



AUGENBLICK,
PALAICH AND
ASSOCIATES

Final Report for the Summer Advantage Program in the Roaring Fork School District

APA Consulting
May 2017



Acknowledgements

This work was funded by Mile High United Way and the Corporation for National and Community Service's Social Innovation Fund grant. The report was produced in cooperation with Summer Advantage and Summit 54.

Special thanks

Augenblick, Palaich and Associates (APA) is a Denver-based research and consulting firm. Founded in 1983, APA has worked in all 50 states addressing key education issues including school finance, educator effectiveness, early childhood education, and program evaluation. APA would like to thank Summer Advantage and Summit 54 for selecting APA to serve as the external evaluator for this study, and Mile High United Way for their efforts as the intermediary for the Corporation for National and Community Service's Social Innovation Fund grant that makes this evaluation possible.

Principal authors:

Jack Hill, Dale DeCesare, and Abby McClelland.

Recommended citation:

Augenblick, Palaich and Associates, (2016). Final Five Year Evaluation Report for the Summer Advantage Program in Colorado's Roaring Fork School District. Denver, Colorado.

The contents of this document are solely the responsibility of Augenblick, Palaich and Associates and do not represent the official views of the Corporation for National and Community Service's Social Innovation Fund or Mile High United Way.

This document may be reproduced in whole or part without restrictions as long as Augenblick, Palaich and Associates is credited for the work. Upon request, the contents of this document will be made available in alternate formats to serve accessibility needs of persons with disabilities.

Funding:

This report is based upon work supported by the Social Innovation Fund (SIF), a key White House initiative and program of the Corporation for National and Community Service (CNCS). The Social Innovation fund combines public and private resources to grow the impact of innovative, community-based solutions that have compelling evidence of improving the lives of people in low-income communities throughout the United States.

Table of Contents

Final Report for the Summer Advantage Program in the Roaring Fork School District.....	1
Executive Summary.....	5
Program Description	5
Prior Research and Study Design	5
Level of Evidence Targeted	5
Evaluation Measures and Analysis.....	6
<i>Overall Findings</i>	6
Program Implementation.....	6
Student Outcomes	7
Introduction	8
Overview of the Implementation Monitoring Analysis.....	8
Overview of the Impact Analysis.....	9
Summer Advantage.....	11
History	11
Programming.....	11
Partnerships	12
Goals.....	12
Implementation Analysis	15
Background	15
Research Questions and Activities	15
Research Findings	17
Performance on Program Objectives.....	18
Conclusions	30
Implementation Analysis Conclusions	30
Impact Analysis Conclusions	31

List of Tables

- Table 1: *Implementation Analysis Questions* – p. 15
- Table 2: *Implementation Analysis Program Objectives to be Monitored* – p. 16
- Table 3: *Student Recruiting Objectives were Fully Met* – p. 17
- Table 4: *Summer Advantage Continues to Meet Enrollment Goals* – p. 17
- Table 5: *2015 Completion and Attendance Rates Remain High* – p. 18
- Table 6: *Demographic Characteristics of Summer 2015 SA Students, by Completion Status* – p. 19
- Table 7: *Objectives to Recruit Qualified Staff were Fully Met* – p. 19
- Table 8: *Objectives About Training Teachers were Partially Met* – p. 22
- Table 9: *Objectives About Building Program-District Relationships were Fully Met* – p. 24
- Table 10: *Objectives About Assessing Students were Fully Met* – p. 25
- Table 11: *Objectives About Providing Students with Appropriate Daily Academic Instruction and Enrichment were Fully Met* – p. 25
- Table 12: *Objectives About Ensuring that Teachers and Staff Use Culturally Competent Curriculum were Partially Met* – p. 26
- Table 13: *Objectives About Ensuring Maintenance of Faculty-to-Student Ratios were Fully Met* – p. 28
- Table 14: *Objectives about Parental Participation in the Program were Fully Met* – p. 28
- Table 15: *Breakdown of Student Sample by Demographic Factors* – p. 30
- Table 16: *The Post-Match Groups of SA and Comparison Students are Comparable* – p. 32
- Table 17: *Confirmatory and Exploratory Research Questions* – p. 33
- Table 18: *Summer Advantage Participation is Associated with Higher DIBELS Scores* – p. 34
- Table 19: *Kindergarten Participation in SA is Associated with Higher DIBELS Next Scores* – p. 35
- Table 20: *Preliminary Effect Sizes* – p. 36

Executive Summary

Program Description

Summer Advantage (SA) is a voluntary, five-week intensive summer learning program that provides summer enrichment to elementary school students to help mitigate summer learning loss. The program, which has the explicit goal of holding student literacy scores steady throughout the summer months, targets low-income students, who tend to experience the steepest declines in learning over the summer. By reducing summer learning loss, the program expects to improve student literacy outcomes. On average, SA delivers services to more than 750 kindergarten through fourth grade students in the Roaring Fork School District (RFSD) which serves a mountain community in Colorado’s western slope. There is no cost to students to attend the programs, but the program uses different funding sources to underwrite the costs of serving students. The program receives funding for some of these students through Mile High United Way (MHUW) Social Innovation Fund (SIF) funding. The Colorado State Board of Education has identified RFSD as a “Closing the Achievement Gap District,” where raising the academic achievement of non-white students is a high priority.

Prior Research and Study Design

Augenblick, Palaich and Associates (APA), the independent evaluator for Summer Advantage, conducted this rigorous, five-year evaluation study as part of a SIF grant through Mile High United Way. The Summer Advantage program is modeled off of the Building Education Leaders for Life (BELL) summer program in Boston and New York, which was evaluated by the Urban Institute with a randomized controlled trial. There have been no previous formal studies of Summer Advantage’s adaptation and implementation of the BELL program in Colorado. APA’s five-year evaluation of the program is intended both to document the fidelity of implementation of the Summer Advantage program in the Roaring Fork Valley School District and to evaluate the impact of the program on student literacy outcomes at the end of the summer.

Level of Evidence Targeted

APA’s five-year study targeted a “moderate” level of student impact evidence – as defined by CNCS evaluation guidelines – and was conducted from 2012-2017, with student impact data collected for the 2014, 2015, and 2016 summer sessions. This evaluation was unable to pursue a “strong” level of evidence as defined by CNCS, because this standard requires that programs be studied using random assignment or a state or national level multi-site study. In this case implementing a randomized controlled trial which randomly assigned certain children to participate in the Summer Advantage program and others to receive no such support was impractical and ethically objectionable to both the program and school district involved. Similarly, a multi-site study was impossible given the scope of the Summer Advantage program in the Roaring Fork Valley. Given the availability of strong quasi-experimental methods to conduct education research, this evaluation expects to establish a moderate level of evidence using a propensity score matching approach.



Evaluation Measures and Analysis

To measure the fidelity with which the program is implemented according to its stated plans, APA relies on document review, interviews with program and district leaders, focus groups with program teachers, and a site visit each summer to gather data on program implementation fidelity. For the program's impact analysis, APA is examining the impact on participating students using the district-administered literacy assessment, Dynamic Indicators of Basic Early Literacy Skills (DIBELS) Next.¹ The analysis of these assessment scores involves using propensity score matching to generate a comparison group of students with similar demographics and spring assessment scores (the pre-test) who did not participate in Summer Advantage. The spring assessment scores for both the comparison group and the Summer Advantage student group are gathered and analyzed. After the summer program is delivered, the analysis then uses a Hierarchical Linear Model to estimate the program effect on both student groups' fall literacy scores (the post-test).

This report combines findings across three SA summer sessions. Data are pooled so that results from the 2014 summer cohort are combined with results from the 2015 and 2016 SA cohorts.

Overall Findings

Program Implementation

Studying program implementation fidelity is a critical element of any education program evaluation. The goal of studying implementation fidelity is to understand the key elements that make up a particular program, then to document how those elements were actually implemented on the ground as planned. These steps are essential to establishing a logic chain that verifies a program's key components are linked to outcomes that the evaluation attempts to measure, including impacts on teachers or students. APA conducted a full implementation study of the SA program in 2013. This study, which included a series of focus groups with teachers and principals, interviews with district leaders, extensive reviews of program documents, and site visits to the Summer Advantage program, found that the program was implemented overall in accordance with its intended design. Since the full implementation study in summer 2013, APA has conducted implementation monitoring in 2014, 2015, and 2016. This monitoring included similar, but less intensive data gathering each year to verify that no significant modifications were made to the program. APA's implementation monitoring included all SA students in Glenwood Springs, Sopris, and Basalt elementary schools.²

Over the three years of implementation monitoring, APA found that Summer Advantage was implemented with fidelity every summer and met the program's implementation goals. These included

¹ Although the Summer Advantage program assesses participating students using the STAR assessment during the program, STAR assessment scores were not available for students who did not participate in Summer Advantage. For this reason, the impact evaluation focuses only on the outcome of fall DIBELS scores.

² The Glenwood and Sopris school sites are combined during the summer, to form the Glenwood/Sopris Summer Advantage site.



identifying and recruiting students who met program criteria; recruiting, hiring, and training qualified staff; building strong relationships with school and district-level leaders; identifying schools; teaching academic content and providing enrichment experiences using an appropriate curriculum aligned to district objectives; maintaining appropriate instructor/student ratios in classrooms; and maintaining clearly communicated program expectations with parents. Achieving these goals reflects the program's significant success in building connections with parents and education and community leaders. It also reflects the program's continued ability to effectively communicate expectations and implementation goals to staff at all levels and to obtain staff buy-in for maintaining program fidelity.

Student Outcomes

Gathering and analyzing data across three summer sessions, APA found a statistically significant and positive impact of SA on student reading performance for kindergarteners and 1st graders. Kindergarten students who participated in SA scored 15 percentage points higher on fall assessments than similar students who did not attend Summer Advantage. First grade students who attended SA scored six percentage points higher on fall assessments than similar students who did not attend Summer Advantage.

