

Year-5 and Cumulative SPARK-Hawai'i Evaluation Report

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This fifth and final SPARK- Hawai‘i (SPARK-HI) evaluation report reflects the evolution of our evaluation approach, which started five years ago with basic considerations of Hawaiian cultural appropriateness. The evolution included an expansion to networks, relationships, and partnerships. Subsequently we expanded the concept of cultures to include the cultures of various major participants such as parents, program staff, funding agency, schools in the project, legislators, evaluators, and elders. In our Year-4 evaluation report, we moved to an integration of major considerations of culture, partnerships, assessment, and reality/practicality. In this final evaluation we continue to offer an integrated approach in which all aspects of cultural appropriateness are viewed as essential and interconnected. Also, despite the integration, we did not always try to make a clear distinction between the Year-5 evaluation and a five-year cumulative evaluation. Likewise, we did not try to precisely differentiate accomplishments of the evaluation team from those of the rest of the project.

In this culminating evaluation report, we focused on important aspects such as SPARK-HI vs. a comparison group, systemic and sustainable improvement brought about or heavily influenced by SPARK-HI, and appropriateness (cultural as well as technical) of the evaluation methodology we used. A major addition to the evaluation is the inclusion of rigorous quantitative data analyses to supplement the extensive qualitative data. Consistent with our indigenous approach to evaluation, and unlike many mainstream evaluation approaches, the quantitative data were viewed as definitely secondary to the more qualitative *mo‘olelo* (storytelling) data. At the same time, we took the quantitative data and wove a *mo‘olelo* around them.

More essentially, we featured outcomes that others using a more mainstream Western approach might consider to be overextending or going beyond the data. Our *mana‘o* (belief) is that we are behaving logically when we build into our research and evaluation thinking the wisdom of the indigenous Hawaiian culture. For example, instead of regarding center based preschools as the preferred version of early childhood education (almost all recent studies on early childhood education (ECE) focus on center-based preschools), we honor Hawaiians’ notably high regard for family-child interactions during early childhood and accept that kind of ECE, not as a second-choice alternative, but instead as a more *pono* (proper) early childhood education model for Native Hawaiians.

Similarly we criticize the adulated (in Western academic and early childhood education circles) randomized controlled trial evaluation/research method as being unethical in many ECE studies, for sure from a Hawaiian viewpoint, but even from a Western view as espoused in various evaluation standards. As part of the evolution of the evaluation, we started with what we regarded as the most important part of the story—the many *mo‘olelo*, stories that provide valuable evaluative information about SPARK-HI. Later we present the common data elements that are required as a part of the initiative-level evaluation.

We Used an Evaluation Methodology That was Notably Different From, and More Appropriate Than, Those Found in Mainstream Evaluations.

In designing and conducting the SPARK-HI evaluation, we noted major differences between the approach we were taking and many other approaches reported in the professional literature. We accordingly examined some of the widely reported approaches and concluded that many of those efforts were seriously flawed, especially for the type of project we were evaluating.

We start our critique by examining what is perhaps the most widely known and cited preschool experiment—the High/Scope Perry Preschool Project (a Google search on August 25, 2008 using “Perry” and “Preschool” yielded 580,000 hits). Although many researchers have cited the Perry Preschool Project as strong evidence that formal early childhood education positively affects young children throughout their lives (e.g., Schweinhart, 2007), we assert that studies of the High/Scope type have notable aspects of unethicity and are inappropriate from an indigenous evaluation framework.

Inappropriateness of Randomized Controlled Trials in Early Childhood Education Studies

A major concern we had is based on the perception among much of the research field that the randomized controlled trial (RCT), as was used in the research/evaluation design of the High/Scope Perry Preschool Project, is the only truly valid design for research or evaluation (Cordray, 2007). Yet we well know that large numbers of individuals as well as of thriving cultures and societies, indigenous and otherwise, have made or facilitated many wise decisions about education, policy, and programs without any assistance from an RCT.

Any ECE evaluation design that incorporates random assignment to a treatment such as preschool experience and no preschool experience for the control group is profoundly inappropriate and unethical when it comes to evaluation of early childhood experiences. Of much concern to us is the devastating fate of the High/Scope Perry Preschool Project’s control group, which has had higher levels of, for example, (a) convictions for criminal behavior, (b) teen pregnancy, (c) drug abuse, and (d) unemployment (Berruta-Clement, Schweinhart, Barnett, Epstein, & Weikart, 1984).

In 1962 when the High/Scope studies started, the educational field was aware of the likely benefits of preschool. For example, New York state had active commissions promoting preschools more than 40 years before the start of the High/Scope study (Bureau of Child Development and Parent Education, 1957, revised 1968).



Figure 1. It is not okay to randomly assign a child to “no early childhood education.”

Inappropriateness of Focusing on Only Center-based Early Childhood Education

We found that most of the more recently conducted research on the effectiveness of early childhood education focused mainly on center-based, early childhood. For example, the Public Policy Forum's (2007) review of 26 research studies on early childhood education outcomes included a preponderance of studies of center-based early childhood education and no explicit mention of any or parent-oriented ECE.

Technical Inappropriateness in Prior Studies of Readiness for Kindergarten

Standardized tests have been used in the evaluations of Head Start (Rimer, 2003); however, it is well known that there are major problems in using standardized achievement test scores as measures of learning, especially with young children (Kamii, 1990). We did not find studies that addressed the simple, straightforward question of whether specific early childhood experiences, including noncenter-based ones, make children better prepared for kindergarten. In a summary of a recent comprehensive review of 26 studies on early childhood education outcomes (Public Policy Forum, 2007), "statistical significance" is mentioned a few times, but there is no mention of "effect size," even though, according to the APA Publication Manual (2001, p. 25), ". . . it is almost always necessary to include some index of effect size or strength of relationship. . ."

Addressing Types of Inappropriateness

The aforementioned types of inappropriateness led us to develop an evaluation/research design that (a) accommodated the project's allowing all children to participate in the main treatment if their family chose to enroll, (b) focused on non-center-based ECE treatments, (c) instead of using standardized achievement tests, used a data-collection instrument designed to specifically measure children's readiness for kindergarten, (d) regarded participant feedback as primary evaluation data, (e) analyzed the data using effect size rather than statistical significance, and (f) ensured cultural appropriateness. We built on an indigenous framework for this type of an evaluation approach, which was published by the American Evaluation Association and sponsored in part by the W.K. Kellogg Foundation (Kawakami, Aton, Cram, Lai, & Porima, 2008). All SPARK-HI meetings started and ended w/proper cultural Hawaiian protocols. Another direct result of the project's being culturally appropriate was the evaluation team's being viewed as an inseparable part of the project team. Any resulting subjectivity was welcomed. In fact we regard as less valid those evaluators who are clearly separate from project staff.

SPARK-HI, the Evaluand

SPARK (Supporting Partnerships to Assure Ready Kids)-Hawai'i [SPARK-HI] is a school-readiness initiative funded by the W.K. Kellogg Foundation (WKKF) in eight states. Program funding began in 2002 with a planning grant, followed by a five-year implementation grant, which ends in 2008. Each site designed a program applicable to its community within SPARK's five key objectives (W.K. Kellogg Foundation, 2000): (a) strengthen connections among ("the most" [added in a later publication (W.K. Kellogg Foundation, 2002)]) vulnerable children, their families, early care and education providers, and teachers; (b) improve quality of services and relationships between schools and families; (c) alter institutional policies and procedures, changing systems that serve the needs of children, to support early learning; (d)

apply best practices and serve as a catalyst to stimulate local movement to strengthen the quality of early care and education; and (e) foster local, state, and national resolve to support children and schools that are best prepared to address the initiative's goals and child outcomes.

