



University – Community

Links

to Higher Learning

Program Impact Report

University of California
Office of the President
Educational Outreach Department

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Introduction

For many California youth, after-school care and additional academic time on task are the first steps on the road to higher education. Research has shown that students who are achieving at grade level in the fourth grade are more likely to stay on a college-going path. UC Links serves students at the earliest stages of the academic pipeline, thus helping to ensure that more low-income children from diverse communities will be eligible for the University of California in years to come.

UC Links (University-Community Links) is a network of 35 program sites providing access to quality after-school educational resources and activities for children from diverse, low-income communities throughout California. Since 1996, UC Links has grown from a set of 14 sites into a statewide collaborative initiative, engaging university and K-12 faculty, staff, and students in 35 community- and school-based programs, serving 3,434 K-12 youth from low-income neighborhoods throughout the state and linking them in guided learning activities with 1,129 undergraduates. A major intersegmental collaborative effort, UC Links brings together eight UC undergraduate campuses, three CSU campuses, two independent colleges, and three community colleges to work with schools and community organizations in offering these programs. Moreover, UC Links is cost-effective: when the total UC Links budget is divided by the number of students served the cost per student is \$201, which is a little more than a dollar a day over the course of the school year.

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UC Links programs have developed a variety of strategies to evaluate program effectiveness. Evaluation strategies vary by site but generally involve: 1) local adaptations of rubrics that measure literacy development, documenting changes in writing competencies over time; 2) analyses of pre- and post-test surveys of participants' educational aspirations; and 3) analyses of undergraduate site observations tracking K-12 participants' cognitive and social development over time. Where possible, sites also make use of schools' SAT-9 and Academic Performance Index (API) scores, matched with data on teachers' and administrators' perceptions of student progress. Together, evaluation results from around the state indicate that UC Links K-12 participants

- **improve academic skills, including math, literacy, and technology skills**
- **raise individual SAT-9 scores as well as Academic Performance Index (API) scores at their schools**
- **have higher aspirations about the future than do children who do not attend UC Links**
- **attend school more regularly and exhibit socially competent behaviors that may impact their classroom behavior.**

Sites around the state have collected data each year that can provide empirical evidence of the

benefits of UC Links for school-age youth who participate in the after-school programs and for undergraduate education at university campuses. We cannot always expect that the few hours children spend at UC Links sites each week with undergraduates, even when the activities are designed to strengthen content knowledge or academic skills, will directly lead to improved scores on standardized tests or other marks of achievement. It is possible that skills might improve but not show measurable change on standardized tests or grades. Moreover, the wide range of programs now available to K-12 students, especially in UC Partner Schools, during the day and after school, makes it virtually impossible to isolate the unique effects of a single program on any child. Nevertheless, it is the firm belief of the UC Links leadership throughout California that the interactions between undergraduate students and participating children, and the use of computers, task cards and other problem solving activities as the medium for these interactions, have great potential to support classroom learning, change attitudes, motivation, and aspirations toward schooling and learning. UC Links programs are informed by a sociocultural approach to learning, and informal educational activities are designed to promote collaboration and social interaction among older and younger peers. Learners work together to solve problems and negotiate activities, an approach that is very different from a didactic or tutorial model of learning. Given this context, the effects of UC Links on academic success may in some cases be indirect—improving motivation, attitudes toward school, and current study habits rather than grades or test scores.

This report is a companion piece to the 2001-2002 UC Links Annual Report and details the impact of UC Links programs on participating K-12 children throughout California. The results are presented in four areas: 1) Academic Achievement: Math, Literacy, Technology Skills; 2) SAT-9 and API Scores as Indicators; 3) Educational Aspirations and Knowledge of Steps to Higher Education; and 4) Engagement and Attendance.

Academic Achievement: Math, Literacy, Technology Skills

UC Links programs give children additional time on academic tasks and provide them with access to university students who assist and encourage their learning. University undergraduates and children engage in a variety of activities both on- and off-computer, including educational software, digital storytelling, web page design, internet research, reading, and writing.