Introduction

This is the final Mile High United Way (MHUW) Social Innovation Fund (SIF) evaluation report for Summer Advantage (SA), sponsored by Summit 54 in Colorado’s Roaring Fork Valley. This report has two main components: (1) an implementation monitoring review of SA over four summers (including the program’s implementation in summer 2013, 2014, 2015, and 2016) and (2) an impact analysis of SA (looking at the impacts of the 2014, 2015 and 2016 years of the program).³ This report presents the implementation monitoring and impact evaluation components of the study separately because they involve different research questions and, to some extent, different student samples. The final section of the report presents conclusions, recommendations, and anticipated next steps for the evaluation.

SA is a voluntary, five-week intensive summer learning program that provides summer enrichment to elementary school students to help mitigate summer learning loss. The program, which has the explicit goal of holding student literacy scores steady throughout the summer months, targets low-income students, who tend to experience the steepest declines in learning over the summer months. By reducing summer learning loss, the program expects to improve third grade literacy outcomes. SA delivers services to more than 750 kindergarten through fourth grade students in the Roaring Fork School District (RFSD) which serves a mountain community in Colorado’s western slope. Some of these students have their SA attendance funded through MHUW SIF and some have their attendance funded through other means. The Colorado State Board of Education has identified RFSD as a “Closing the Achievement Gap District,” where raising the academic achievement of non-white students is a high priority.

WHAT IS SUMMER ADVANTAGE (SA)?

SA is a five-week summer reading and math program designed to reduce summer learning loss, and to provide enrichment particularly for children from lower income backgrounds. SA receives funding support from external organizations including Summit 54 and Mile High United Way through the Social Innovation Fund.

APA Consulting (APA), an independent evaluation and research firm founded in Denver in 1983, conducted a five-year evaluation of SA, funded through MHUW SIF. This report covers all five years of APA’s evaluation activities. Year 5 evaluation activities focused on kindergarten through third grade students from three of RFSD’s four public elementary schools: Glenwood Springs Elementary, Sopris Elementary, and Basalt Elementary.

Overview of the Implementation Monitoring Analysis

APA’s evaluation of SA builds on findings from prior research on the Building Education Leaders for Life (BELL) summer programs (Chaplin & Capizzano, 2006), and is also informed by the yearly

³ The implementation monitoring at times includes data pertaining to SA programming across the entire Roaring Fork School District. However, one school (Crystal River) and a grade level (fourth) were not included in APA’s impact evaluation. The impact analysis looks only at students in kindergarten through third grades at Basalt, Glenwood Springs, and Sopris Elementary Schools. While impact evaluation findings cover the 2014-2016 years of the SA program, the implementation evaluation and monitoring findings cover the 2013-2016 program years.

implementation study APA completed in 2013. The 2013 implementation study used data collected in 2012 and 2013 in the Roaring Fork School District. The study found that SA has a clear theory of change⁴ and is implemented with fidelity. In the subsequent years including 2014-2016 APA did not conduct full implementation studies but instead conducted implementation monitoring to track the extent to which the program maintained overall fidelity to its intended implementation model.

APA's implementation monitoring analysis examined SA's summer implementation at sites serving children from three RFSD elementary schools. APA conducted focus groups with teachers, teaching assistants (TAs), SA administrative staff, and SA national program staff and a site visit to the RFSD school district during each summer to observe program operations. APA also continued to monitor SA internal data related to program implementation.

Consistent with findings from APA's 2013 implementation study, APA found that SA continues to be implemented with fidelity in Colorado. The SA program from 2014-2016 was overall implemented in accordance with organizational expectations and with the implementation goals outlined in the contract between Summit 54 and MHUW. Specifically, SA was able to recruit, hire, and train staff; identify at least three schools from which to recruit students (in 2015 and 2016 there were two SA program sites serving children from three RFSD schools); identify and recruit students who met SA criteria (e.g. students from low-income households, students at risk of summer learning loss, students whose families could meet SA attendance and parental involvement requirements); assess students using the STAR assessment⁵; build strong relationships with school- and district-level leaders; build fidelity to the SA program model among site program managers, teachers, and program staff; provide academic content as well as enrichment experiences. These achievements reflect the program's significant success in building connections with parents, educators, and community leaders in the Roaring Fork Valley. They also reflect the program's continued ability to communicate expectations and implementation goals to staff at all levels, and to instill a high level of staff buy-in to the program.

Overview of the Impact Analysis

In 2014, APA conducted the first year of a multiyear analysis of SA's impacts on student academic performance. APA's impact analysis compares the reading skills of students who attended SA to those of similar students who did not attend SA. APA's 2014 Year 1 impact analysis established processes and procedures that the research team continued to use throughout the multiyear study. This facilitated APA's pooling of data from across years of the SA program to build up larger sample sizes of participating students.

⁴ A theory of change provides a model (usually a visual diagram, or "logic model") of the assumptions about how the SA program achieves expected outcomes.

⁵ The Summer Advantage program uses the STAR assessment for internal progress monitoring over the course of the program. The school district does not use the STAR assessment. Because STAR scores are available only for students who participated in Summer Advantage, the impact evaluation uses the DIBELS assessment administered by the district as the outcome measure.



In Year 1, the APA research team was able to successfully establish processes for exchanging and managing sensitive data files with the district; matching students to identify a balanced treatment and comparison sample; and creating and applying statistical models to analyze student performance data. Schools in the Roaring Fork School District administer the Dynamic Indicators of Basic Early Literacy Skills (DIBELS) Next assessment as part of their compliance with Colorado's Reading to Ensure Academic Development (READ) Act (CO HB 12-1238). The assessment provides a tool to measure student reading progress across districts. Schools also administer Northwest Evaluation Association (NWEA) Measures of Academic Progress (MAP) assessments, which APA uses to match students who did and did not participate in SA.

To achieve a moderate level of evidence of program impacts on student achievement, APA compared DIBELS performance between SA students and similar, non-SA students in RFSD. To do this, APA used a sampling technique called Propensity Score Matching (PSM). After completing the sampling and controlling for student characteristics, school location, and prior student performance, the researchers compared the fall DIBELS scores of SA and non-SA students. Researchers analyzed DIBELS scores of students from three out of the four RFSD elementary schools that participated in SA during the summers of 2014, 2015, and 2016 (the fourth school, Crystal River, was outside of the scope of the current evaluation). APA's analysis for this final report includes data pooled from the 2014-2016 program years.

Summer Advantage

SA is a voluntary summer learning program for students. In 2016, SA completed its fifth year in RFSD. This section describes SA's program, partnerships, history, and goals.

History

Summer Advantage USA is a national program first developed in Indiana. SA was originally modeled on the BELL summer program out of Boston and New York. The BELL program operates primarily in urban areas with high populations of academically underserved children.

In 2005, researchers worked with the Urban Institute to evaluate the BELL program. The authors performed a randomized controlled trial (RCT) study of a sample of 1,087 children in first through seventh grades who applied to participate in the BELL summer programs in New York and Boston in summer 2005 (Chaplin & Capizzano, 2006). The researchers were able to collect complete test score data from 835 of the sample participants, amounting to a response rate of 78 percent for both the control group and the treatment group. The study authors were able to demonstrate a strong level of evidence of the BELL program's effectiveness. They found an improvement in reading test scores equivalent to approximately two additional months of reading instruction for the BELL participants when compared to their control group peers (Chaplin & Capizzano, 2006). Additionally, the researchers found that the program, as implemented, had an impact on summer learning activities and parental involvement in reading (Chaplin & Capizzano, 2006).

SA is an adaption of the BELL program, with key differences in design and setting. In particular, (1) SA decreases the summer school dosage of the BELL program from six weeks to five, due to district-program agreements; (2) SA expands the model to a new geographic region (Colorado); (3) It operates in a western state, where school districts enjoy a higher degree of local control than in some other parts of the U.S.; (4) The SA program includes kindergarteners; and (5) it operates in a rural mountain setting, as opposed to the primarily urban setting where the BELL program has typically operated.

Programming

SA takes place over five weeks during the summer, operating five days a week for six and half hours a day. On Monday through Thursday, students receive both literacy and math instruction in the morning followed by two hours of enrichment activities in the afternoon, including art, drama, and physical education. On Fridays, SA brings in inspirational speakers, takes students on field trips, or engages students in other activities.

One significant component of the SA program is its culture of academic achievement. Staff members are committed to the idea that all children can achieve academic success. Staff refer to SA participants as "scholars." SA also emphasizes parental involvement, encouraging parents to support their children at home and requiring high student attendance rates. Parents are also encouraged to participate in SA field trips and enrichment activities.

SA employs one academic teacher and one TA for every 24 scholars. All staff undergo training prior to the start of the program. Each academic teacher is required to have a minimum of three years teaching experience, as well as a teaching license. Enrichment teachers must show content knowledge in the area they teach and must have previous experience working with children, but do not have to be certified teachers. TAs are generally college-age students working towards education degrees. They usually have previous experience with children or are looking to gain practical experience in elementary education.

SA uses a nationally recognized summer school curriculum for kindergarten through eighth grade students. The program includes math and reading, along with weekly themed activities that build on each other. The program also allows for periodic assessments of student progress.

Partnerships

SA maintains multiple community partnerships. The program has built these partnerships with the help of Summit 54, a nonprofit organization focused on building community supports to benefit low-income students and help them to attend and graduate college. The founders of SA, Tony and Terri Caine, live in the nearby community of Aspen, which has a robust network of donors and community organizations, and are able to take advantage of their many relationships to build community support for SA.

Along with these community partnerships, SA also has partnerships with RFSD school and district leaders. SA works closely with each school principal and with the district as a whole and has a memorandum of understanding (MOU) outlining the terms and expectations of its relationship with the district. This MOU establishes the expectations that schools will help SA recruit and review student applicants; that RFSD will provide facilities for the SA program; and that RFSD will provide transportation for SA student attendees for the duration of the program.

Further, SA benefits from partnership grant funding. In 2012, Summit 54 received a \$50,000 grant from the Colorado Department of Education to provide breakfast and lunch every day of the SA program. SA also receives a grant of approximately \$236,000 per year (from 2012 through summer 2017) from the SIF program administered in Colorado by Mile High United Way. Summit 54 provides matching funds as part of SIF matching expectations.