SPARK-HI was not a Direct-Service Center-Based Preschool Program.

Each child was enrolled with a Learning Advocate (LA), typically a parent but frequently a grandparent or aunt/uncle, with whom the program communicated about school-readiness opportunities. SPARK-HI staff, known as Learning Advocate Coordinators (LACs), followed up by providing ongoing screening using the Ages and Stages Questionnaire (ASQ) and applying group results to tailor themes for workshops that were offered to the entire community. Workshops were held on positive discipline, prereading skills, healthy cooking, and general learning skills. Project staff sent SPARK-HI families mailings announcing the workshops and invited the general community through the use of flyers and advertisements in community newspapers, and inserts in shopping bags and fast-food meals containers. In addition to workshops, LACs provided families with resources available in the community and referred each SPARK-HI family to the “sister” program Keiki Steps—a culturally responsive parent-child interaction program that met for 2 hours a day, three times a week.

There Were Numerous Major Challenges to Recruitment, Enrollment, Treatment, and Reporting.

Unanticipated events or circumstances during implementation must be considered when one looks at SPARK-HI programming, evaluation methods, and outcomes.

One site had a complete turnover of staff shortly before the end of Year 1 (during the recruitment period for Cohort 1). In Year 3, all but one of the new staff members at that site moved on to other positions within the grantee organization.

The Hawai'i Department of Education (HDOE) went to a mandatory year-around school schedule at the beginning of Year 4.

In Year 3, HDOE pilot-tested a Junior Kindergarten program, which went statewide in Year 4, changing the birth date cutoff for entrance to kindergarten. Previously, children who turned 5 years of age by December 31 could enter kindergarten. Under the new plan, children who turn 5 years of age by August 1 could enter kindergarten, and those that turn 5 years of age between August 2 and December 31 could enter Junior Kindergarten. Further complicating this issue, most schools did not have enough children to justify a self-contained Junior Kindergarten class, so these students were placed in regular kindergarten classrooms and provided with varying degrees of age-appropriate curricula.

The larger of the two sites partnered with the community's largest health-care provider to recruit participants, to provide services, and workshops. The liaison between the clinic and SPARK-HI staff changed 4 times in 3 years.

During Year 2, an unusually high number of brush fires occurred in one of the SPARK-HI communities, which dramatically affected everyone's ability to move in, out, and within this community. The area also saw a dramatic increase in its homeless population during the summer of 2006 when over 200 individuals were displaced from parks elsewhere and ended up along the 16-mile stretch of this SPARK-HI site, where the latest report “... estimates 714 people, including 155 children 17 or younger, live ...” in tents and make-shift shelters (Shikina, 2006).

The SPARK-HI Selection Process was Appropriate for the Population and Intentionally not Random Assignment to Treatment.

For SPARK-HI, the design included choosing two communities with a high percentage of Native Hawaiian children and a high proportion of students were eligible for free or reduced-cost school lunch. SPARK-HI had by far the lowest percentage attending Head Start or public pre-K. For the only two SPARK sites reporting Temporary Assistance for Needy Families (TANF) data, SPARK-HI's rate was 6 times that of Ohio.

Children and their families were recruited for Cohorts I, II, and III, those children who would begin kindergarten in 2005, 2006, and 2007, respectively (see Table 1). All who agreed to participate were accepted.

Table 1. Totals by cohort of recruited participants for both SPARK-HI sites

SPARK-HI Site	Cohort 1	Cohort 2	Cohort 3	Cohort 4 (not official, but often siblings)
Hilo	41	85	41	0
Wai'anae	68	157	226	23

Discussions with some of the project's community members revealed that the community would not regard any evaluation as *pono* or proper, for example, if one group ended up having major long-term benefits that the control or comparison group did not. In addition, any study using random assignment to an ECE treatment would experience notable treatment contamination in these close-knit communities.

Accordingly we did not randomly assign children to treatment/control, but we did succeed in obtaining data from an appropriately equivalent comparison group. We are confident that these comparison students sufficiently match SPARK-HI participants given that the area is remote, with only one road connecting the 16-mile-long community to the rest of the island, and because of the community's physical isolation, it is rare for families to access educational or social service opportunities outside their community. The demographics for the five schools used for comparison showed little variation from that of the project's Cohort 3 participants. Opportunities and experiences would be similar for most children within the community.

We Regarded the Data Obtained Through the Transition Interviews as of Primary Importance.

Treating the interview data as of primary importance was not only culturally appropriate in that the contribution of the community to the study were highly valued, but they also imbued a sense of empowerment beyond school readiness issues. Use of the 60-month ASQ helped to put context to the child's development in regard to his or her chronological age when entering formal education facilitating input from the LAs during the Transition Interviews scheduled for the month before kindergarten entrance (First Transition Interview) and again during the first semester break (Second Transition Interview). During the interviews, LAs were asked eight questions, including their estimate of how ready their child was for kindergarten and later, having experienced a semester of kindergarten, how correct their estimate was from the first interview. Most Learning Advocates reported that their children were ready to begin kindergarten (41 of 66 who responded)—in fact one respondent from the Second Transition Interview opined that her child was more ready to start school than the parent was. The 18 who

indicated that their child was not ready to begin kindergarten did indicate that their child caught up quickly, and by the end of the first semester was on track and liked school.

The single most repeated Transition Interview comment about the workshops was that parents read more to their children as a result of participating in SPARK-HI workshops. Reading and literacy-building activities were also the most cited as things they would do differently to help their child be ready for school, and what they planned for summer activities to help their child be ready for Grade 1. LAs also commented on how participation in the workshops changed their behaviors and attitudes. Particularly poignant were comments about (a) no longer using corporal punishment and (b) recognizing that each child had her/his own skills and abilities. Being “more patient” was a theme in 38 of 103 responses in the First Transition Interview. Other comments helped to guide programming and to refine SPARK-HI activities. Because LAs responded so positively to workshops and information in an activity calendar (the calendar was mentioned specifically by 32% of respondents), and they asked for ongoing information to build school-success skills, SPARK-HI pilot tested a parent-involvement program at one school: Parents and other family members spent 30 minutes a day, four days a week (after school) in one of four activity centers learning and doing a different activity that supports what is presented in the kindergarten classroom. Activities can be repeated at home by other family members and with other siblings. Evaluation for this program included short feedback forms that were completed each day by the parent and by the child.

While the information from the Transition Interviews was valuable and interesting, this information was not easily obtained. The remoteness of the communities often meant parents/caregivers (LAs) worked far from home and had long commutes. If they did not work, then they had transportation issues getting to the SPARK office for face-to-face interviews. After trial and error in Cohorts 1 & 2, LACs learned that the best method was to mail the interview with a self-addressed stamped envelope, and follow-up with phone calls. Often the LACs did the interview over the phone. While the response rate for Cohort 3 (n = 199) for the First Transition interview was only 51%, and 33% for the Second Transition Interview, all LAs that the LACs could contact did respond. This compares to the response rates for Cohort 1 (n = 53) of 81% and 44%, and Cohort 2 (n = 134) of 56% and 24%.