Documenting the academic gains made by participating children and youth, however, has proven problematic in some cases. Because UC Links programs operate after school and provide informal learning activities, program evaluators face a number of obstacles in data collection. Children's attendance is voluntary, and therefore variable. Many programs that are located in community centers serve children from multiple schools and may not be able to secure access to school data such as grades or test scores. Most programs serve children of various ages and linguistic backgrounds. As a result, establishing control groups or administering standardized tests or other school-like assessments is in some cases impossible. Despite these obstacles, many UC Links programs have found improved academic and technology skills among

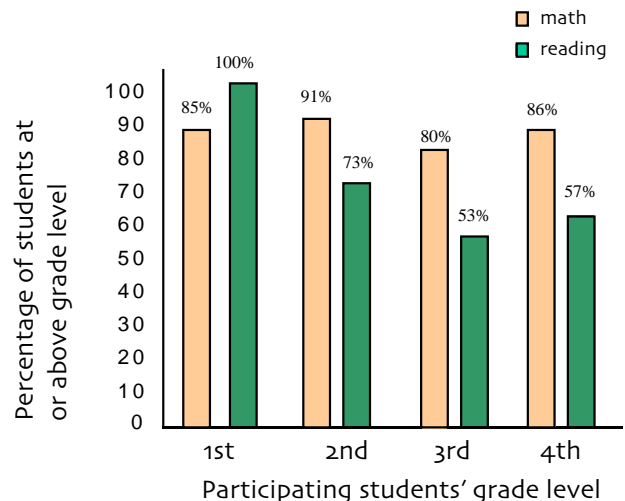
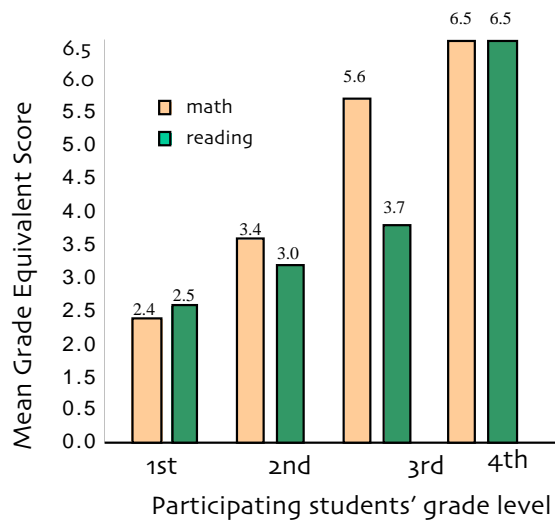
Mastery of 4th grade language arts skills is an important leading indicator of university eligibility.

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children who participate in the after-school programs.

Researchers at the *Harding Elementary School* and *Rosa Parks Elementary School UC Links programs (UC Berkeley)* have tracked the academic achievement of participating children since 1996. They have found that the achievement trajectory of most participating children, if maintained, will be sufficient for college entry when participants complete high school. The percent of children who were at or above grade level in math achievement exceeded the University's outreach benchmarks for achievement in elementary school. By the spring of program year 6 (2001-02), math achievement was at or above grade level in 85%, 91%, 80%, and 86% of the first, second, third, and fourth grade children, respectively. Mean math achievement was at grade level 2.4 for first graders, grade level 3.4 for second graders, grade level 5.6 for third graders, and grade level 6.5 for fourth graders.

Math and Reading Outcomes at *Harding Elementary School* and *Rosa Parks Elementary School UC Links Programs (UC Berkeley)*:



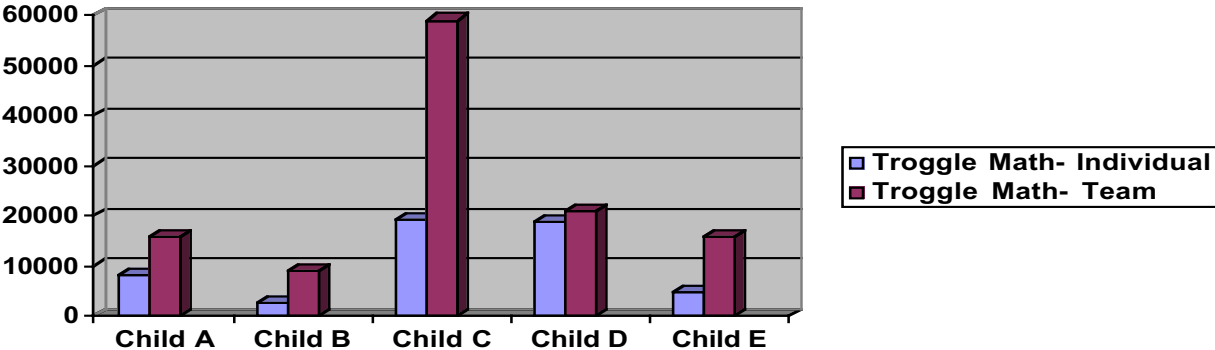
By Spring of last year, the sixth year of the program, reading achievement was at or above grade level in 100%, 73%, 53%, and 57% of the first, second, third, and fourth grade children, respectively. Mean reading achievement was at grade level 2.5 for first graders, grade level 3.0 for second graders, grade level 3.7 for third graders, and grade level 6.5 (median=6.1) for fourth graders.

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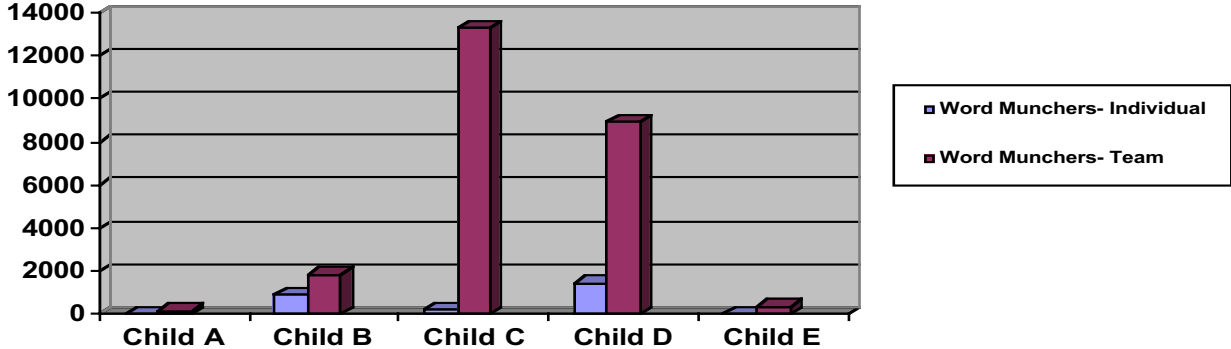
In math and reading, several children are achieving more than one grade above their actual grade in school.

UC Links activities are informed by sociocultural learning theory, which posits that learning occurs through social interaction and that learners are capable of higher achievement with the assistance of a more-experienced peer. Researchers at the *Fifth Dimension (UC San Diego)* tested this theory and found that child participants were more successful on a variety of academic tasks with the aid of university undergraduates. Over a one-week period, fourteen children participated in a tournament designed to assess math and literacy development. Each child raised their official score by a significant number of points when on a collaborative team with an undergraduate (see graphs).

Sample scores from Troggle Trouble Math at the *Fifth Dimension (UC San Diego)*:



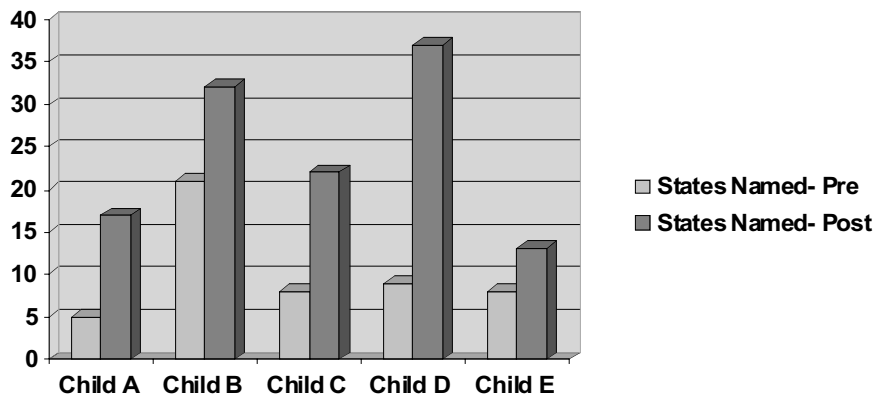
Sample scores from Word Munchers at the *Fifth Dimension (UC San Diego)*:



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In addition to literacy and math development, problem solving and geographical knowledge was also assessed using a piece of educational software called “Where in the World is Carmen San Diego?” Undergraduate fieldnotes indicate that children learned to utilize resources from the game to recall clues and to strategize methods to catch the criminals. As part of the Carmen San Diego Tournament, twenty-nine children also demonstrated increased geographical knowledge by filling in the states in a blank map of the United States, both alone and with the help of a university undergraduate. Results indicate that children improved in the number of states they could name after they received assistance (see graph).

Sample scores from Carmen San Diego Tournament at the *Fifth Dimension (UC San Diego)*:



Participating students also report that they benefit from their relationship with undergraduate mentors. At the *Long Beach BLAST UC Links program (UC Irvine/CSU Long Beach)*, 87 percent of middle school students who participated in Fall 2001 believed their mentor helped them become better students. In Spring 2002, all middle school participants believed that working with their mentor helped them with school at least some, and 84 percent reported that their mentor helped them “a lot” (the highest rating).

UC Links has developed a variety of tools for assessing literacy development. Because mastery of 4th grade language arts skills is an important leading indicator of university eligibility, many programs focus specifically on facilitating children’s reading and writing development. Several programs engage children in letter-writing activities, while others encourage children to compose poetry, fiction, and multimedia pieces called “digital stories.” For example, the *Humanities Out There (HOT) program (UC Irvine)* aims to increase student English language proficiency through participation in reading, writing, and discussion sessions that are both imaginative and relevant to students’ lived experience. During the 2001-2002 year, HOT graduate and undergraduate writing mentors noted a sharp increase in writing ability demonstrated by K-12 students who have had HOT workshops in their classrooms for more than two quarters. In the past, students in the third, fourth, and fifth grades at partner school

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Heninger Elementary have usually tested within the basic range (2.3) of writing proficiency on the Santa Ana Unified School District's annual Writing Proficiency Exam. The exam ranks student written work on a scale from 0-4. This year (2001-2002), in one of HOT's third grade classrooms at the UC Links site at Heninger Elementary, all students scored within the Proficient range (3). This has never occurred before for this teacher. For the 2002-2003 year, program evaluators are preparing to do a series of case studies with students who had several quarters of HOT workshops while in the Santa Ana school district and who have gone on to a college or university. They hope to learn more about how HOT helps to prepare students to attend college.

Quantitative data collected from *Club Proteo* (UC Santa Barbara) over the period Fall 2000-Spring 2002 shows some positive evidence of growth in children's fluency and performance in writing. This growth approached statistical significance ($p=.06$).

Quantitative pre- and post-test assessment measures of writing fluency during Fall 2001 show some evidence of growth in children who are the most regular attendees of Club Proteo. There was a positive correlation between number of days that children attended Club Proteo and gains in writing fluency during the period. The data also suggest that students who break up their participation in Club Proteo in order to attend a time-competing day-care activity show less improvement in their writing fluency over time. Finally, children who wrote weekly letters also demonstrated a statistically significant gain in their pre- and post-test performance on writing measures. Similarly, children in the *Magical Web* (UC Davis/CSU Sacramento) site increased writing fluency over the course of the Spring 2002 semester, as measured by word count of email letter correspondence. These results support the hypothesis that focused attention to writing and support of writing in a specific genre, such as letter writing, during after-school computer activities is associated with improvements in writing in that genre.

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UC Links programs have also used teacher and student interviews and perceptions to assess literacy gains over time. Researchers at the *Expedition* (UC Berkeley) program interviewed teachers at Roosevelt Middle School, where the UC Links program is located and where 57 percent of the students are English language learners. Teachers were quick to mention steady improvements in the English language proficiency of students engaged in Expedition. One student brought his math grade up from a C- to a B during the year and his math teacher attributes his increased effort to his participation in and devotion to the Expedition program. The student had confided in the teacher many times that "Expedition is the most important thing to me at school." Another teacher discussed the case of a student who had arrived in the US from Mexico two weeks before the beginning of the school year. She did not speak any English on her first day in the Expedition program. Her teacher said that her participation in the after-school program provided an important support for her English-language development and her self-confidence.