Goals

Researchers focusing on differential opportunities as an underlying cause of an academic achievement gap have focused their attention on children's learning experiences outside the formal school year such as experiences during summer. Barbara Heyns first documented that student achievement gaps did not remain stable over the summer months, but expanded at a faster rate than during the school year (Heyns, 1978). In other words, schools likely act as a stabilizing force for achievement gaps and when children are not in school, those gaps widen (*Id.*). This initial finding of expanding achievement gaps during summer months out of school has been replicated by a number of researchers (Alexander, Entwisle & Olsen, 2007; Downey, Von Hippel & Broh, 2004; Phillips & Chin, 2004).

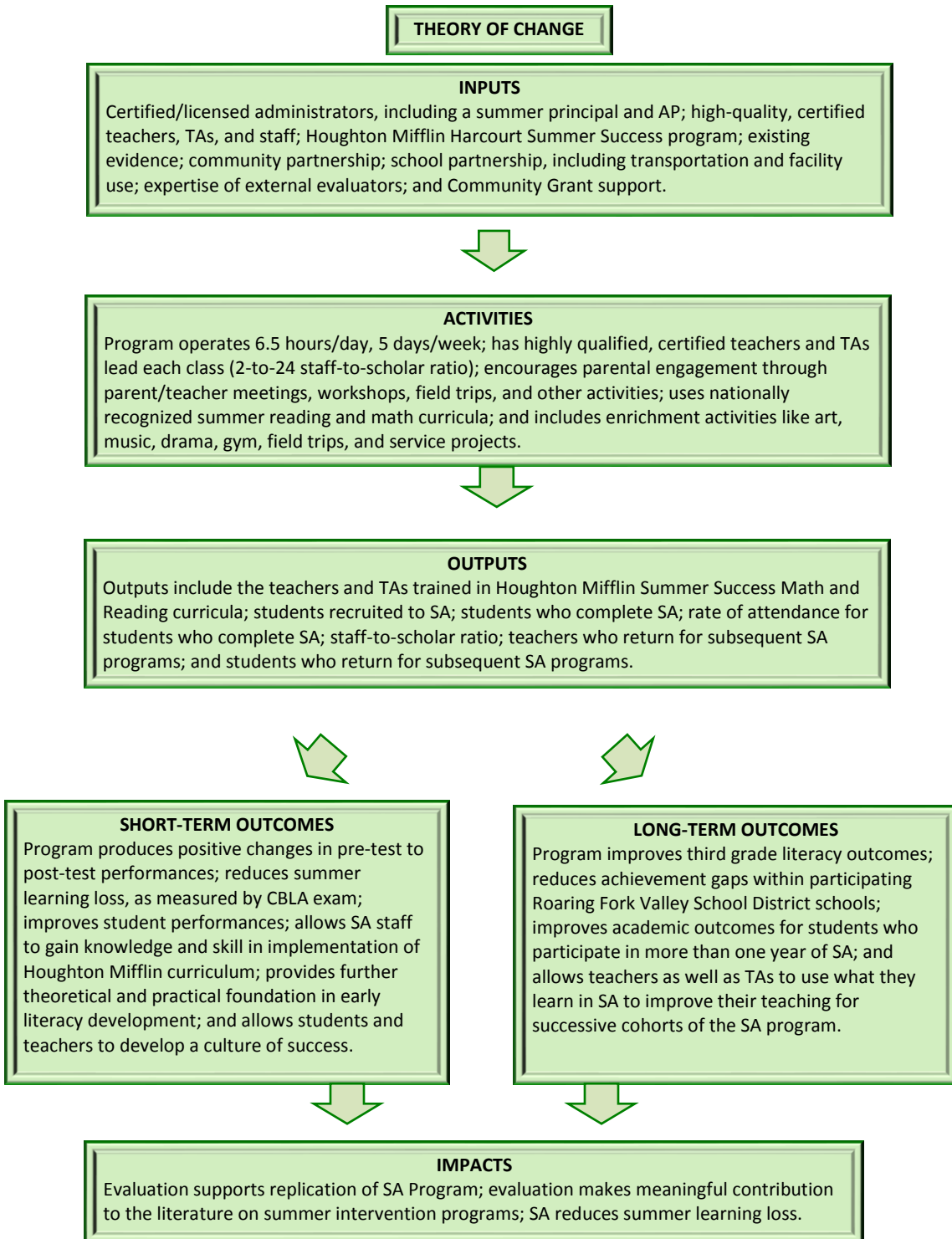
All students lose some amount of learning during the summer, when they are less likely to be actively engaged in learning and structured schoolwork (Fairchild & Boulay, 2002). This learning loss includes both factual knowledge and procedural knowledge, such as how to learn or participate in a classroom setting (*Id.*). Overall, students lose about one month of learning or about one tenth of a standard deviation of their spring test scores (Cooper, Nye, Charlton, Lindsay & Greathouse, 1996). Students tend to lose more learning in math than in reading, perhaps because of the greater opportunity for parents to maintain reading progress over the summer (*Id.*). The larger learning loss experienced by less-advantaged children over summer breaks likely occurs because children with lower socioeconomic status experience fewer learning opportunities at home and when not in school than students of higher socioeconomic status (Alexander, Entwisle & Olsen, 2001). These learning opportunities could include opportunities such as going to museums or the zoo with parents, reading at home, or attending an educational summer camp.

Further research into the effect of summer school on expanding achievement gaps shows that the expansion of the gap over the summer is likely more profound than changes in achievement gaps over the course of the school year. A study in Baltimore found that even when black and white students had similar achievement scores when starting first grades, their test score changes over the summer created an achievement gap of about half a standard deviation in only two years (Entwisle & Alexander, 1992). This means that even if students have an equal opportunity during the school year to keep pace with their fellow students, differences in summer experiences can still create a dramatic achievement gap in relatively little time. This finding suggests that summer interventions to prevent learning loss are especially important during early grades to avoid an ever-broadening achievement gap (Schacter, 2003). Summer programs, like SA, can “mitigate learning loss and could even produce achievement gains” (p. xiii).

WHAT IS SUMMER LEARNING LOSS?

Summer learning loss is a well-documented phenomenon wherein students lose math and literacy skills during their time away from school. It disproportionately affects lower-SES students, who tend to spend their summers in lower-quality environments, having fewer enriching experiences than their higher-SES peers. It contributes to the larger income-based achievement gap in the U.S. education system. Summer programs seek to decrease this loss.

With this research base in mind, SA makes itself open to all RFSD students, but prioritizes students from lower-income backgrounds. In this way, SA aims to reduce summer learning loss among lower-income students, “leveling the playing field” of education, and decreasing the income-based achievement gap. SA’s theory of change is that learning loss can be reduced for students when they are provided with high-quality instruction throughout the summer months. The SA theory of change, illustrated below, outlines SA’s inputs, activities, outputs, and intended impacts. The theory of change is an iterative tool, meaning that it provides a framework for planning, implementation, and evaluation of SA, both throughout the MHUW SIF grant term and beyond. If SA is implemented with fidelity, then its projected outputs should translate to positive outcomes for scholars.



Implementation Analysis

This section discusses APA's complete SA implementation analysis, covering the implementation analysis background, key questions and activities (methods), and findings over the 2013-2016 summer program years.

Background

APA conducted a full implementation study of the SA program in 2013. This study was designed to help determine if SA was implemented with consistency and fidelity to its stated program model.

WHAT IS THE PURPOSE OF AN IMPLEMENTATION ANALYSIS?

An implementation analysis helps determine if a program is being implemented with consistency and fidelity to its stated program model or design. It usually involves researching a program's stated operation plans, reviewing program materials, interviewing involved parties, conducting observations of programming and operations, and synthesizing data through qualitative analysis.

To conduct a full implementation analysis of SA in RFSD in 2013, APA (1) reviewed key program materials, such as training manuals and program guides; (2) conducted a summer 2013 site visit to RFSD to directly observe program operations; (3) conducted focus groups with SA academic teachers and enrichment teachers; and (4) conducted interviews with district leaders, school principals, SA program leaders, and SA program managers. APA analyzed the data produced through these efforts to produce an implementation study report. The report, completed in November 2013, found that SA

- Launched in a new state (Colorado) and setting (rural mountain community) with consistent implementation across schools and with fidelity to program expectations and intended design;
- Met student enrollment, attendance, and programming dosage goals;
- Met goals for summer school teacher training and curriculum delivery;
- Recruited staff who met program expectations for experience, motivation, and attendance;
- Offered a curriculum that teachers and staff perceived to be well-structured, appropriate, and aligned with district academic expectations; and
- Met internal evaluation goals for teachers, with each teacher receiving at least two formal observations, followed by feedback from SA staff.

Since the full implementation study in summer 2013, APA has conducted implementation monitoring in 2014, 2015, and 2016. APA's implementation monitoring sample includes all SA students in Glenwood/Sopris and Basalt elementary schools (including fourth graders and students who were later released from the program for failing to meet attendance requirements). Over the three years of implementation monitoring, APA found that Summer Advantage was implemented with fidelity every summer.

Research Questions and Activities

Implementation monitoring activities in 2016 were similar to previous summers and included:



- A site visit in summer 2016 to directly observe program operations;
- Four focus groups with a total of 37 SA teachers (two focus groups for Sopris and Glenwood Springs teachers, who shared a program site, and two for Basalt Elementary teachers);
- Focus groups with 22 SA TAs;
- A program document review;
- An interview with Summit 54 staff members; and
- Informal interviews with SA national program staff.

APA used research questions to guide the implementation analysis, including both student-level questions and program-level questions. Table 1, below, lists the questions.

Table 1: Implementation Analysis Questions

Question	Level
1. How many students complete the program?	Student
2. What are the attendance rates for students who complete the program?	Student
3. How many scholars return to the program in subsequent years?	Student
4. What are the attendance rates for teachers?	Program
5. What is the intended student-to-teacher ratio, and is this ratio achieved?	Program
6. What implementation challenges do program staff face?	Program
7. Are staff trained according to program expectations?	Program
8. Is the program able to recruit staff whose qualifications meet program requirements?	Program
9. What, if any, other summer academic programs exist in the district?	Program

Working with Summit 54 and SA, APA identified nine program objectives that could be monitored in for fidelity or quality of implementation. The table below provides a description of each objective and specific goals associated with that objective.