The Transition Interviews also helped to refine the content and delivery of workshops. In Cohort 1, 56% of interview respondents indicated they had not attended any SPARK workshops, and their comments as to why (largely poor communication) were acted on for Cohort 2. Of the 75 LAs responding to the Transition Interview for Cohort 2, that number dropped to 24% reporting that they did not participate in workshops. Comments in Cohort 2 identified problems with location, timing for working LAs, and a need for child care. By Cohort 3, nonparticipation in workshops was down to 18%. LAs still mentioned problems with workshop schedules as the main reason for not attending. The increase in workshop participation correlated with the increase in LAs' rating of the program: 41% of Cohort 1, 73% of Cohort 2, and 78% of Cohort 3 respondents rated the program as good, very good, or excellent.

After Learning Advocates mentioned a lack of library services in their area, SPARK-HI arranged for families to receive books as *makana* (gifts given when visiting others) at workshops and other events. Many LAs also expressed willingness to become more involved in their community and were invited to participate in grassroots activities. Some testified at the State legislature in support of children's programs.

Through the Efforts of SPARK-HI, Numerous Major, Effective Partnerships Were Developed.

SPARK-HI recognized the strength of relationship building within the Hawaiian

community as well as the broader impact of partnerships with various agencies. The partnership with Good Beginnings Alliance (GBA) provided a conduit to policy making at the state level and provided the path to deployment of the Hawai'i School Readiness Assessment (HSRA) in the Hawai'i Department of Education (HDOE). GBA was also instrumental in the development and distribution of the Hawai'i Preschool Content Standards, which align with HDOE's Content and Performance Standards. Both efforts were supported through SPARK funding.

Another key partner was the Wai'anae Coast Community Health Center (WCCHC), the primary medical facility servicing the larger of the SPARK-HI sites. Through this partnership, three-year olds were recruited for SPARK, received initial assessment using the Ages and Stages Questionnaire (ASQ), and were referred for services if indicated. The WCCHC also provided workshops on parenting and eating healthy and worked with SPARK staff in the kindergarten registration process to assure children received immunizations and health clearance in a timely fashion. SPARK efforts on the Wai'anae Coast were also supported through a partnership with the Wai'anae Neighborhood Place, which also provided workshops, assessment, and referral support and led the organization of the Keiki Spring Fest.



Figure 2. From a few small tents and a handful of participants in 2006,



the Keiki Spring Fest has grown to fill two large tents and over a 1,000 participants in 2008.

At the Hilo SPARK site, LACs worked closely with partner Kamehameha Schools to promote enrollment in the preschool. SPARK Hilo LACs were the instrumental in the formation of a group informally named “Da Titas” (a Hawaiian-pidgin-English term roughly meaning “the sisters”). Included in Da Titas were representatives from the various agencies and organizations on the Big Island that work with children and families. By working as a group and coordinating efforts, Da Titas could leverage the individually scarce resources into something powerful.

Specific outcomes from these partnerships have been discussed in previous reports, including reporting on the number of activities initiated or supported and the number of participants reached. Throughout the 5 years of the SPARK-HI project, 475 partners (both individuals and agencies) joined the effort to support ready kids. The partners recorded 914 activities that reached 10,917 participants.

The policy initiatives supported by GBA and INPEACE CEO were instrumental in the

passage of the historic Keiki First legislation. WCCHC continues to assess all children at developmental milestones as a result of their participation in SPARK-HI, and the Keiki Spring Fest has grown into an annual event completely organized by the agencies servicing families on the Wai‘anae Coast. Other long-lasting effects of SPARK-HI include major participation in the development and publication of the Hawai‘i State Preschool Content Standards, printing of “Family/Community Guidelines,” and development and printing of thousands of Transition (into kindergarten) Toolkits. The HDOE requires a kindergarten classroom assessment of readiness done by all kindergarten teachers using the HSRA, and HDOE is working with the University of Hawai‘i to create a seamless P–20 transition. On the Big Island, the Hawaiian Homestead of Keaukaha has developed a long-range plan for educational goals and how to support those goals. Kamehameha Schools now funds the SPARK-HI kindergarten transition program Keiki Steps To Kindergarten (KSTK) at select elementary schools on all islands. These outcomes can be traced back to SPARK relationships with these and other community partners like HAEYC, ‘Eleu, Pūnana Leo, HawaiiDotMoms, Fine, Okimoto Corporation, and Keaukaha Market.

Concrete measures of the depth of the partnerships are in-kind contributions and leveraged funds. In FY 2005, as an example, \$269,120 (17% of the SPARK-HI budget) was from sources other than the W.K. Kellogg Foundation. In-kind contributions over the first two years of SPARK-HI amounted to \$423,186 from eight different sources. During the first two years of the project, 5,680 hours were contributed by volunteers, such as board members, parents and families helping out in areas such as grant writing, attending meetings, and testifying.

SPARK-HI Measured and Evaluated School Readiness Appropriately (Culturally and Technically).

The SPARK-HI evaluation plan called for particular attention to cultural appropriateness for the Native Hawaiian population the project serves. It built on the evaluation framework developed by the Evaluation Hui, a consortium of Native Hawaiian and Māori evaluators, and described by Kawakami, Aton, Cram, Lai, and Porima (2008). Among the aspects of that framework that differ from most mainstream evaluation approaches are (a) the emphasis on storytelling by participants as well as by evaluators, (b) the community has input into major aspects of any evaluation, and (c) cultural significance is more important than statistical or practical significance.

Feedback/stories from participants were treated as primary, not supplemental, data. The following are representative verbatim comments taken from interviews:

- “I got more information from SPARK about school readiness; I’m more involved in the school.”
- “[SPARK-HI] helped [me] to learn from teachers so I could do it everyday; made me realize it is important to teach my child & not leave it up to teachers.”
- “I am volunteering my services to help the teachers in my grandson’s class. I read more often to grandchild.”
- “[SPARK-HI] made me more aware of my kuleana (responsibility) in my child’s learning process. It also encouraged more ohana (family) activities.”

Input from the Transition Interviews influenced changes to programming. After Learning only recently has there been a research-based effort in Hawai‘i to measure the readiness of children entering kindergarten (Grace & Brandt, 2006). That effort was based soundly on research and took much time and effort by researchers/test developers with strong relevant backgrounds; however, for practical reasons, the measure (the Hawai‘i School Readiness

Assessment) was used only at the group level, wherein teachers would rate their classrooms for an overall level of readiness. That group use of the instrument, however, was inadequate for conducting research on the readiness of an individual child after ECE experiences. Accordingly we obtained permission and used the individual version (I-HSRA) of the test that Grace and Brandt had developed but that had not been used widely in Hawai‘i’s schools (Appendix A).

The SPARK-HI Evaluators Analyzed Data Technically Appropriately.

We computed effect sizes *d* for all I-HSRA (Appendix B) comparisons by dividing differences in means by the pooled standard deviation of each group. Unlike analyses using tests of statistical significance, effect-size analyses focus on how large and meaningful differences are (Coladarci, Cobb, Minium, & Clarke, 2004). Because there were not enough prior related published studies to provide sound suggested interpretations of effect size, we chose to use the conventions suggested by Cohen (1988): *d* = .2, small; *d* = .5, moderate; *d* = .8, large.

SPARK-HI Children Were More Ready Than a Non-SPARK-HI Comparison Group.

Using these conventions, we found that when SPARK-HI children are compared with non-SPARK-HI children, effect sizes in all domains (Approaches to Learning, Literacy, Math, Behavioral, Social/Emotional, and Physical Well-Being) are small to moderate with *all comparisons favoring the SPARK-HI children*. For SPARK-HI girls, effect sizes in five of the six domains were moderate, with the effect size for Approaches to Learning having the only small effect size. Means of the various subgroups are shown in Table 2.