Children participating in the *Spider's Web* (UC Berkeley) program noted a connection between

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attending the after-school program and their success in school, often mentioning in evaluation interviews the benefits of the math and literacy software that they used in the computer lab. Some students also acknowledged that the program's silent reading time had helped their reading in school. Homework time reportedly allowed them to complete their assignments and to receive help if needed.

Many UC Links programs provide reading, writing, and technology activities designed to support the middle school standards of the Language Arts Framework for the state of California.

Some programs, such as *DUSTY (UC Berkeley)*, provide reading, writing, and technology activities designed to support the middle school standards of the Language Arts Framework for the state of California. Through composing five-minute digital stories, participants employ and develop a range of skills. For example, before beginning digital production of their multimedia stories, students create storyboards and written narratives. Researchers and undergraduate fieldworkers have documented children brainstorming and identifying ideas collaboratively, proofreading and editing their work, becoming sensitive to notions of audience and rhetorical stance, identifying and creating different written genres, as well as developing more sophisticated reading and writing skills.

UC Links also enhances children's understanding of computer-based technology. In a survey completed by 19 children who had participated in the *BU/UCSC Links program (UC Santa Cruz)* in 2001-2002, children indicated that the program had helped them learn how to operate computers, troubleshoot computer problems, navigate the internet, compose documents using word processing, and play educational and recreational computer games. Activity records filled out by undergraduates and adults working with participants in *Mi Clase Mágica (UC San Diego)* indicated that the preschool-aged participants obtained general knowledge of computer technology and demonstrated knowledge of colors, shapes, and typing ability (including the modification of font style, shape, and color).

At *Long Beach BLAST (UC Irvine/CSU Long Beach)*, results of Spring 2002 surveys indicated that there was growth in the technology-related skills that were targeted by the UC Links program:

Technology Skill	Percentage of students who demonstrated skill <i>before</i> participation	Percentage of students who demonstrated skill <i>after</i> participation
Graphics/drawing	59%	67%
Web page design	47%	63%
Typing/keyboarding	59%	63%
Word processing	35%	47%

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These skills exceed the Reading and Writing with Technology standards for middle school students outlined by the state of California. At *DUSTY (UC Berkeley)*, researchers reported that middle school students developed a range of highly-sophisticated technology skills, including how to conduct internet research, how to use editing software to compose digital movies, and how to compose music on the computer.

SAT-9 and API Scores as Indicators

For the past three years, UC Links participants in the LEAP/SALTO program have made greater gains on their SAT-9 scores than non-participating students.

A small number of UC Links sites have been able to gain access to student test-score data, as a result of especially close program collaboration with a partner school or district. At the *LEAP/SALTO UC Links program (UC Davis)*, researchers have found that, for the past three years, UC Links participants have made greater gains on their SAT-9 scores than non-participating students. This result is an especially encouraging outcome because the LEAP/SALTO UC Links program serves the school's most "at-risk"

students. In fact, in years 1 and 2, the UC Links students at LEAP/SALTO gained while the comparison (non-participating) group of students lost ground. (In 2001-2002, non-participating students showed a slight gain in test scores). Similarly, at Bayside Elementary School, the principal reported that children enrolled in *La Clase Mágica (UC San Diego)* showed significant improvement on their SAT-9 scores. Since the 1999 academic year, the first year of operation for the *Expedition (UC Berkeley)* program at Roosevelt Middle School, the school's Academic Performance Index Score has risen from 474 to 536.

A study will be conducted in early 2002-2003 at Taft Elementary School that will compare computer skills, attitudes toward reading and writing, and reading skills of third graders who did, and who did not participate as second graders in the *Riverside Trolley UC Links program (UC Riverside)* in 2001-2002. Children will "play" on an educational software reading program in a way structured to provide scores on several phonics and reading activities. Parental consent will provide access to student records, including state-mandated achievement test scores (STAR, SAT-9) and district tests given three times during the year. The study will also provide data to examine relationships between abilities rated by computer software, district tests, and state achievement tests.