Table 2: Implementation Analysis Program Objectives to be Monitored

Program Objective	Measure
A. Recruit students	<ol style="list-style-type: none"> 1. Recruit 500 students in one district. 2. Recruit high need students.
B. Recruit qualified staff	<ol style="list-style-type: none"> 1. Recruit staff with a passion for working in high-need student settings. 2. Recruit academic teachers who have at least three years of experience teaching, hold teacher licensure, and have at least a BA. 3. Recruit enrichment teachers who have at least three years of experience teaching and have at least a BA. 4. Achieve a near 100 percent teacher attendance rate during the program.
C. Train teachers	<ol style="list-style-type: none"> 1. Teachers complete online training modules. 2. Teachers participate in a mandatory week-long professional training session prior to the program start. 3. Teachers view training sessions as useful and high-quality. 4. Teachers are evaluated at least twice during the program.
D. Build program-district relationships	<ol style="list-style-type: none"> 1. Achieve buy-in and support for the program from district leaders. 2. Achieve buy-in and support for the program from school principals.
E. Assess students pre- and post-program	<ol style="list-style-type: none"> 1. Assess students at the beginning and end of the program using the STAR.
F. Provide students with appropriate daily academic instruction and enrichment.	<ol style="list-style-type: none"> 1. Students miss no more than 2-3 days over the course of the program. 2. Program staff call home for absent students. 3. Program releases students who do not meet attendance expectations. 4. Students participate actively in class. 5. Students participate in field trips and enrichment activities.
G. Ensure that teachers and staff use culturally competent curriculum.	<ol style="list-style-type: none"> 1. Curriculum is consistent with district expectations. 2. Curriculum is consistent with student cultural needs.
H. Ensure maintenance of faculty-to-student ratios.	<ol style="list-style-type: none"> 1. Minimum of 1 teacher and 1 TA per 24 students, with a goal of 19 students per classroom.
I. Encourage parent participation.	<ol style="list-style-type: none"> 1. Parents are required to attend a mandatory parent orientation meeting prior to their children being accepted into the program. 2. Parents sign contracts with SA. 3. Parents attend mid-summer parent-teacher conferences. 4. Parents participate and sign nightly reading logs. 5. Parents are encouraged to attend end-of-session graduation with lunch.

During the course of each summer’s implementation evaluation monitoring, APA investigated each of the objectives listed in the table above. Information and findings in each area are provided in the “Research Findings” section, below.

Research Findings

Overall, APA finds that Summit 54’s summer SA program was implemented in accordance with organizational expectations and with the implementation goals outlined in the contract between Summit 54 and MHUW. The program was able to:

- Identify and recruit students who meet SA criteria;
- Recruit, hire, and train qualified staff;
- Build strong relationships with school and district-level leaders;
- Identify at least three schools from which to recruit and serve students;
- Assess students using the STAR;

- Build strong fidelity to the SA program among site managers, teachers, and program staff;
- Teach academic content and provide enrichment experiences to participating students;
- Use an appropriate curriculum aligned to district objectives;
- Maintain appropriate instructor/student ratios in Summer Advantage classrooms; and
- Maintain clearly communicated program expectations with parents.

This list of achievements reflects the program’s significant success across multiple summers in building connections with parents as well as education and community leaders in the Roaring Fork Valley. It also reflects the program’s continued ability to effectively communicate expectations and implementation goals to staff at all levels, and to instill a high level of buy-in from these staff to maintain program fidelity. The “Performance on Program Objectives” subsection, below, details implementation analysis findings in regards to each of the objectives (A through I) listed in Table 2, above.

Performance on Program Objectives

Objective A. Recruit Students

Table 3: Objective A was Fully Met

Measure	Partially Met	Fully Met	Notes
1. Recruit 500 students in one district.	✓		Accomplished 3 out of 4 years
2. Recruit at least 51% high-need students.		✓	Achieved this objective every year

Source: APA analysis, 2013-2016

The two measures for this objective were for SA to (1) recruit 500 students in one district and (2) recruit high-need students. As Table 4, below, illustrates, SA surpassed its student recruitment goal in three of the four years. (In 2013, SA had a goal of recruiting 400 students). SA fell 45 students short of its goal in 2016.

Table 4: Summer Advantage Continues to Meet Enrollment Goals

School	Grade	2013 Enrollment	2014 Enrollment	2015 Enrollment	2016 Enrollment
Basalt	K	76	42	41	43
	1	55	59	56	37
	2	57	47	57	37
	3	39	55	43	42
	4	-	-	-	-
Glenwood/Sopris	K	85	85	70	58
	1	113	75	84	63
	2	61	78	56	70
	3	70	61	69	65
	4	56	45	36	50
Total		415	547	512	465

Source: SA 2013-2016

When looking at this table, it is important to note that not all students actually started or completed the program. In each year, several students were “dismissed” from the program for various reasons. Such reasons might include lack of initial participation (i.e. enrolling but never showing up), infrequent or erratic attendance in the program, or other circumstances signifying a student’s inability to fulfill the expectations of the program. The SA program does expect some attrition each year.

The figures in Table 5, below, show the numbers of students in 2013 to 2016 who enrolled in and completed SA.

Table 5: Completion and Attendance Rates Remain High

Year	2013	2014	2015	2016
Basalt Average Attendance	97%	96%	93%	92%
Sopris/Glenwood Average Attendance	93%	93%	91%	86%
Total Average Attendance	95%	94%	92%	88%

Source: APA analysis, 2013-2016

Table 5 reflects the fact that SA undertook significant effort to enroll students for the summer 2016 program. Teachers and school principals at Basalt, Sopris, and Glenwood elementary schools made strong recruitment efforts. Teachers donated time to develop lists of students whom they identified as having the most academic needs. In many cases, teachers sent letters home to inform the parents about SA as a summer opportunity. SA staff also held meetings with parents to inform them about SA. For children designated as high-need who were not yet enrolled in SA, school staff made phone calls to families and sent letters home, using Spanish translators if necessary to communicate with parents. In 2016, SA did not meet the first measure of Objective A (Recruit Students), which is to recruit 500 students. These recruitment tactics were similar to ones used in previous years.

The second measure of Objective A (Recruit Students) is the recruitment of high-need students. SA targets “at-risk” students, where a student’s eligibility for free and reduced-priced lunch (FRL) is used as a proxy for at-risk status. SA aims to recruit at least 51 percent at-risk students. SA targets these students in an effort to help close the achievement gap that exists between students from more and less socioeconomically privileged backgrounds.

Based on enrollment data, the program operated every year in accordance with national SA expectations with regard to identification and recruitment of high-need students to the program. Using district-provided information, APA found that roughly 84 percent of students who attended SA in 2016 were FRL-eligible. Table 6, below, shows SA enrollment data by student demographic groups, including test scores, gender, racial and ethnic group, special population, FRL eligibility, and elementary school attended during the regular school year.

Table 6: Demographic Characteristics of Summer 2016 SA Students, by Completion Status

	Completed Treatment	Started Treatment But Did not Complete
Fall DIBELS Composite	176	115
NWEA Spring Math	178	176
Spring DIBELS Composite	215	139
Male	49%	53%
Hispanic	85%	76%
White	14%	24%
Other Race	1%	0%
IEP	9%	12%
English	24%	29%
Spanish	76%	71%
Other Language	0%	0%
Fully English Proficient	11%	0%
Limited English Proficient	60%	67%
Not English Proficient	29%	33%
FRL	84%	71%
Basalt	39%	30%
Sopris/Glenwood	61%	70%
N	480	32

Source: RFSD, 2016

Objective B: Recruit Qualified Staff

Table 7: Objective B was Fully Met

Measure	Partially Met	Fully Met	Notes
1. Recruit staff with a passion for working in high-need settings.		✓	SA staff recruitment activities seek out passionate, motivated individuals who often return year after year.
2. Recruit academic teachers with 3+ years teaching experience, teacher licensure, and at least a BA.		✓	The SA hiring process is rigorous and competitive, resulting in high-quality teachers. Focus group data indicates academic teachers continue to meet experience and licensure requirements.
3. Recruit enrichment teachers with 3+ years teaching experience and at least a BA.		✓	The SA hiring process is rigorous and competitive, resulting in high-quality teachers.

Measure	Partially Met	Fully Met	Notes
4. Achieve a near 100 percent teacher attendance rate during the program.		✓	Though APA does not have program data on staff attendance rates, SA staff and program leaders in focus groups and interviews expressed high awareness of attendance expectations and very low rates of absenteeism.

Source: APA analysis, 2013-2016

A review of program materials and interviews with program leaders indicates that SA continues to utilize a rigorous process to screen teacher applicants for the program. The organization’s national team, headquartered in Indiana, has significant involvement with the interviewing and screening of applicants and has a dedicated staff person to oversee recruitment activities.

The program also has an innovative approach to help build continuity into the hiring process and to tap into the skills and experience of teachers with a history of success working for the program. The program accomplishes this by operating a team of paid program alumni who are brought together each spring to assist with the screening process. This team is made up primarily of former SA teachers who have been recommended by school or district partners to serve in this capacity. The national SA program then trains these alumni on what to look for when reviewing prospective teacher candidate resumes and how to properly screen candidates. Once candidates pass through the screening process, they can enter an interview process, which is also overseen by national SA staff. As a result of these efforts there have been no reported issues with teacher recruitment over the past several years of the program’s operation.

The measures for Objective B (recruit qualified staff) are that recruited staff should: (1) have a passion for working in high-needs settings; (2) have at least a BA, have at least three years of teaching experience, and hold teacher licensure (academic teachers); (3) have at least a BA and at least three years teaching experience (enrichment teachers); and (4) achieve a near 100 percent attendance rate during the program. Teacher Assistants (TAs) are also expected to have some level of experience and engagement with education. For example, TAs may be undergraduate students pursuing education majors, or they may have past experience working as tutors or in summer programs. SA allows recent high school graduates who are attending college in the fall to potentially also serve as TAs. APA’s interviews with SA teachers highlighted how important TAs are to the program, especially in terms of providing classroom support. Many program teachers indicated that TAs play a critical role in providing consistency for students, managing student behavior, preparing classroom materials, and supporting day-to-day activities.