Table 2. *SPARK-HI w/ECE Compared to SPARK-HI no ECE Compared to Non-SPARK*

I-HSRA Domains	SPARK-HI w/ECE n = 49	SPARK-HI no ECE n = 118	Non-SPARK n = 448
Approaches	3.2	3.1	3.0
Literacy	3.2	3.0	2.7
Math	3.3	3.1	2.7
Behavioral	3.4	3.3	3.0
Social/Emotional	3.4	3.3	3.0
Physical Well-Being	3.6	3.5	3.3

Key: 1 = Not Yet; 2 = Beginning; 3 = Sometimes; 4 = Almost Always.

SPARK-HI Children With ECE Experiences Were More Ready for Kindergarten Than Were SPARK-HI Children Without ECE Experiences.

Having found these effect sizes, all favoring SPARK-HI groupings, we then compared, within SPARK-HI children, SPARK-HI children who had some ECE (primarily family child interaction) with SPARK-HI children who had no ECE experiences (see Table 3). We found additional small to moderate effect sizes, all favoring the groups of SPARK-HI children with ECE. SPARK-HI girls contributed more to these differences than did the SPARK-HI boys. The largest effect size found was .70 (“large” according to Cohen’s conventions, 1988) for the

comparison between SPARK-HI girls with ECE experiences and SPARK-HI girls without ECE experiences. The results for these groupings were similar to results found in data from the Peabody Picture Vocabulary Test-III (Appendix C) administered in conjunction with the Individual Hawai‘i School Readiness Assessment (I-HSRA). Data on types of ECE are shown in Table 4.

Peabody Picture Vocabulary Test Results Corroborated That SPARK-HI With ECE was More Effective Than SPARK-HI Without ECE.

While Learning Advocates were participating in the First Transition Interview, the children were administered the Peabody Picture Vocabulary Test-III (PPVT), which is designed for persons 2½ through 90+ years for two purposes: as an achievement test of receptive vocabulary and as a screening test of verbal ability in standard English.

Data collection for Cohort 1 and Cohort 2 was sporadic. In some cases there were staffing problems to cover all the children in the time allotted. The issue with homelessness in this area also caused problems with locating families. It was not until we reached collecting data for Cohort 3 that we were able to administer all the assessments and interviews to a majority of the participants and obtain a sufficient sample size to make a detailed analysis of the results:

Table 3. *Distribution of PPVT Results for Cohort 3 in Relation to ECE Experience*

PPVT-III Results Cohort 3 (children born in 2002)	Ages in Months		
	Mean Tested Equivalent Age	Mean Actual Age	Mean PPVT Tested-Actual Age
All SPARK-HI (n = 118 ¹)	56.8	62.0	-5.2
SPARK-HI Males (n = 74)	56.4	62.1	-5.8
SPARK-HI Females (n = 44)	57.6	61.9	-4.3
All w/ECE (n = 49)	61.1	61.7	-0.6
Males w/ECE (n = 29)	59.5	61.5	-2.0
Females w/ECE (n = 20)	63.4	62.1	1.3
All no ECE (n = 68)	53.8	62.3	-8.5
Males no ECE (n = 44)	54.3	62.6	-8.3
Females no ECE (n = 24)	52.8	61.8	-8.9

¹ The scores of the 8 participants listed as “Unknown” for their ECE were not included in the evaluation.

Table 4. *Distribution of ECE Experiences for Cohort 3 SPARK-HI Participants*

SPARK C-3's ECE	Where more than one program checked	Count provided to Initiative-Level evaluation
In-home/none	56	68
Healthy start	5	0
Headstart	5	5
PINK	1	0
HIPPY	1	0
Keiki Steps	23	23
Pub. Pre-K	0	0
CCC	0	0
Family Care	1	1
Informal	14	0
other	17	21
Unknown	8	8
	131	126
50% had informal/no ECE		
20% participated in Keiki Steps		
20% participated in other programs (KSBE, ECS, Tutu & Me, etc.)		
10% unknown ECE experience		

Because the PPVT is a one-on-one assessment and required active parental permission, we were not able to administer the PPVT to the comparison group of students.

There was Substantial National Dissemination of SPARK-HI Results.

In addition to numerous presentations at local meetings and conferences, there were several national presentations:

Lai, M. K., Goo, S. F., York, S. E., & Sarsona, M. (2006). *Building cultural bridges: The impact of culturally appropriate relationships in programming and evaluation*. Presentation at the annual conference of the American Evaluation Association, Portland, OR.

Lai, M. K., York, S. E., Goo, S. F. (2006, March). *Building cultural bridges: Supporting Partnerships to Assure Ready Kids (SPARK)*. Presentation at the annual conference of SmartStart, Greensboro, NC.

Lai, M. K., & York, S. E. (2006). *Honoring and respecting the cultures of project participants, communities, funding agencies, and evaluators*. Presentation at the annual conference of the American Evaluation Association, Portland, OR.

York, S. E., & Lai, M. K. (2007). *Three methods for assessing Pre-K programs and elementary schools in Hawai'i*. Presentation at the annual conference of the American Evaluation Association, Baltimore.

Lai, M. K., & York, S. E. (2008). *A more appropriate determination of the effectiveness of a*

prekindergarten initiative in Hawaiian communities. Presentation at the Distinguished Paper Session of the American Educational Research Association, Chicago. [Also winner of the 2008 Distinguished Paper of the Hawai‘i Educational Research Association—WKKF’s Tony Berkeley described the paper as showing “. . .the ways in which our (SPARK/WKKF) co-created approach to school readiness embodies a more just, a more humane and, ultimately, a more effective form of social action on behalf of society’s youngest and most vulnerable.”]

SPARK-HI Evaluators Were Leaders in Numerous Project Aspects, Including the Initiative-Level Evaluation.

At national presentations with other SPARK sites, the SPARK-HI evaluators took on leadership tasks such as being responsible for cultural protocols and organizing technical, coordinating aspects of the presentations from the other sites. The SPARK-HI evaluators also played an active leadership role related to areas such as instrumentation, evaluation design, and definition of research/evaluation terms.

To meet the demands of the various stakeholders, the evaluation team compared the applicable standards and guidelines including the SPARK Pathways, the Hawai‘i Preschool Content Standards (aligned with the Hawai‘i Content and Performance Standards for Kindergarten), and Nā Honua Maoli Ola (guidelines for culturally appropriate environments). The resulting document (Appendix D) provided planners with a reference tool to use in future programming.

The Initiative-Level Evaluation methodology understandably set up an ethnic designation procedure that led to each participant being associated with one ethnicity. Because of the very different situation in Hawai‘i, we designed an algorithm that allowed SPARK-HI parents to designate multiple ethnic backgrounds of their children, and at the same time yielded the single-ethnic classification requested by the evaluation-consulting agency, Walter R. McDonald & Associates.

The SPARK-HI evaluation team contributed to the planning for the Ready Kids Follow-up (RKF) study by actively participating on the Measures Committee. As a result of this participation, the Hawai‘i School Readiness Assessment-Individual, will be used by the six grantees participating in the study. The Hawai‘i Department of Education (HDOE) requires that all kindergarten teachers complete the classroom-level version of this assessment, and the collection and evaluation of the results were funded by SPARK-HI for the first three years until HDOE assumed responsibility for the assessment for the 2008–2009 school year.