Educational Aspirations and Knowledge of Steps to Higher Education

UC Links engages children and undergraduates in a variety of learning activities that are designed to promote collaboration. For many participating children, UC Links provides the first opportunity to meet and work closely with college students. Through their relationships with undergraduate mentors, children are able to articulate their future aspirations and learn about steps to take in order to achieve

their educational goals. Many sites have been able to document the impact of these relationships on children's future aspirations. These results indicate that children who participate in UC Links have higher educational aspirations than their non-participating peers.

Researchers at UC Riverside have collected data for several years across multiple sites to document the impact of participation in UC Links on children's educational aspirations. At the *Riverside Trolley UC Links Site at Highland Elementary School (UC Riverside)*, student aspirations with regard to educational attainment rose during the 2001-2002 year, with fewer students expecting to stop going to school

after high school, and more students planning to pursue graduate degrees. Students also became more optimistic from Fall to Spring about the possibility that they could achieve their specific career goals. Eighty percent of students believed that they could do something about the barriers that might stand in the way of attaining their goals. This was encouraging in a school with high percentages of students who face barriers of income, ethnicity, parent education levels, and second language acquisition. It is highly likely that the interactions among participating UC Links students and undergraduates during the school year contributed to this optimism.

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Other programs around the state have documented similar findings using participant surveys, children's drawings and written artifacts, and fieldnotes taken by undergraduate mentors. Evaluators at the *Long Beach BLAST UC Links site (UC Irvine/CSU Long Beach)* found that 97 percent of middle school participants believed that their undergraduate mentor helped them learn useful skills for the future. Seventy percent believed their mentor helped them learn more about college. At *La Clase Mágica (UC San Diego)*, undergraduate field workers reported that participating children and youth demonstrate familiarity with university practices and show interest in attending a college or university. The majority of long-term La

The majority of long-term *La Clase Mágica* participants, who have been attending the program for more than ten years, are pursuing post-secondary education.

Clase Mágica participants, who have been attending the program for more than ten years, are pursuing post-secondary education. A survey of children who had participated in *BU/UCSC Links (UC Santa Cruz)* during the 2001-2002 year found that 18 out of 19 children plan on applying to UC Santa Cruz in the future.

Although new UC Links sites, such as the *Y-PLAN (UC Berkeley)* and the *Community*

Ethnography Project (UC Los Angeles), have only been in operation for part of the past year, they have begun to document interactions between undergraduates and participating youth. Results indicate that youth were able to gain an awareness of college requirements and expectations. At both sites, youth also demonstrated an awareness of the University of California as a real, attainable option in their future. Finally, evaluation work conducted at the *Cosmic Dimension (UC Irvine)* provided evidence that children in upper elementary grades are receptive to learning about and preparing for post-secondary education as they start on the path to higher learning.

Engagement and Attendance

In order for youth to realize their high educational aspirations, they need to take concrete steps early in their school years. By providing engaging learning activities in the after-school hours, UC Links helps youth, many of whom have struggled during the school day, realize success. The after-school program provides them with an environment in which they can practice ways of learning and behaving that will help them succeed during the school day. For example, fieldnote data from some UC Links sites document children practicing language skills and working diligently. Researchers from the *DUSTY UC Links program (UC Berkeley)*, found that

Manuel, a young man of Mexican descent, who is ten years old, like some of his peers in DUSTY, is “opening up.” While Manuel, whose first language is Spanish, started out hardly saying a word to either children or adults in the program, by the second semester he was clearly becoming more comfortable talking and expressing his ideas, and seemed to embrace the opportunities at DUSTY to speak English with interested and responsive adults. As one researcher noted: “In the first semester, Manuel hardly said a word, but that has changed considerably.” This is clearly a ‘skill’ or tendency that is bound to help Manuel out in the classroom as well.

Through site observation, an independent evaluator found that participating high school students in the *Y-PLAN (UC Berkeley)* were developing mature and thoughtful ways of speaking and interacting with adults and peers regarding real-world issues and concerns, and an ability to convey information in a level-headed way. These skills, along with an ability to work independently and a talent for working collaboratively as part of a problem-solving team, will help participants succeed in their school courses.