Since initial SA program implementation, staff recruitment has been facilitated by the fact that word about the program has spread to more teachers and staff in the district as well as to potential TA staff. When the program initially launched in 2012, it faced several recruitment hurdles, including a short time frame for recruitment activities, difficulty recruiting teachers and TAs to work in a mountain setting with few affordable housing options for staff, and a need to attract some of the district's most qualified teachers to work during the summer, when many educators view summer as a time to recharge and be away from the classroom.

After several years of program implementation in RFSD, SA has developed a positive reputation that enhances its ability to recruit teachers and TAs. The program is viewed by teachers as worthwhile and desirable to work for, and has proved effective in attracting its teachers to return in successive summers. Since SA calls for evaluations of all teachers each summer, recruiters can look at teacher evaluation records from previous summers to help select the highest-performing returning teacher candidates.

SA continues to offer SA teachers and TAs levels of pay that are generally viewed as fair and attractive. In addition, the program provides subsidized housing opportunities for SA staff who come from outside the Roaring Fork Valley. Non-local staff can take advantage of subsidized housing in Colorado Mountain College dormitories, or they can stay at a local hotel at a reduced price. These financial and housing incentives are viewed as important to attracting and retaining quality staff.

Teachers in APA's focus groups consistently expressed a strong passion for working with students over the summer to improve academic skills, especially high need students whose other summer learning opportunities are extremely limited. At both Sopris and Basalt, teachers consistently mentioned working outside of their contract hours in order to carry out program expectations, such as to have conferences with parents. Teachers across both schools strongly supported the goals and efforts of the program and were willing to work out of contract hours to support SA. Additionally, administrators across program years indicated that they were typically starting work on SA several months before the beginning of the program in order for the program to have a successful start. One administrator suggested they had put in 30 out-of-contract hours prior to the start of the program. Having such strong buy-in from staff is impressive, and it demonstrates the program's success in recruiting staff that are passionate about their work. It also has contributed over the past several program years to more consistent program implementation across school sites.

Focus group data also indicate academic and enrichment teachers were licensed teachers with multiple years of experience in the teaching profession. Many teachers also taught at RFSD during the school-year, which gave them familiarity with students and with district expectations. Several TAs said that working at SA gave them the opportunity to see if teaching is a career they wanted to pursue as a career full time.

While many teachers reported that they enjoy the experience of working for SA and that they would like to return to SA in future years, in previous years' teachers also reported a feeling of fatigue. These teachers explained that, after several years of teaching both during the school year and during the summer (for SA), they may want to take summer breaks. However, in 2016, no teachers reported a feeling of fatigue. In previous years, teachers and teaching assistants have suggested several ways in which the program can help continue to make itself an attractive employment prospect, including: 1) provide more opportunity for teacher input into which schools they are assigned to accommodate commuting and other concerns; 2) provide teacher assistants and teachers more input into the grade level where they are assigned to teach during the program; and 3) consider providing added pay for returning staff to recognize the value of their prior experience in the program.

In both 2015 and 2016, teachers interviewed expressed a desire for additional clarifications during the hiring process. In particular, some dual (enrichment and academic) teachers had misconceptions about which cohorts of students they would be working with. In some cases, in 2016, some TA's also indicated in focus groups that they were not made aware of their classroom assignment until immediately prior to the start of the program, and that more advance notification would be desirable. These issues initially affected staff ability to prepare lesson plans and materials. And while the interview process was generally reported as being clear, some teachers indicated a lack of clarity around job expectations, especially around scheduling requirements for parent-teacher conferences.

With regard to attendance (a measure of Objective B: Recruit Quality Staff), teacher focus groups agreed that the program clearly conveyed expectations. Teachers were uniformly aware of the program's strict attendance policy (for both teachers and students) and agreed that these expectations were critical to the success of this type of program, which operates over a very compressed time frame. In general, interview and focus group participants were impressed with the organization, scope, and goals of the SA program, and had a high level of overall buy-in to the program's expectations and requirements, including consistent teacher attendance.

Objective C: Train Teachers

Table 8: Objective C Was Partially Met

Measure	Partially Met	Fully Met	Notes
1. Teachers complete online modules.		✓	All teachers completed online modules.
2. Teachers participate in a mandatory week-long professional training session prior to program start.		✓	All teachers participated in mandatory training.
3. Teachers view training sessions as useful and high-quality.	✓		Some teachers expressed frustration with training redundancy for returning staff.
4. Teachers are evaluated at least twice during the program.		✓	Teacher evaluations were conducted.

Source: APA analysis, 2013-2016

Teachers overall across the years of APA's implementation monitoring expressed that they received adequate training to meet program expectations. In several years, some TAs and teachers indicated that more training for TAs on classroom and student behavior management techniques would strengthen TAs' contributions. Also in several years those staff who returned to SA after teaching in the program in prior summers, indicated that having to repeat the same online training modules was repetitive, however these returning staff also indicated that they appreciated having all of the SA staff together on one site for training.

The measures for Objective C (Train Teachers) are that: (1) teachers complete online training modules, (2) teachers participate in a mandatory week-long professional training session prior to the program start, (3) teachers view training sessions as useful and high-quality, and (4) teachers are evaluated at least twice during the program.

To achieve the measure that teachers complete online training modules, all SA teachers are required to complete an online course that includes a series of modules. Teachers must also pass online tests related to each module prior to starting their assignments. Some returning staff expressed that the modules could be "repetitive." However, new staff frequently expressed that the modules were a valuable means of providing familiarization with the program. Returning teachers were very appreciative of the program's efforts to reduce the redundancy of the online models by offering "refreshers" instead of full modules and by allowing people to "test out of" certain modules.

The second and third measures of Objective C (train teachers) are that: (2) teachers participate in a mandatory week-long professional training prior to the program start; and that (3) teachers view training sessions as useful and high-quality. Across program years all, or nearly all teachers participated in training. Some expressed a desire to differentiate training for returning teachers versus new teachers. They also expressed a desire for more training on program logistics (e.g. managing parent teacher conferences and using reading logs) during the training week. New teachers in 2016 indicated that, while they received general curriculum training, they could have used more training on day-to-day program operations.

In 2016, the character development program "Building Dreams" was replaced by a new program called "Crew". Crew was generally well received by the teachers. Crew was an extension of a program run during the school year in RFSD, and district teachers working in SA were therefore familiar with the program. However, if a teacher did not teach in RFSD during the school year, they reported receiving no training on how Crew functioned. Regardless, teachers appreciated the flexibility the program offered them compared to Building Dreams.

With regard to the fourth measure of Objective C, that teachers are evaluated at least twice during the program, teachers across program years generally spoke positively about the evaluation process.

Teachers were concerned about evaluation observations occurring too quickly, before routines could be established, and/or at awkward times. Additionally, teachers were worried that evaluations could be rushed because program leaders were sometimes working under tight deadlines. Teachers did, however, uniformly appreciate the collective feedback that was periodically given out to the whole staff. This feedback, they noted, offered valuable reminders of program goals and expectations. They also perceived the process to be appropriately transparent.

During site visits and interviews across program years, APA evaluators observed that program leaders, teachers, and site program managers at each school had clear and consistent understanding of the SA program’s expectations. Site program managers were trained in classroom observation and in using a common observation rubric. All teachers understood that they were to be evaluated at least twice over the course of the five-week program, that such evaluations were conducted with fidelity across program years, and that teachers received feedback based on these evaluations. Teachers also understood that evaluation data could be used in hiring decisions in future years.

Objective D: Build Program-District Relationships

Table 9: Objective D Was Fully Met

Measure	Partially Met	Fully Met	Notes
1. Achieve buy-in and support for the program from district leaders.		✓	Summit 54 has cultivated buy-in and support from RFSD, which continues to provide space to operate, transportation, and other maintenance and logistical supports.
2. Achieve buy-in and support for the program from school principals.		✓	School leaders had positive impressions of SA and provided important resources to SA.

Source: APA analysis, 2013-2016

Summit 54 co-founder Terri Caine, along with Summit 54 staff, have cultivated collaboration between RFSD and SA. Over the course of the past several years, RFSD and SA renewed a comprehensive MOU to help guide their collaboration. SA continues to make strong efforts to maintain a close rapport with RFSD leaders. RFSD continues to support SA by granting access to facilities, custodial services, food, and transportation. RFSD also provides financial support for the Crystal River Elementary School site (necessary since the Crystal River site does not receive MHUW SIF funding.) The relationship between SA and RFSD has also encouraged RFSD leaders to take active interest in supporting APA’s evaluation. RFSD has been responsive to data collection needs, providing APA with timely, evaluation-related data including student assessment data. RFSD also kept APA and SA apprised of potential policy changes including changes in assessments used by the district that could affect evaluation activities.

In conversations with APA, school and district leaders credited SA with filling a critical gap in RFSD’s education services for children – a gap created several years ago when budget cuts forced RFSD to

eliminate district summer school programming. The gap in summer education services means that children with working parents are often left unsupervised over the summer. With SA, students can get structured summer programming, and school leaders continue to indicate over the course of APA’s implementation monitoring that SA students tend to have fewer behavior problems at the start of the school year and need to spend less time re-learning school expectations.

School principals continue to be an invaluable resource for SA, providing services to the program such as bilingual translation services to help recruit students and families during the regular school year.

Objective E: Assess Students Pre- and Post-Program

Table 10: Objective E Was Fully Met

Measure	Partially Met	Fully Met	Notes
1. Assess students at the beginning and end of the program using STAR.		✓	SA began using STAR in summer 2014.

Source: APA analysis, 2013-2016

In 2014, SA switched from the ITBS assessment to the STAR assessment for internal measures of student academic growth. Teachers and program staff have indicated support for the use of the STAR assessment and the data it produces. Principals expressed that STAR better aligned to the RFSD school year curriculum. Teachers indicated the STAR assessment data is useful in helping differentiate instruction and that the system produces extremely timely reports that provide immediate feedback to educators.