Another SPARK-HI contribution to the RKF study is the use of the SPARK-HI participant database shell to collect and view data over the Internet. This database is one of the databases created by the SPARK-HI evaluation team using FileMaker Pro; the other is the Partner/Activity database, which was instrumental in recording the quantitative data to report on relationship-building and sustainability efforts for SPARK-HI. The database developed by a member of the SPARK-HI evaluation team proved to be rated higher by users while being notably less costly than a similar database system developed by a commercial firm. INPEACE, the SPARK-HI grantee, recently switched data collection and management for its other programs to the less costly and more flexible FileMaker Pro system.

The SPARK-HI Project Provided Opportunities for Meaningful and Improving Employment in the Communities Served by SPARK.

Individuals who served primarily as Learning Advocate Coordinators (LACs) were the first line of contact with the families of SPARK-HI participants. The success of the program is due in large part to their knowledge of their community and their relationships with community leaders.

Five SPARK-HI staff members began college during the project, and two have since completed Associate degrees and have moved on to upper division studies. Staff participating in the sister program, Keiki Steps, also pursued formal education and obtained Child Development Assistant certificates or Associates in Teaching degrees.

SPARK-HI has Produced or Heavily Influenced Systemic, Sustainable Initiatives and Results.

In this section we provide a brief, selected listing of SPARK-HI-influenced efforts that have resulted in major systemic, sustainable improvements. Some of these results have been mentioned in earlier part of this report but under a different focus:

1. Statewide annual application of the Hawai'i School Readiness Assessment
2. Statewide annual application of Keiki Steps to Kindergarten (facilitates transition to kindergarten)
3. Major influence and continuing leadership in the WKKF-funded Hawai'i P-3 Initiative, the current focus of the P-20 Initiative.
4. Development and publication of *Hawai'i Preschool Content Standards and Guiding Principles*
5. Design and implementation of the annual P-3 Principals' Partnerships for Transition Summit
6. The annual, substantially expanding Keiki Spring Fest on the Leeward Coast of O'ahu
7. Strong, integrated relationship/partnership with Good Beginnings Alliance: areas of influence/involvement in ECE effectiveness include Department of Health's Early Childhood Comprehensive Services System, Champions for Children and Keiki Caucus (tracks all child-related bills), and fiscal agent for 2007 Hawai'i Children and Youth Day.
8. Substantial involvement in Nā Lau Lama, the Hawaiian Education Initiative to improve educational outcomes for Hawaiian students in public schools
9. Substantial involvement/leadership in the Keauākea Leadership Initiative on Hawai'i Island
10. Played a major part in the passing of Act 259, Early Learning Educational Task Force
11. Keiki First Initiative
12. Increase in all counties in the number of preschool programs that have begun to align their curriculum with the School Readiness Task Force Preschool Content Standards
13. More school complexes conduct extensive transition-to-kindergarten programs

SPARK Common Data Elements Provide Additional Evaluative Information.



**PROJECT LEVEL EVALUATION
COMMON DATA ELEMENTS
May 31, 2008**

These are the common data elements for the project level evaluations for the period of SPARK implementation June 1, 2003 to May 31, 2008.

Question 1: What were the sex, age, race, and type of early care and education (ECE) setting of children at SPARK enrollment?

Left SPARK means ended SPARK enrollment before May 31, 2008 for any reason.

Completed SPARK means ended enrollment after successful completion of the program.

Remain in SPARK means continuing enrollment after May 31, 2008.

Part 1: Number of SPARK Children (through May 31, 2008)									
Data Elements	Grantees								
	DC	FL	GA	HI	MS	NM	NC	OH	TOTAL
Enrolled in SPARK				641					
Left SPARK prematurely				116					
Completed SPARK				505 ²					
Remain in SPARK post May 31, 2008				0					
Part 2: Identifying Data on Children									
<i>Number of Children at Enrollment</i>									
Male				345					
Female				296					
Missing				0					
Age 2				165					
Age 3				391					
Age 4				72					
Age 5				0					
Missing				13					
African-American				7					
Asian				29					
American Indian				4					
Native Hawaiian/Pacific Islander				502					
White				23					
Hispanic/Latino Ethnicity				19					
Mixed/Other				47					
Missing				10					

² A total of 23 children, mostly younger siblings of other SPARK-HI participants, enrolled in an unofficial “cohort 4” and were too young to complete the program (enter kindergarten) as of May 31, 2008. Three “cohort 4” children left SPARK prior to May 31, 2008.

Part 3: Type of Early Care and Education (ECE) Setting at SPARK Enrollment									
Number of Children at Enrollment									
Head Start				24					
Public pre-K program				2					
Child care center				1					
Informal				3					
In home—no other child care				214					
Other (Family Child Interaction Learning)				320					
Missing				77					

Question 2: How did your project define SPARK enrollment? The ILE Team assumes all children received an assessment/screening and a learning advocate. Please check all that apply and describe.

Parents or guardians completed and signed the registration form and signed the consent to participate forms. Families remain “enrolled” as long as we can make regular contact with them (by mail, phone, or home visit) or until the parent or guardian requests to be removed from participation in SPARK.

Child attended SPARK identified ECE setting or classroom (describe)

Children enrolling in SPARK-HI who were not already in an ECE setting were referred to programs, primarily SPARK-HI’s sister program, Keiki Steps. If parents were not able or willing to enroll their child in a formal ECE setting, they were provided with access to workshops and a calendar of pre-learning activities (workshops open to community-at-large, and activities calendar provided to all SPARK-HI families).

Education needs of children discussed by transition team (describe)

Each SPARK-Hawai’i child had a learning advocate but did not, in general, have any specific transition team.

Children received services such as home visits, counseling, or tutoring, other direct services (describe)

Children identified as needing further assessment were referred to an appropriate agency.

Parents received services such as home visits, counseling, or tutoring, other direct services (describe)

SPARK-HI families were provided with ‘Ohana Resource Kits which contained information on a variety of community programs available.

Other (describe)

SPARK-HI staff’s success in data collection for Cohort 3 was notably better than it had been for Cohorts 1 and 2. We learned that teachers and schools needed to be “brought on board” with the process before the end of the school year preceding data collection. They could then plan for the interruption of data collection in their work for the first few months of school. SPARK-HI also offered classroom assistance in the form of aides that occupied students while the teacher completed the I-HSRA, which the aide collected and returned to the evaluation team.

Question 3: How many children were screened or assessed at SPARK enrollment since SPARK implementation (June 1, 2003)? Please identify the measures and enter the number of children screened or assessed. How many were identified as in need of follow-up?

If children had more than one assessment, enter the results for each measure. You may also enter results from the sub-domains of one instrument, but the total in the last row must be an unduplicated count of children.

Screening/ assessment measures	Number of children receiving an initial screening/ assessment at SPARK enrollment	Number of children in need of follow-up as a result of initial screening/ assessment
Ages and Stages Questionnaire	483	30
Total (unduplicated count)	483	30

Question 4: Please provide as much data as you can on the characteristics of children who were referred for follow-up services and what services they received after the initial screening or assessment.

Children assessed through the SPARK-Wai‘anae office were referred to the Wai‘anae Neighborhood Place for additional screening and services. Children assessed through the Wai‘anae Coast Comprehensive Health Center were referred in-house for additional screening and referral to appropriate agencies. Children assessed through the SPARK-Hilo office were referred directly to applicable service agencies, which completed additional screenings and offered services.

Question 5: How many SPARK children were ready for kindergarten in the fall of 2007? Please name the measures used for kindergarten readiness and the number of children assessed and found to be ready. Do not include children assessed as ‘almost ready,’ ‘not ready,’ or other findings.

If children had more than one assessment, enter the results for each measure. You may also enter results from the sub-domains of one instrument, but the total in the last row must be an unduplicated count of children.

