS</th>
<th>Percentage, All DLLs in Traditional Program (n=5,084)</th>
<th>Percentage, Sample 1: DLLs with Pre and Post (n=2,720)</th>
<th>Percentage, Sample 2: DLLs with Out-of-Range Pre (n=183)</th>
<th>Percentage, Sample 3: DLLs with Out-of-Range Pre, with Mid (n=75)</th>
<th>Percentage, All Jumpstart Children (n=9,888)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Race/Ethnicity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td>10%</td>
<td>10%</td>
<td>12%</td>
<td>9%</td>
<td>6%</td>
</tr>
<tr>
<td>Black or African American</td>
<td>10%</td>
<td>9%</td>
<td>3%</td>
<td>0%</td>
<td>35%</td>
</tr>
<tr>
<td>Hispanic or Latinx</td>
<td>67%</td>
<td>68%</td>
<td>80%</td>
<td>85%</td>
<td>39%</td>
</tr>
<tr>
<td>White</td>
<td>3%</td>
<td>3%</td>
<td>2%</td>
<td>1%</td>
<td>8%</td>
</tr>
<tr>
<td>Multiple races</td>
<td>9%</td>
<td>9%</td>
<td>2%</td>
<td>3%</td>
<td>10%</td>
</tr>
<tr>
<td>Other</td>
<td>&lt; 1%</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
</tr>
<tr>
<td>Home Language</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chinese</td>
<td>6%</td>
<td>7%</td>
<td>6%</td>
<td>1%</td>
<td>2%</td>
</tr>
<tr>
<td>English</td>
<td>44%</td>
<td>44%</td>
<td>9%</td>
<td>14%</td>
<td>69%</td>
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<tr>
<td>Haitian Creole</td>
<td>2%</td>
<td>2%</td>
<td>2%</td>
<td>0%</td>
<td>1%</td>
</tr>
<tr>
<td>Spanish</td>
<td>41%</td>
<td>40%</td>
<td>76%</td>
<td>78%</td>
<td>23%</td>
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<tr>
<td>Other</td>
<td>7%</td>
<td>4%</td>
<td>6%</td>
<td>3%</td>
<td>4%</td>
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<tr>
<td>Gender</td>
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<tr>
<td>Female</td>
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<td>Male</td>
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<tr>
<td>Age</td>
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<tr>
<td>Under 3 years (36.00 months) old</td>
<td>6%</td>
<td>4%</td>
<td>9%</td>
<td>11%</td>
<td>5%</td>
</tr>
<tr>
<td>3 years (36.00 - 47.99 months) old</td>
<td>41%</td>
<td>40%</td>
<td>47%</td>
<td>47%</td>
<td>39%</td>
</tr>
<tr>
<td>4 years (48.00 - 59.99 months) old</td>
<td>51%</td>
<td>54%</td>
<td>44%</td>
<td>43%</td>
<td>52%</td>
</tr>
<tr>
<td>5 years (60.00 - 71.99 months) old</td>
<td>2%</td>
<td>2%</td>
<td>1%</td>
<td>0%</td>
<td>3%</td>
</tr>
<tr>
<td>6 years (72.00 months) or older</td>
<td>&lt; 1%</td>
<td>&lt; 1%</td>
<td>0%</td>
<td>0%</td>
<td>&lt;1%</td>
</tr>
</tbody>
</table>

Note: Percentages may not total 100% due to rounding. Response rates varied across demographics and across samples, ranging from 93% to 100%.

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See Child Trends Data Bank definition above; this is in contrast to (generally older) children who are English Language Learners (ELLs), who have already acquired a language other than English, and are now acquiring English.


https://www.wida.us/get.aspx?id=675


See “Assessment” section for fuller explanation. On the upper end of the scale, a child would score a 5 even if their skill levels are outside the targeted range of the assessment; thus, scores outside the range of the assessment are at the lower end only.

On the upper end of the scale, a child would score a 5 even if their skill levels are outside the targeted range of the assessment. For example, on Item 3 (Using complex patterns of speech), a child scores a 5 if they can use a clause that starts with “when,” “if,” “because,” or “since” in a sentence. A child who can use even more complex patterns of speech, while not able to score higher than a 5, would still have a score reported. Thus, while the assessment is limited in its ability to measure skill levels below and above its targeted range, there is a qualitative cut-off at the lower end of the scale that does not exist at the upper end.

Numbers are for children who had demographic information available, and whose families gave consent for Jumpstart to use that information; children served had language information available or family consent for Jumpstart to use that information; 9,504 did. Of these, 5,084 (53%) were identified as dual language learners.

Among the 235 DLLs who could not be assessed at pre-intervention, 211 had post-intervention data, and of these, 183 could be assessed and 28 could not.

Among the 211 DLLs who could not be assessed at pre-intervention but had post-intervention data, 84 had mid-intervention data. Of these, 75 could be assessed at mid-intervention and 9 could not.

Who had information and consent

As part of Jumpstart’s continuing efforts to use inclusive language, the gender-neutral term “Latinx” will be used to refer to individuals previously described as “Latino/a”

All children in Sample 3 reside in California.

Due to the way mid-intervention data were collected, all children in Sample 3 were in California. As a reference, 43% of Jumpstart children in California had Spanish as their home language.

i.e., children of all language backgrounds who participated in traditional programming (not an innovation or pilot program), had family consent for participation in evaluation activities, had pre- and post-intervention assessment data, and were enrolled with Jumpstart for a minimum of 120 days