Objective F: Provide Students with Appropriate Daily Academic Instruction and Enrichment

Table 11: Objective F Was Fully Met

Measure	Partially Met	Fully Met	Notes
1. Students miss no more than 2-3 days over the program.		✓	Attendance expectations were clear to students and families.
2. Program staff call home for absent students.		✓	Staff called home for absences, usually on the same day as the absence.
3. Program releases students who do not meet attendance expectations.		✓	Students who failed to show up for more than 2-3 days were released from SA.
4. Students participate actively in class.		✓	Curriculum components encourage student participation and engagement.
5. Students participate in field trips and enrichment activities.		✓	Students had weekly opportunities for field trips and enrichment.

Source: APA analysis, 2013-2016

SA strives to provide students with rigorous academic learning and enrichment experiences throughout the summer. The first three measures of Objective F are that: (1) students miss no more than two to three days over the course of SA; (2) SA staff call home for absent students; and (3) SA releases students who do not meet attendance expectations. SA has clear expectations about participation. Students are not permitted to miss more than two to three days throughout the five-week program, although exceptions are made for illnesses or extraordinary circumstances. This translates into an expectation of around 88 to 92 percent overall attendance. If a student misses more than two to three days without an extenuating circumstance, then SA managers may release that student from SA.

Across the two summer SA sites involved in APA's evaluation, the overall student attendance rate was 92 percent. This meets the program's expectations.⁶ APA believes part of this success can be attributed to program staff actively following up with families in instances of student tardiness or absence, usually on the same day of the absence.

The final two measures of Objective F are that: (4) students participate actively in class; and (5) students participate in field trips and enrichment activities. The program has selected curricular materials that include student participation as an important classroom component. Across program years, teachers in APA's focus groups also consistently indicated that student participation is a priority for their instruction. APA classroom observations during site visits, while not a representative sample of all the classes taught, suggest that student engagement and participation in class is indeed a high priority for teachers in the program. Teachers also expressed satisfaction with the flexibility and variety of field trips in 2016. Administrative staff had made it a priority to plan out Friday field trips in advance in 2016. Teachers noticed this change and commented that field trips felt more organized than in previous years.

⁶ This number excludes those students who were "released" according to SA protocol.

Objective G. Ensure that Teachers and Staff Use Culturally Competent Curriculum

Table 12: Objective G was Partially Met

Measure	Partially Met	Fully Met	Notes and concerns
1. Curriculum is consistent with district expectations.		✓	Houghton Mifflin summer school curriculum is valued and aligns with RFSD expectations. However, some teachers expressed concerns about alignment with Common Core.
2. Curriculum is consistent with student cultural needs.		✓	<p>With regard to the academic curriculum, overall alignment with student cultural needs is viewed as satisfactory. Some staff expressed concern that the phonics curriculum could be more aligned with Common Core.</p> <p>With regard to the Crew program instituted in 2016, staff were happy overall that it replaced Building Dreams, which was implemented in 2015. However, non-RFSD teachers felt the Crew program was unorganized. This may have been at least partially due to the fact that they had less familiarity with it.</p>

Source: APA analysis, 2013-2016

SA continues to administer the Houghton Mifflin curriculum. RFSD leaders and school principals indicated that this curriculum is seen as valuable and appropriate to the student population. It is the same curriculum RFSD used in its own summer school programs before they were eliminated. Teachers have expressed that the curriculum is generally effective, though in past years they were concerned about its alignment with Common Core standards. Teachers in past years also expressed concern with phonics components of the curriculum, which they suggested were not as effective for bilingual students and were outdated.

In 2016, several curriculum issues that were identified in APA’s prior year implementation monitoring appear to have been fixed. For instance, in one prior summer teachers reported that there were not enough material kits for all students, but in 2016, SA purchased new material kits and most students were able to have their own materials. One teacher did report being several books short in their classroom.

One issue that emerged in 2016 were challenges involving use of technology to support the curriculum. Some teachers in APA’s focus groups stated that they were forced to handle technological issues themselves, particularly involving usage of projectors, speakers and computers to implement the curriculum. In some cases, teachers were forced to bring their own devices. However, SA teachers also reported that SA was very responsive in addressing curriculum issues from previous years. They therefore expressed confidence that these new curriculum issues would be resolved by the following summer.

The summer of 2016 featured the implementation of the Crew program, a new character development program for students that was chosen to replace the Building Dreams character development program that was implemented in 2015. Building Dreams experienced several implementation challenges that APA identified in its 2015 implementation monitoring efforts, and as a result the program moved towards selection and implementation of a new program. Although some teachers in APA’s 2016 focus groups still had concerns about the new Crew program, it was viewed far more favorably than Building Dreams. The Crew curriculum builds off of a character development program already in place during the school year at RFSD. One of the major differences between Crew and Building Dreams is that Building Dreams required that the program be implemented during breakfast, which teachers in 2015 reported as creating significant implementation challenges that sometimes interfered with children having sufficient time to eat. Under the Crew program in 2016, teachers report that students are able to eat without any program taking place at the same time. Several teachers described Crew as “one of the better parts of the day.” Other teachers felt Crew lacked direction and described it as “wasted time.” Overall however, returning teachers who experienced both programs indicated that Crew was clearly an upgrade from Building Dreams.

Objective H: Ensure Maintenance of Faculty-to-Student Ratios

Table 13: Objective H Was Fully Met

Measure	Partially Met	Fully Met	Notes
1. Minimum of 1 teacher and 1 TA per 24 students, with a goal of 19 student/class.		✓	SA consistently aims to maintain ratios at or below 2:24. Site visit spot check observations indicated appropriate class sizes.

Source: APA analysis, 2013-2016

In general, over the four years of APA’s implementation evaluation and monitoring, SA consistently met its program goal to maintain classroom ratios at or below 2:24 teachers to students and to provide a minimum of one teacher and one TA per classroom. However, in summer 2016, several classes opened with 26 students. APA inquired as to the reasons for this challenge, and program site leaders indicated that they did not have control over the student enrollment distribution across grades, and that creating smaller class sizes was challenging when some grades turned out to have higher enrollment levels. Other staffing concerns included the desire to have a special education assistant/interventionist to support student needs, the potential need for additional technological staffing assistance, and the need for added nursing support. At Basalt, the nurse during the academic year was volunteering her time to help out during the SA program, however, SA site leaders did have to fill this role at times when the nurse was unavailable.

Objective I: Parents Participate in Program
Table 14: Objective I Was Fully Met

Measure	Partially Met	Fully Met	Notes
1. Parents are required to attend a mandatory parent orientation meeting prior to their children being accepted into SA.		✓	Parents whose children participated in SA attended the orientation.
2. Parents sign contracts with SA.		✓	Parents signed contracts during “parent night” at the start of the program.
3. Parents attend mid-summer parent-teacher conferences.		✓	Parents attended conferences, though feedback received indicated that the timing of the conferences was not always optimal.
4. Parents participate in and sign reading logs.		✓	Parents consistently read with their students, as evidenced by their signing student reading logs.
5. Parents are encouraged to attend end-of-session graduation with lunch.		✓	APA does not have specific data on parent attendance levels at the end-of-session graduation, but program leaders indicated that parents were strongly encouraged to attend.

Source: APA analysis, 2013-2016

SA expects parents to play an active role in supporting their children during the summer by ensuring as close to 100 percent attendance as possible, by attending parent-teacher conferences during the SA program, by reading to their children over the course of the summer, and by signing reading logs over the course of the summer so the SA program has assurance that reading is taking place at home. Parents sign a contract prior to the start of the SA program each summer, expressing their commitment to making sure their children are present and prepared for the program. Parents must attend at least two meetings (one parent night where the contract is signed, and one parent-teacher conference during the course of the program).

The program’s adherence and enforcement of these requirements was strong and consistent over all four years of APA’s implementation evaluation and monitoring. APA observed through SA teacher and staff feedback that, at least in part due to this consistently strong implementation, the program has been able to build a “network” amongst parents, students and teachers around the importance of keeping students academically engaged over the summer, particularly involving reading. SA has allowed for a new line of communication to be formed. For instance, one teacher at Sopris indicated that SA has allowed her to develop relationships with students before they start in her class the following fall. Furthermore, numerous teachers and school principals across multiple years of APA’s evaluation indicated that SA had a noticeable, positive effect on how ready students are to learn at the start of the next school year. These teachers and principals express that students who do not attend SA are more likely to require a period of behavior adjustment once school resumes in the fall, which is a drain on instructional time and on teachers’ ability to get classes off to a fast start at the beginning of each school

year. Students attending SA in the summer are much more likely to come to school ready to learn on day one of the school year, according to multiple teachers and principals that APA interviewed over the course of the past four years.

Network building was also seen through enhanced parent engagement for those parents whose children attend SA. SA teachers who teach in RFSD during the regular school year have noted that parent participation and engagement is enhanced for those parents whose children participate in the program. Teachers and principals also indicated that parents of SA students appear to be more comfortable joining their child during lunch or recess and that this increased participation of parents also affords teachers more opportunities to have informal conversations with the parents that can help keep them apprised of their child's progress in school over time. Several teachers also noted the fact that many parents would "hang out" when picking up their kids, and that this provided them an opportunity to engage with each other. Teachers indicated this is added engagement across parents enhances parents' ability to network amongst themselves, which helps strengthen and broaden the overall sense of community at the school both during the SA program and the following school year.

Since families are offered scholarships to participate in SA, SA makes it clear that a strong parent commitment is expected or the scholarship slot may be given to another student. Parents are expected to read with their child every night for at least 30 minutes and sign reading logs (turned in every Monday). Parents are also expected to help with homework over the course of the program. Teachers, principals, and program managers over the course of APA's four-year implementation evaluation and monitoring efforts expressed that, as result of the program's clearly communicated expectations, parents understood what was required of them and their children. Teachers told APA that parents were typically active and responsive and made sure that their child's homework was complete. Parents also consistently read with their students, as evidenced by their signing student reading logs consistently over the multiple years of APA's study.