The Hawai‘i School Readiness Assessment-Individual (I-HSRA) described earlier was used on all students in participating schools/classrooms. The kindergarten teacher completed the assessment using identifiers for SPARK children and no personally identifiable information for non-SPARK children.

Kindergarten readiness measures	Number of SPARK children assessed for kindergarten readiness	Number of SPARK children identified as ready for kindergarten
Peabody Picture Vocabulary Test III	142	Table 3. Distribution of PPVT Results
Hawai‘i School Readiness Assessment-Individual	138	See question 6
Total (unduplicated count)	138	

Question 6: Which SPARK children were ready for kindergarten in the fall of 2007? Please name the measures used for kindergarten readiness and the number of children assessed and found to be ready. Do not include children assessed as ‘almost ready,’ ‘not ready,’ or other findings.

Child characteristics	Number of SPARK children assessed for kindergarten readiness	Number of SPARK children identified as ready for kindergarten
A. Male	84	The HSRA does not report a score that could be associated with the term “ready” in its definitive sense. The authors purposefully constructed it in this way so as to prevent misinterpretation of the data by the general public. Instead, the HSRA evaluates the demonstration of pre-learning skills in six domains: Approaches to Learning, Literacy, Math Skills, School Behavior & Skills, Social Emotional Behaviors, and Physical Well-being.
B. Female	54	
C. Age 4		
D. Age 5	144	
E. Age 6		
F. African-American	3	
G. Asian	8	
H. American Indian	2	
I. Native Hawaiian/Pacific Isl.	111	
J. White	5	
K. Hispanic/Latino Ethnicity	9	
L. Primary language not English	Not reported	

M. Enrolled in SPARK while attending Head Start	24	The I-HSRA uses a 5-point scale: 1 = Not Yet 2 = Beginning 3 = Sometimes 4 = Almost Always 0 = Not Observed (no opportunity to demonstrate)
N. Eligible for free or reduced lunch at school	149 ³	
O. Single parent household	184	
P. Mother completed high school	310	

Question 7: How many comparison children were ready for kindergarten in the fall of 2007? Please name the measures used for kindergarten readiness and the number of children assessed and found to be ready. Do not include children assessed as ‘almost ready,’ ‘not ready,’ or other findings.

The Hawai‘i School Readiness Assessment-Individual (I-HSRA) described earlier was used on all students in participating schools/classrooms. The kindergarten teacher completed the assessment using identifiers for SPARK children and no personally identifiable information for non-SPARK children.

If children had more than one assessment, enter the results for each measure. You may also enter results from the sub-domains of one instrument, but the total in the last row must be an unduplicated count of children.

Kindergarten readiness measures	Number of comparison children assessed for kindergarten readiness	Number of comparison children identified as ready for kindergarten
Hawai‘i School Readiness Assessment-Individual	455	See question 6
Total (unduplicated count)	455	

Question 8: Which comparison children were ready for kindergarten in the fall of 2007? Please name the measures used for kindergarten readiness and the number of children assessed and found to be ready. Do not include children assessed as ‘almost ready,’ ‘not ready,’ or other findings.

Child characteristics	Number of comparison children assessed for kindergarten readiness	Number of comparison children identified as ready for kindergarten
A. Male	241	See question 6
B. Female	209 ⁴	
C. Age 4	Comparison children were assessed anonymously; therefore, this information is not available.	
D. Age 5		
E. Age 6		
F. African-American		
G. Asian		
H. American Indian		
I. Native Hawaiian/Pacific Isl.		
J. White		
K. Hispanic/Latino Ethnicity		
L. Primary language not English		
M. Enrolled in SPARK while attending Head Start		
N. Eligible for free or reduced lunch at school		
O. Single parent household		
P. Mother completed high school		

³ Items N, O, & P: Data from self-reported information provided on voluntary basis. Not all SPARK-HI families reported this information.

⁴ Two records had no gender reported.

Question 9: How many SPARK children were ready for the first grade in the fall of 2007? Please name the measures used for first grade readiness and the number of children assessed and found to be ready. Do not include children assessed as ‘almost ready,’ ‘not ready,’ or other findings.

N/A

If children had more than one assessment, enter the results for each measure. You may also enter results from the sub-domains of one instrument, but the total in the last row must be an unduplicated count of children.

First grade readiness measures	Number of SPARK children assessed for first grade readiness	Number of SPARK children identified as ready for first grade
N/A		
Total (unduplicated count)		

Question 10: How many comparison children were ready for first grade in the fall of 2007? Please name the measures used for first grade readiness and the number of children assessed and found to be ready. Do not include children assessed as ‘almost ready,’ ‘not ready,’ or other findings.

N/A

If children had more than one assessment, enter the results for each measure. You may also enter results from the sub-domains of one instrument, but the total in the last row must be an unduplicated count of children.

First grade readiness measures	Number of comparison children assessed for kindergarten readiness	Number of comparison children identified as ready for kindergarten
N/A		
Total (unduplicated count)		

Please duplicate the tables in questions 9 and 10 if you wish to report data from the fall of 2007 for children entering the second grade.

Discussion

The evaluation design for SPARK-HI differed notably from approaches used in widely reported evaluations. We delineated the major problematic areas and then used a more appropriate (methodologically as well as ethically) method. This evaluation approach provided a variety of data from different sources that corroborated the success of the program. Our finding that non-center-based, family-child interaction ECE experiences of SPARK-HI had a clear positive effect also differed from the field’s prevalent types of findings, which have been focused mainly on the effects of center-based preschool.

Numerous effect-size analyses yielded a clear finding that SPARK-HI children outscored non-SPARK-HI children in all six domains of the Individual Hawai‘i School Readiness Assessment. In addition SPARK-HI children with some ECE experiences outscored SPARK-HI children without any ECE.

Having integrated findings from interviews and other qualitative evaluation procedures with data from a new, locally developed, research-based instrument, we are confident about our finding that SPARK-HI had a noteworthy positive effect on the kindergarten readiness of the participants.

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Children Ready For Success Preschool and Kindergarten Four and Five-Year Olds Individual Assessment

Young children are ready for successful learning experiences in school when there is a positive interaction among the child's developmental characteristics, school practices and family and community support.

Readiness definition adopted by the State of Hawaii

This instrument assesses key skills and characteristics that are considered necessary for a successful learning experience upon entry to kindergarten. It is specifically designed for **center-based preschool programs for four-year-olds** and for **kindergartens**.

Please complete the child information below. All background information is confidential and will be coded to ensure anonymity.

