Your Question:
You inquired about research regarding the effectiveness of pre-K programs, both short- and long-term.

Our Response:
There is quite a bit of research in this area — most of it pointing in the general direction that pre-K has provided sustained positive benefits for children in several areas, including literacy, math, science and other social and emotional skills.

It may be most helpful to start with a meta-analysis of pre-K research done by the Learning Policy Institute ([full report](#) and [brief](#)). It reviewed 33 independent studies/evaluations of 21 different programs (state-level and Head Start) and found:

1) For impacts at school entry, compared with children with no pre-K, among pre-K participants (see graphic below):
   a. 17/18 studies found positive impacts for literacy.
   b. 14/16 studies found positive impacts for math.
   c. 4/6 studies found positive impacts for social and emotional learning.

![Impacts of Preschool at School Entry](image)

2) For impacts throughout school (often through third grade, sometimes beyond), among pre-K participants:
   a. 7/15 found positive benefits for literacy (8 found no difference).
   b. 10/13 found positive benefits for math (1 found no difference, 2 found worse outcomes*).
   c. 6/10 found positive benefits regarding reduced grade retention later on.
   d. 4/7 found reduced special education placements later on, 1 found worse outcomes.*
*LPI highlights a major caveat regarding the studies that found worse outcomes later on; they are primarily from the 
TN study of its state pre-K program or Head Start. The TN study was not consistent or rigorous in its approach to 
controlling for the comparison and experimental groups (i.e., comparison groups — those who were thought to not 
have any pre-K experience — were often found to be enrolled in some type of pre-K, often of higher quality). This 
really muddies the water when making comparisons and claiming long-term effects in third grade fadeout. The Head 
Start study was a bit more rigorous, but still faced similar challenges. Other long-term studies have found mixed 
results, but more is likely needed to be done to better understand the differences and variability in quality.

In all, researchers emphasize that **quality is paramount**. Additionally, Dr. Deborah Phillips had a great quote regarding 
the long-term effectiveness of pre-K: “Do we hold first, second or third grade responsible for outcomes in eighth, 
ninth and tenth grades? So, why are we holding pre-K accountable for long-term effects?” In all, a better way to 
frame it is that pre-K can have positive long-term effects, as the majority of research demonstrates, according to the 
LPI study, which had very rigorous selection criteria.

To sustain high-quality pre-K gains, it is also critical that the K-3 years are high-quality (for more information, see 
Education Commission of the States’ K-3 Policymakers’ Guide to Action: Making the Early Years Count). I would also 
recommend a webinar that the National Conference of State Legislatures hosted in spring 2017, titled “Preschool 
Effects: What the Research Does and Does Not Say.”

Some additional research:

- **Long-term effectiveness**
  - In third grade:
    - **Arkansas**: better outcomes at end of first and second grade for language, math and literacy, 
      and lower grade retention (some effects faded at end of third grade).
    - **Georgia**: higher test scores in English language arts, math, science and social studies.
    - **Louisiana**: especially beneficial for low-income students, who had higher third and fourth 
      grade literacy outcomes than non-participants.
    - **New Jersey**: significant benefits in language, literacy and math skills in second, fourth and 
      fifth grades.
    - **North Carolina**: positive impacts at age 11 — better reading and math scores, lower special 
      education placements and retention rates.
    - **Oklahoma**: one cohort found persistence of gains in math but not reading, different 
      outcomes across genders.
    - **Texas**: better outcomes in literacy and math in third grade, reduced special education 
      placement and grade retention.
    - **Washington**: positive impact in third, fourth and fifth grade test scores (literacy and math)
In middle school:
- **Alabama**: participants more likely to be proficient in math and reading in grades 3-7.
- **Oklahoma**: enduring positive effects on math achievement, enrollment in honors courses and reductions in grade retention.

In adulthood and generational effects:
- **Perry Preschool (NJ)**: children of program participants were found to be more likely to: never be suspended from school; complete high school without suspension; never be suspended, addicted or arrested; be employed full-time or self-employed; have at least a high school diploma; or have at least some college experience.

- **Short-term impacts at kindergarten entry**
  - **New Mexico**: lowered special education placement and retention rates, improved math and reading proficiency rates.
  - **Tennessee**: participants performed better across all content tests with low-income and non-native-English speaking students making the highest gains.

- For different demographic groups, students from low-income families generally enter kindergarten trailing their peers from higher-income families (see graphic below). Pre-K has been found to significantly improve outcomes for these students.

African American, Hispanic, and low-income children lag behind their white and more affluent peers in math and reading at kindergarten entry

Kindergarten achievement gaps in months of learning by subgroup, 2010

<table>
<thead>
<tr>
<th>Subgroup</th>
<th>Math</th>
<th>Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>African American</td>
<td>8.9</td>
<td>6.7</td>
</tr>
<tr>
<td>Hispanic</td>
<td>10.8</td>
<td></td>
</tr>
<tr>
<td>Higher income</td>
<td>11.5</td>
<td></td>
</tr>
<tr>
<td>Low income</td>
<td>11.2</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>13.0</td>
<td></td>
</tr>
</tbody>
</table>

- Return on investment ranges from $2-$17 per dollar spent. The wide range reflects very conservative estimates ($2-$4 to $1 in consensus research) to very generous estimates (in the $13-$17 to $1 range). In either case, even a $1 to $1 return means the program pays for itself. James Heckman’s research is often cited; he finds a $13 to $1 return.

Additional Resources:
- Education Commission of the States
  - Companion Report: 50-State Comparison: K-3 Quality
- Strengthening the Early Childhood Education Continuum
- 50-State Comparison: State Kindergarten-Through-Third-Grade Policies
- Transitions and Alignment from Preschool to Kindergarten
- Governance in Early Childhood Education
- How States Fund Pre-K: A Primer for Policymakers

- Brookings Consensus Pre-K Report (meta-analysis): Brief and Full Report
- National Conference of State Legislatures
  - Early Learning and Support Portal Page
  - State Policy and Research for Early Education Working Group (SPREE) Report
  - Preschool Effects: Consensus Research