Impact Analysis

The final impact results presented in this study come an analysis of pooled data from the 2014, 2015, and 2016 SA program years. The analysis plan for this evaluation compares students who participated in SA to similar students from RFSD who did not participate in SA. The group of comparison students is constructed using propensity score matching (PSM), a statistical technique which uses the demographic characteristics and pre-test scores of participants to match them to non-SA participants with similar demographics and pre-test scores. Comparing these groups allows APA researchers to estimate the effect of the SA group by comparing the differences in outcomes between SA participants and similar non-SA participants.

The analysis using the two matched groups compares the changes in student test scores between the spring assessment, which occurs before students attend Summer Advantage, and the fall assessment

after they have completed the program. To look at score changes, APA examined student scores on the DIBELS Next reading assessment, which measures literacy skills. APA used a multi-level analysis technique called hierarchical linear modeling (HLM) to control for the school-level characteristics of the different schools attended by students in the treatment and comparison group.

Background

All of the research questions in the impact analysis compare SA students to similar non-SA students identified using PSM techniques. The same group of comparison students was used for the analysis of each of the research questions listed below. APA identified the comparison group using a PSM that employed demographic variables and the students' DIBELS Next pre-test scores from the spring immediately prior to the SA program. Each comparison group student is uniquely matched to a SA participant student with similar demographic characteristics and pre-test scores. Because the resulting treatment and comparison groups are similar, any differences in outcomes between the two groups are likely to be attributable to SA participation, rather than to other differences between the groups of students. APA used the same PSM technique for the previous impact analyses.

After generating the comparison group, APA ran hierarchical linear modeling (HLM) regressions comparing outcomes between comparison group students and SA participant students. HLM is used when the outcome is measured at the individual level, but the treatment (i.e. SA program) is provided to groups of students.

Sampling Eligibility

For all research questions, students were included in the analysis sample only if they took the DIBELS Next exam in the spring prior to their participation (or non-participation) in SA and also in the fall immediately following their participation (or non-participation) in SA. Furthermore, students were required to participate in SA with a dosage level of at least 80 percent to be included in the treatment group. This means that students who did not complete the program or completed less than 80 percent of the program were not included in the impact study.⁷ There was a total of 925 eligible students (236 in 2016, 398 in 2015, and 291 in 2014). Student included in the sample were pooled over three years.

Constructing Comparison Groups

APA used PSM techniques to create comparison groups of non-participating students for each year of the analysis. In PSM, a propensity score is generated for each student – both SA participants and non-participants – describing the student's probability of attending SA. In order to identify the comparison group using PSM, APA gathered demographic and test score information for all students in RFSD who were in kindergarten through second grade prior to their participation (or non-participation) in SA. As in previous years, propensity scores were computed looking at a student's gender, primary home

⁷ This means that the analysis uses a treatment on the treated framework, rather than an intent to treat framework. Because SA does not collect outcome data on students who have less than 80 percent participation and exits them from the program, an intent to treat analysis is not possible.

language, race, special education status, free or reduced lunch status, and spring DIBELS score. After computing a propensity score for each student, APA then matched students based on their propensity scores using a 1-to-1 nearest-neighbor matching estimator, without replacement. In this method, each treatment student is matched with the comparison student with the most similar propensity score, based on their background characteristics. The matched comparison student is then removed from the pool of potential matches, so that every treatment student is matched with a unique comparison student. This leads to equal sized treatment and comparison groups. Note that this PSM cannot account for student characteristics that are not captured by available data, including unobserved factors such as personal motivation or parental engagement.

One of the primary variables used to match students in the PSM was students' composite score on the DIBELS Next assessment in the spring before their summer of SA participation (or non-participation). Because the DIBELS Next composite score includes different subcomponents depending on the grade level of the student being tested, the composite scores for students in different grades are on different scales and are not directly comparable. To ensure comparability of DIBELS Next scores across grade levels, APA converted the raw composite scores into z-scores, standardizing within grade level. Because of this standardization, a kindergarten student who scored in the 90th percentile of her peers would have a similar z-score to a second-grade student scoring in the 90th percentile of her peers, even though the students' raw composite scores would be quite different. Both the match and the analysis used this standardized measure of a student's spring literacy skills. The conversion of DIBELS Next scores was not necessary for the match, as each student in the treatment group was always matched with a comparison group in the same grade level. The conversation was used to compare literacy gain by grades.

After completing the match, APA tested the quality of the PSM by calculating the standardized mean difference of each demographic variable for the treatment and comparison groups. This standardized mean comparison is a common tool for measuring differences between groups.⁸ When reviewing the quality of a match, the absolute standardized mean difference should be no larger than 0.25 and preferably less than 0.1. Table 16, below, details the characteristics of the 2016 treatment and comparison groups generated by the PSM, showing that the two groups are very similar in terms of raw demographics and the standardized mean differences between the groups fall below the recommended thresholds. (Details of the match balance for previous years of data can be found in preliminary reports for those years of the program.)

Table 16. The post-match groups of 2016 Summer Advantage and comparison students are comparable.

	Summer Advantage Students	Comparison Students	Standardized Mean Difference
--	---------------------------	---------------------	------------------------------

⁸ This statistic is calculated by determining the raw difference between the treatment and control groups on a certain variable, then dividing the result by the standard deviation of the pooled group on that same variable. For example, a standardized mean difference of 0.05 would indicate that SA students' mean for that variable is 0.05 standard deviations higher than the mean of the matched comparison students.

	Summer Advantage Students	Comparison Students	Standardized Mean Difference
Fall DIBELS Composite	166.78	165.39	0.00
NWEA Spring Math	181.48	188.03	-0.04
Spring DIBELS Composite	202.44	203.75	-0.07
Male	0.49	0.49	0.04
Hispanic	0.86	0.86	0.19
White	0.12	0.13	-0.21
Other Race	0.01	0.02	0.05
IEP	0.08	0.08	0.04
English	0.20	0.18	-0.14
Spanish	0.79	0.79	0.13
Other Language	0.00	0.01	0.07
Fully English Proficient	0.28	0.29	-0.05
Limited English Proficient	0.46	0.50	0.10
Not English Proficient	0.72	0.70	-0.08

Statistical Analysis

After completing the propensity score match and ensuring that the treatment and comparison groups were comparable, APA developed a statistical model to analyze each of the research questions, listed below in Table 17. For each research question, the statistical analysis included a set of control variables at the student level and another set of control variables at the school level. These controls are intended to isolate the effect of SA on student outcomes from the effects of other variables, including demographics and past student performance. The student-level control variables are:

- Race;
- Gender;
- Home language;
- IEP status;
- Socio-economic status (FRL status);
- School of attendance;
- Spring DIBELS Next scores (pre-test reading achievement); and
- Spring MAPS math score (pre-test math achievement).

The following sections include the coefficients on the SA participation variables and the statistically significant coefficients on key variables of interest. These coefficients describe the relationship between the variable and the outcome assessment scores.

Research Questions and Activities

The impact analysis is intended to explore whether SA has a positive impact on student learning. All years of this evaluation have focused on the same research questions, reviewed in Table 17.

Table 17: Confirmatory and Exploratory Research Questions

Research Question	Question Level	Type of Question
C1: Does participation in Summer Advantage have an impact on student literacy for students who participated compared to a district sample as measured by standardized assessments?	Student, Program	Impact: Confirmatory
E1: Does the number of years of participation in Summer Advantage moderate impacts on student literacy, such that students with previous participation experience greater impact than students with no previous participation?	Program	Impact: Exploratory
E2: Does Summer Advantage participation impact Kindergarten student performance on standardized literacy assessments compared to non-program participants?	Student, Program	Impact: Exploratory

Research Findings

Questions 1 and 3: Does participation in SA have an impact on student literacy for students who participated compared to a district sample, as measured by standardized assessments?

Does SA improve student performances on standardized literacy assessments?

APA finds that participation in only one year of SA provides a statistically significant and positive effect on student reading performance for kindergarten and first grade students. For kindergarten students, students who participated in Summer Advantage scored 15 percentage points higher on fall assessments than similar students who did not attend Summer Advantage. First grade students who attended Summer Advantage scored 6 percentage points higher on fall assessments than similar students who did not attend Summer Advantage.

This research question compares on students’ standardized DIBELS composite score from the fall following SA participation (or non-participation), adjusting for the variables listed above. APA conducted separate analyses by grade level to answer this question, both in order to answer the research question about kindergarten performance and because previous years’ analyses had found significant differences in program effect by grade level. In order to isolate the effect of participating in one year of SA, this analysis excluded students participating in their second or third summer. This means that if a student participated in SA in 2014, 2015, and 2016, only their 2014 scores were included in this analysis.

When analyzing all three years of pooled data, APA found a statistically significant difference between the fall DIBELS scores for students who did and did not participate in SA in kindergarten and first grade. Statistical significance means that APA is confident that the mean difference between DIBELS scores for SA participants and non-participants is not due to random chance, but is a real difference. Although participation in the SA program had a significant effect for kindergarten and first grade students, findings for the effects of second and third grade participation on literacy rates were inconclusive.

On average, kindergarten students who participated in SA scored 7.14 points higher on the fall DIBELS assessment than comparable, non-SA students, controlling for other demographic characteristics and students' DIBELS pre-test scores. This is equivalent to an effect size of 0.195, meaning that for kindergarteners, participation in SA is associated with scoring 0.195 standard deviations higher on the fall DIBELS assessment. Similarly, first grade students who participated in SA scored, on average, 11.47 points higher on the fall literacy assessment, again controlling for other demographic characteristics and students' DIBELS pre-test scores. For first graders, this is equivalent to an effect size of 0.142, meaning that first graders who participate in SA score 0.142 standard deviations higher on the fall DIBELS assessment.

The kindergarten score increase is equivalent to an effect size of 0.195 and the first grade test score increase is equivalent to an effect size of 0.142. These effect sizes are equivalent to the effect sizes seen by other summer programs in the literature review cited above.