Educators and administrators in partner K-12 institutions are corroborating these results. The principal of a partner elementary school reports that low-achieving children who attend the *Fifth Dimension (UC San Diego)* are experiencing improved integration with school culture. The principal of Lennox Elementary School reports increased attendance and more engagement in school for the majority of students participating in the *Las Redes (UC Los Angeles)* after-school club. The

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teachers at Roosevelt Middle School report that students attending the *Expedition (UC Berkeley)* program become more attentive in class, are more willing to solve problems, and exhibit more confidence in their own abilities. Surveys of participating children and youth also indicate the benefits of participating in UC Links programs. The majority of Expedition participants surveyed in Spring 2002 reported that their ability to connect with caring adults, their capacity to work with others to reach a goal, and their overall behavior was better as a result of their participation in the program.

Conclusion

The goals and activities of individual UC Links programs are described in the 2001-2002 UC Links Annual Report, a companion piece to this program impact report. The results discussed in this impact report demonstrate that UC Links programs throughout the state are finding innovative ways to reach and enrich the lives of young Californians. Participating youth in K-12 schools are developing academic skills and improving standardized test scores with the support of their undergraduate mentors. As a result of their participation in UC Links, youth also have higher aspirations for their future and attend school more regularly.

Despite the obstacles that programs face in their data collection efforts, such as childrens' variable attendance and the difficulty of coordinating information-sharing with multiple partner schools, many programs have documented continued growth and success for participants who are just starting on the path to higher education. The university faculty members who direct UC Links programs at each campus continue to develop strategies to document the impact of the program on participating youth. The involvement of faculty in this outreach effort ensures that the program is tied to undergraduate education as well as to current research in a number of academic disciplines. UC Links faculty and undergraduate students firmly believe that reaching children early, exposing them to positive role models, and providing them with access to engaging learning activities is critical in ensuring their readiness for university admission.

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Appendix: UC Links Sites Discussed

Campus	UC Links Sites (Sites marked with an asterisk (*) are discussed in this report.)
Berkeley	Rosa Parks Elementary School UC Links Program* Harding Elementary School UC Links Program* Expedition at Roosevelt Middle School* The Spider's Web at Coronado YMCA* DUSTY at Prescott Joseph Center for Community Enhancement* Youth Sounds at McClymonds High School Y-PLAN at McClymonds High School* Y-PLAN at Home BASE (Bay Area School of Enterprise)*
Davis	LEAP/SALTO at Dingle Elementary School* Manos at Grafton Elementary School Si Se Puede! at Yolo County Housing Authority (with Woodland Community College) The Magical Web at Fr. Keith B. Kenney Elementary School (with CSU Sacramento)*
Irvine	The Cosmic Dimension at Wilson Elementary School The Cosmic Dimension at the Santa Ana Boys and Girls Club* HOT at Heninger Elementary School* HOT at Bowers Museum of Cultural Art* Long Beach BLAST at Washington Intensive Learning Center*
Los Angeles	Las Redes at Moffett Elementary School* Community Ethnography Project at Bradley/Milken Center*
Riverside	Riverside Trolley at Highland Elementary School* Riverside Trolley at Taft Elementary School* Eastside Cybrary Connection The Fifth Dimension at the Whittier Boys and Girls Club (with Whittier College) La Ciudad Encantada at Sorensen Elementary School (with Whittier College)
San Diego	The Fifth Dimension at the Boys and Girls Club of San Dieguito* The Fifth Dimension at Mission Elementary School (with MiraCosta College) La Clase Mágica North at St. Leo's Mission* La Clase Mágica Sur at Bayside Elementary School* La Clase Mágica at Casa Familiar* La Clase Mágica at Pauma American Indian Reservation* La Clase Mágica at San Pasqual American Indian Reservation* La Clase Mágica at Orange Place Housing Complex*
Santa Barbara	Club Proteo at the Goleta Boys and Girls Club* Parents, Children, and Computers Project at Isla Vista Elementary School
Santa Cruz	Barrios Unidos/UCSC Links*