Preschool or Kindergarten Child Information

Date of Assessment ____/____/____ School _____
Teacher Name _____
Child's Name _____
Child's Sex: Male _____ Female _____
Home Language of Child: English Yes _____ No _____

For Program Director or Kindergarten Teacher to Complete

Child qualifies for tuition subsidy (preschool) or free or reduced lunch (kindergarten): Yes _____ No _____

Socio-Economic Status (SES) of Child

High SES _____ (Parent is a professional, usually college educated; income around \$75,000 or higher)

Middle SES _____ (Parent holds a skilled occupation, usually has some college, income around \$50,000 or higher)

Low SES _____ (Parent holds a semi-skilled job or is unemployed; child qualifies for tuition subsidy or free or reduced lunch)

Directions for Preschool or Kindergarten Teacher

Please read each item on pages 3 and 4 (items 1 - 24) before rating the child’s skills and characteristics. Then please rate the child using the following:

Not Yet If the child is not yet displaying the skill or characteristic, please circle the **1**

Beginning If the child has just begun to display the skill or characteristic and displays it infrequently, please circle the **2**

Sometimes If the child displays the skill or characteristic sometimes but is not consistent, please circle the **3**

Almost Always If the child displays the skill or characteristic consistently and reliably, please circle the **4**

Not Observed If the classroom curriculum and activities do not provide situations for the child to show the skill or characteristic, please place a check [→] under “**not observed.**”

Examples of Ratings

How consistently does the preschool or kindergarten child display the skill or characteristic?					
	Not Yet	Beginning	Sometimes	Almost Always	Not observed
1. Helps you without being asked.	1	2	3	4	
2. Separates from caregiver without problems.	1	2	3	4	
3. Recognizes name in print.	1	2	3	4	→

Explanation

1. This preschool or kindergarten child is just **beginning** to help the teacher without being asked. This means that the child helps infrequently and needs reminders and assistance to do so.
2. This preschool or kindergarten child is able to separate from her caregiver without a problem each morning and has done so **consistently** over a period of time.
3. Because the curriculum activities do not provide such situations, the teacher placed a → by this skill, “*recognizes name in print.*”

Please do not skip any of the items on the following pages. If you are unsure, please take time to observe the child. This survey should take you between 5 to 10 minutes.

Hawaii Children Ready for Success Individual Assessment

Circle the rating that best describes the child's skill or characteristic.	Not Yet	Begin-ning	Some-times	Almost Always	Not Ob-served
1. Comes to school well rested, fed, and alert.	1	2	3	4	
2. Practices personal hygiene such as washes hands after toilet and before eating.	1	2	3	4	
3. Is independent in caring for self and own belongings.	1	2	3	4	
4. Needs minimal support to adjust to new people and new places.	1	2	3	4	
5. Works and plays well with others.	1	2	3	4	
6. Shows satisfaction in accomplishments.	1	2	3	4	
7. Expresses emotions through appropriate actions & words.	1	2	3	4	
8. Is respectful of others.	1	2	3	4	
9. Is able to listen for about 15 minutes to group discussions & stories read aloud.	1	2	3	4	
10. Is able to follow classroom routines.	1	2	3	4	
11. Shows eagerness to learn by observing, asking questions and/or exploring new things.	1	2	3	4	
12. Tries hard and persists.	1	2	3	4	
13. Appears interested in the world around him or her (curious).	1	2	3	4	
14. Communicates ideas and describes things using phrases and sentences.	1	2	3	4	
15. Shows familiarity with how books work (e.g. holds book right side up; turns pages front to back; etc.).	1	2	3	4	
16. Shows interest in books and print (e.g., chooses to look at books; asks to be read to, etc.)	1	2	3	4	
17. Knows names and sounds (more than 3) of some letters.	1	2	3	4	
18. Uses symbols, scribbles or letter-like forms to "write" words or ideas.	1	2	3	4	
19. Can count a set of 5 objects.	1	2	3	4	
20. Is able to sort and classify objects.	1	2	3	4	
21. Knows names of some (more than 3) numerals (e.g., "2" is called "two").	1	2	3	4	
22. Recognizes and can duplicate simple patterns.	1	2	3	4	
23. Shows large muscle control (e.g., can walk without stumbling, jumps, hops, etc.)	1	2	3	4	
24. Shows small muscle control (e.g., use of pencils, drawing & art tools.)	1	2	3	4	

THANK YOU

Means, Standard Deviations, and Effect Sizes for I-HSRA

SPARK-HI ECE vs. no ECE	SPARK-HI no ECE		STDEV	SPARK-HI w/ECE		STDEV	Difference	Effect Size
Approaches	n = 68	3.0	0.8	n = 49	3.2	0.9	-0.2	-0.24
Literacy	n = 68	2.9	0.9	n = 49	3.2	0.9	-0.3	-0.33
Math	n = 68	3.0	0.9	n = 49	3.3	0.8	-0.3	-0.35
Behavioral	n = 68	3.1	0.7	n = 49	3.4	0.7	-0.3	-0.43
Social/Emotional	n = 68	3.1	0.7	n = 49	3.4	0.7	-0.3	-0.43
Physical Well-Being	n = 68	3.5	0.6	n = 49	3.6	0.5	-0.1	-0.18

SPARK-HI vs. Non-SPARK	SPARK-HI		STDEV	Non-SPARK		STDEV	Difference	Effect Size
Approaches	n = 118	3.1	0.9	n = 448	3.0	0.8	0.1	0.12
Literacy	n = 118	3.0	0.9	n = 448	2.7	0.9	0.3	0.33
Math	n = 118	3.1	0.9	n = 448	2.7	1.0	0.4	0.41
Behavioral	n = 118	3.3	0.7	n = 448	3.0	0.8	0.3	0.38
Social/Emotional	n = 118	3.3	0.7	n = 448	3.0	0.8	0.3	0.38
Physical Well-Being	n = 118	3.5	0.6	n = 448	3.3	0.7	0.2	0.29

SPARK-HI Girls ECE vs. no ECE	no ECE		STDEV	with ECE		STDEV	Difference	Effect Size
Approaches	n = 24	3.2	0.8	n = 20	3.5	0.5	-0.3	-0.44
Literacy	n = 24	3.1	0.9	n = 20	3.4	0.7	-0.3	-0.37
Math	n = 24	3.1	0.8	n = 20	3.6	0.6	-0.5	-0.70
Behavioral	n = 24	3.3	0.8	n = 20	3.7	0.4	-0.4	-0.62
Social/Emotional	n = 24	3.3	0.7	n = 20	3.6	0.4	-0.3	-0.51
Physical Well-Being	n = 24	3.6	0.5	n = 20	3.8	0.3	-0.2	-0.47

SPARK-HI Boys ECE vs. no ECE	no ECE		STDEV	with ECE		STDEV	Difference	Effect Size
Approaches	n = 44	2.9	0.8	n = 29	3.0	1.1	-0.1	-0.11
Literacy	n = 44	2.8	0.9	n = 29	3.0	1.0	-0.2	-0.21
Math	n = 44	2.9	1.0	n = 29	3.1	0.9	-0.2	-0.21
Behavioral	n = 44	3.0	0.7	n = 29	3.2	0.8	-0.2	-0.27
Social/Emotional	n = 44	3.1	0.7	n = 29	3.2	0.8	-0.1	-0.13
Physical Well-Being	n = 44	3.4	0.7	n = 29	3.4	0.6	0.0	0.00

Girls SPARK-HI vs. Non-SPARK	SPARK-HI		STDEV	non-SPARK		STDEV	Difference	Effect Size
Approaches	n = 44	3.3	0.7	n = 208	3.1	0.8	0.2	0.26
Literacy	n = 44	3.2	0.8	n = 208	2.8	0.9	0.4	0.45
Math	n = 44	3.3	0.7	n = 208	2.8	1.0	0.5	0.52
Behavioral	n = 44	3.5	0.6	n = 208	3.1	0.8	0.4	0.52
Social/Emotional	n = 44	3.5	0.6	n = 208	3.1	0.7	0.4	0.58
Physical Well-Being	n = 44	3.7	0.4	n = 208	3.3	0.7	0.4	0.61