Kindergarten students who participated in SA gained 11 percentile points over the course of the summer. Kindergarten students who participated in the program were in the 44th percentile in the spring and were in the 55th percentile in the fall. In comparison, kindergarten students who did not participate in the program were in the 49th percentile in the spring but fell to the 45th percentile in the fall, losing 4 percentile points. This means that in comparison to students who did not attend SA, kindergarten students who attended gained 15 percentile points.

First grade students who participated in SA stayed stable in terms of academic percentiles over the course of the summer, starting and ending the summer in the 50th percentile. In comparison, first grade students who did not participate in the program started the summer in the 50th percentile but ended the summer in the 44th percentile, losing 6 percentile points. This means that in comparison students who did not attend SA, first grade students who attended gained 6 percentile points.

Table 18: SA Participation is Associated with Higher DIBELS Scores in Kindergarten and First Grade

	Kindergarten	1st Grade	2nd Grade	3rd Grade
SA Treatment	7.14 ***	11.47 ***	0.27	-0.93

* $p < .1$ ** $p < .05$ *** $p < .01$
 Source: APA analysis

Previous years' analyses also failed to find a significant effect for second graders. To investigate this, APA spoke with researchers evaluating similar academic programs focused on low-income students in this grade range for the SIF program. Those researchers shared with APA that although they had found significant program effects in a range of grade levels, they also had failed to find significant effects for second grade using the DIBELS assessment. This suggests that the inconclusive effects in second and third grade may be a function of the components of the DIBELS assessments for those grade levels, rather than an actual lack of program effect on students in those grades. Further research using a variety of student outcome measures, beyond the DIBELS Next, may pick up program effects that the DIBELS Next is currently failing to capture. That examination of other student outcomes would be important before concluding that the SA program does not have an impact on students in those grades.

Question 2: Does the number of years of participation in SA moderate impacts on student literacy, such that students with previous participation experience greater impact than students with no previous participation?

Do students who have spent multiple summers in SA have greater literacy improvements than students who have only spent one summer in SA?

For students who participate in multiple years of Summer Advantage, the benefit of the second or third year of participation is equivalent to the benefit from the first year of participation. In other words, participating in multiple years of Summer Advantage has an additive effect.

Looking across data from the program in 2014, 2015, and 2016 summers, there were 205 students who attended two years of SA and 50 students who attended three years of SA.

Using these 255 students, APA conducted an analysis to examine the impact on students from participating in a second or third year of SA. This analysis found that there is an additive impact on fall DIBELS scores from participating in a second or third year. This means that, on average, students participating in their second or third year of SA showed an increase in DIBELS scores equivalent to the increase in DIBELS scores for students participating in their first year of the program.⁹ This is important because it indicates that SA may be teaching students more than basic classroom behavior skills and is additionally imparting specific academic knowledge that can continue to benefit a student even if he or she has participated in the program in a previous summer. There is no evidence that participation in additional years of SA has a greater effect than the first year of participation. Nor is there evidence that participation in additional years has less effect than the first year of participation.

⁹ Because the effect of participating in the program for the second or third year is equivalent to the effect of participating in the program for the first year, this means that students who participated in their second or third year of the program as rising 2nd or 3rd graders did not experience a score increase.

Conclusions

APA's evaluation over the past five years of the program finds that the SA program is filling a significant gap in the district by providing academic-based summer services that are otherwise almost non-existent. Teachers and district administrators consistently noted over the course of the study that there were no viable summer academic alternatives for students in the region apart from some athletic programs or short-term summer day-camps (almost all of which are fee-based). SA therefore is providing a unique research-supported, subsidized academic and enrichment program which would otherwise not be available to over 30 percent of the district's elementary-aged student population.

The Roaring Fork School District and its surrounding community both continue to express strong support for the program, with the district providing infrastructure, maintenance, and other logistical support and community organizations assisting in hosting and supporting Friday field trip enrichment activities for students. While filling a vital need within the community, SA has also produced statistically significant positive results for students in reading. SA not only provides participating students with an enriching summer activity, but also with high quality instruction that produces quantifiable academic benefits.

Implementation Analysis Conclusions

With regard to fidelity of SA program implementation, APA conducted monitoring and evaluation efforts over four summers (2013, 2014, 2015, and 2016). This four-year analysis found that SA was overall able to achieve its implementation goals and operated with fidelity and consistency in the mountain rural setting of the Roaring Fork Valley. APA's implementation monitoring included data reviews, interviews, focus groups, and observations of administrative staff, teachers, and program leaders. This research indicated that SA is continuing to operate with fidelity and with general consistency across years and across school sites.

The program has been able to effectively serve and recruit students while garnering strong student, teacher, school leader, district, and parent buy-in to the program. High attendance standards were set and upheld among the students, teachers and staff throughout the course of the study.

Over the five years of implementation analysis, SA was also able to effectively respond to a variety of concerns and issues raised each year, and the program proved to be nimble in addressing the needs of teachers and TAs. In fact, teachers, site leaders, principals, and district leaders report that the SA has created a program that is conducive to learning and that teachers and TAs enjoy being a part of.

The program also met and clearly communicated rigorous goals to teachers and other staff members around training, evaluation, and expectations for family involvement. As a result, teachers demonstrate a high level of support for the program's curriculum, structure, and goals, and are strongly invested in helping the program continue to grow, improve, and succeed over time.



Impact Analysis Conclusions

APA's impact study examined the relationship between SA participation and subsequent student performance on the DIBELS Next literacy assessment. APA found a statistically significant impact of SA on student reading performance for kindergarten and first grade students.

Examined by grade level, APA found that participation of kindergarten students in only one year of SA provides a statistically significant and positive effect on kindergarten student reading. Although APA's research question focused only on kindergarten students, APA also explored grade-level specific relationship for other students. APA found a statistically significant relationship between first grade and participation in SA. However, APA found statistically inconclusive results for participation during second grade or third grade. This does not mean that there is not a statically significant relationship for second and third grade participation in SA. However, APA is limited by only having five years of data. As SA continues, the program will gather more data and significant relationships will be easier to detect.

Additionally, APA examined if participation in multiple years of SA produced greater results. APA found no evidence that participation in additional years of Summer Advantage has a greater effect than the first year of participation. Nor is there evidence that participation in additional years has less effect than the first year of participation. However, the sample size for this specific research question was very small. Only 50 students attended SA for 3 years. This question should be reexamined once more students have completed multiple years of SA.

The detection of statistically significant relationships between kindergarten and first grade student participation in SA is very promising for SA. APA suggest continuing to evaluate the program in future years in order to determine if this positive effect is also present for children in other grades. Regardless, the results of the impact study justify and support the existence of SA in RFSD. SA clearly provides a positive and education based summer alternative for students.

References

- Alexander, K.L., Enwisle, D.R., and Olson, L.S. (2001). Keep the faucet flowing: Summer learning and home environment. *American Educator*, Vol. 25, No. 3, p. 10 - 15.
- Alexander, K.L., Enwisle, D.R., and Olson, L.S. (2007). Lasting consequences of the summer learning gap. *American Sociological Review*, Vol. 72, p. 167 - 180.
- Annie E. Casey Foundation, Unequal Opportunities for School Readiness.
http://www.aecf.org/upload/publicationfiles/fact_sheet2.pdf.
- Chaplin, D. & Capizzano, J. (2006). Impacts of a summer learning program: A random assignment study of Building Educated Leaders for Life (BELL). The Urban Institute.
- Cooper, H., Nye, B., Charlton, K., Lindsay, J., & Greathouse, S. (1996). The effects of summer vacation on achievement test scores: A narrative and meta-analytic review. *Review of Educational Research*, Vol. 66, No. 3, p. 227 - 268.
- Downey, D.B., von Hippel, P.T., & Broh, B.A. (2004). Are schools the great equalizer? Cognitive inequality during the summer months and the school year. *American Sociological Review*, Vol. 69, p. 613 - 635.
- Entwisle, D. R., & Alexander, K. L. (1992). Summer setback: Race, poverty, school composition, and mathematics achievement in the first two years of school. *American Sociological Review*, 72-84.
- Fairchild, R., & Boulay, M. (2002, November). What if summer learning loss were an education policy priority. In *Presentation for the 24th Annual APPAM Research Conference, November* (Vol. 9).
- Hernandez, D.J. (2011). *Double Jeopardy: How Reading Skills and Poverty Influence High School Graduation*. Baltimore, MD: Annie E. Casey Foundation.
- Heyns, B. (1978). *Summer learning and the effects of schooling* (pp. 227-268). New York: Academic Press.
- Heyns, B. (1987). Schooling and cognitive development: Is there a season for learning? *Child Development*, Vol. 58, No. 5, p. 1151–60.
- McCombs, J.; Augusting, C.; Schwartz, H.; Bodilly, S.; McInnis, B., Lichter, D.; and Cross, A. RAND Corporation. (2011). Making Summer Count: How Summer Programs Can Boost Children’s Learning. Retrieved 3/29/16 from <http://www.rand.org/pubs/monographs/MG1120.html>.
- Rubin, D. B., & Thomas, N. (2000). Combining propensity score matching with additional adjustments for prognostic covariates. *Journal of the American Statistical Association*, 573–585.
- Schacter, J. (2003). Preventing summer reading declines in children who are disadvantaged. *Journal of Early Intervention*, 26(1), 47-58.

Stuart, E. A. (2007). Estimating Causal Effects Using School-Level Data Sets. *Educational Researcher*, 36(4), 187-198. <http://doi.org/10.3102/0013189X07303396>

Song, M., & Herman, R. (2010). Critical Issues and Common Pitfalls in Designing and Conducting Impact Studies in Education Lessons Learned From the What Works Clearinghouse (Phase I). *Educational Evaluation and Policy Analysis*, 32(3), 351–371. doi:10.3102/0162373710373389

Terzian, M and Moore, K. What Works for Summer Learning Programs for Low-Income Children and Youth: Preliminary Lessons from Experimental Evaluations of Social Interventions. (2009).

What Works Clearinghouse, (2011). *Procedures and standards handbook, Version 2.1*. Washington, DC: Institute of Education Sciences, U.S. Department of Education.