Boys SPARK-HI vs. Non-SPARK	SPARK-HI		STDEV	non-SPARK		STDEV	Difference	Effect Size
Approaches	n = 74	3.0	0.9	n = 240	2.9	0.8	0.1	0.12
Literacy	n = 74	2.9	0.9	n = 240	2.6	0.9	0.3	0.33
Math	n = 74	3.0	1.0	n = 240	2.6	1.0	0.4	0.40
Behavioral	n = 74	3.1	0.7	n = 240	2.9	0.8	0.2	0.26
Social/Emotional	n = 74	3.1	0.7	n = 240	2.9	0.8	0.2	0.26
Physical Well-Being	n = 74	3.4	0.6	n = 240	3.3	0.7	0.1	0.11

Cohort 3 PPVT-III Results

PPVT-III Results Cohort 3 (children born in 2002)	Ages in Months		
	Mean Tested Equivalent Age	Mean Actual Age	Mean PPVT Tested-Actual Age
All SPARK-HI (n = 117)	56.8	62.0	-5.2
SPARK-HI Males (n = 74)	56.4	62.1	-5.8
SPARK-HI Females (n = 44)	57.6	61.9	-4.3
All w/ECE (n = 49)	61.1	61.7	-0.6
Males w/ECE (n = 29)	59.5	61.5	-2.0
Females w/ECE (n = 20)	63.4	62.1	1.3
All no ECE (n = 68)	53.8	62.3	-8.5
Males no ECE (n = 44)	54.3	62.6	-8.3
Females no ECE (n = 24)	52.8	61.8	-8.9

**Comparison of NHMO to Current SPARK-Hawai'i Activities, SPARK Pathways to Ready Schools,
and the Hawai'i Pre-school Content Standards**

The following rating was accomplished by counting the number of times concepts in the comparison document appeared in the individual line items from NHMO

NHMO Schools & Institutions indicators to Hawai'i Pre-School Content Standards (HPCS)	NHMO #	NĀ HONUA MAULI OLA Guidelines	Comparison of current SPARK Activities ⁱ to NHMO in the Learners-, Families-, and Community-specific indicators		Comparison of NHMO Schools & Institutions indicators to SPARK Pathways to Ready Schools ⁱⁱ	
					SPARK Pathway (SP)	Rating of match of SP to NHMO indicators
Low (SP 1, 2)	1.	Incorporate cultural traditions , language, history, and values in meaningful holistic processes to nourish the emotional, physical, mental/intellectual, social and spiritual well-being of the learning community that promote healthy maui and mana.	17 of 29	High	1, 5	Med
None	2.	Maintain practices that perpetuate Hawaiian heritage , traditions, and language to nurture one's maui and perpetuate the success of the whole learning community.	13 of 20	Med	5	Med
High (SP 1, 2, 5)	3.	Sustain respect for the integrity of one's own cultural knowledge and provide meaningful opportunities to make new connections among other knowledge systems .	2 of 16	Low	5, 6	High
High (SP 1, 2, 5, 6)	4.	Instill a desire for lifelong exploration of learning , teaching, leading, and reflecting to pursue standards of quality and excellence.	10 of 19	Med	9, 6	High
High (SP 1,2, 5, 6, 7)	5.	Provide safe and supportive places to nurture the physical, mental/ intellectual, social, emotional, and spiritual health of the total community .	8 of 22	Low	7, 5, 2, 6	High
High (SP 1, 2, 5, 6, 7)	6.	Foster understanding that culture and tradition, as constantly evolving systems, are grounded in the knowledge of the past to address the present and future .	4 of 15	Low	None	Low
Med (SP 1, 2, 5, 6, 7)	7.	Engage in Hawaiian language opportunities to increase language proficiency and effective communication skills in a variety of contexts and learning situations.	3 of 42	Low	9, 6	Low
High (SP 1, 2, 5, 6, 7)	8.	Engage in activities independently or collaboratively with community members to perpetuate traditional ways of knowing, learning, teaching, and leading to sustain cultural knowledge and resources within the learning community.	10 of 33	Low	7, 6	Low

NHMO Schools & Institutions indicators to Hawai'i Pre-School Content Standards (HPCS)	NHMO #	NĀ HONUA MAULI OLA Guidelines	Comparison of current SPARK Activities ⁱ to NHMO in the Learners-, Families-, and Community-specific indicators		Comparison of NHMO Schools & Institutions indicators to SPARK Pathways to Ready Schools ⁱⁱ	
					SPARK Pathway (SP)	Rating of match of SP to NHMO indicators
High (SP 6, 8)	9.	Utilize multiple pathways and multiple formats to assess what has been learned and honor this process to nurture the quality of learning within the community.	5 of 12	Med	8, 4	Med
None	10.	Support lifelong aloha for Hawaiian language, history, culture, and values to perpetuate the unique cultural heritage of Hawai'i.	4 of 19	Low	None	Low
High (SP 1, 2, 5, 6, 7)	11.	Promote personal growth and development to strengthen cultural identity, academic knowledge and skills, pono decision making, and the ability to contribute to one's self and family, and local and global communities.	8 of 25	Med	1, 3, 9, 6	High
Low (SP 1, 2)	12.	Develop an understanding of Hawaiian language, history, culture, and values through an indigenous perspective to foster a sense of self, place, community, and global connection.	4 of 35	Low	3, 7, 6	Med
Med (SP 1, 2, 5)	13.	Promote respect for how the Hawaiian cultural worldview contributes to diversity and global understanding to enhance one's sense of self, family, and local and global communities.	None	None	None	Low
High (SP 1, 2, 5, 6, 7)	14.	Plan for meaningful learner outcomes that foster the relationship and interaction among people, time, space, places, and natural elements around them to enhance one's ability to maintain a "local" disposition with global understandings.	2 of 17	Low	7,6	Med
High (SP 2, 5, 6, 7)	15.	Engage in experiences which mālama the entire learning community and the environment to support learning and good practices of stewardship, resource sustainability, and spirituality.	1 of 15	Low	7, 3, 6	High
Low (SP 1, 2)	16.	Cultivate a strong sense of kuleana to one's past, present, and future to enhance meaningful purpose and to bring about joy and fulfillment for one's self and family, and local and global communities.	None	None	3, 5	High

- SPARK-Hawai'i demonstrates strength in NHMO Guidelines 1, 4, 9, and 11, with no activities that support NHMO Learner, Family, or Community Guidelines 13 and 16.
- NHMO Guidelines 6, 10, and 13 do not have a strong correlation to any of the 9 SPARK Pathways to Ready Schools, while NHMO Guidelines 2, 4, 5, 11, and 15 show the strongest correlation to the SPARK Pathways.

- Indicators for SP 6 (Parental Involvement) are dispersed throughout the NHMO Guidelines 3, 4, 5, 6, 8, 11, 12, 14, and 15, but none of the NHMO Guidelines directly matches this pathway.
- Only NHMO Guideline 9 has an indicator that relates to SP 4 (Connections to early care and education).
- HPCS Guiding Principal 10 (inclusive classrooms) is not specifically covered in NHMO; SP 3 (Leadership), and SP 4 (Connections to ECE) are not specifically matched to HPCS Guiding Principals; NHMO 2 and 10 are not specifically linked to HCPS.

ⁱ In the opinion of the Evaluation Coordinator, the number of past and/or current SPARK-Hawai‘i activities that match with indicators from Learner, Family, and/or Community NHMO guidelines, or current partnerships and resources could be expanded to support related activities; sustained/sustainable for both sites. For example, in NHMO #1 Learners, 2 of the 10 indicators matched, 4 of 8 Family indicators matched, and 11 of 11 indicators matched from Community for an overall match rate of 60%.

ⁱⁱ For example, in NHMO #1, elements from SPARK Pathways (SP) 1 & 5 matched with duplication (8 matches) to the 6 NHMO School indicators for a match rate of 133%.