National Wildlife Federation Schoolyard Habitat: Year 1 Implementation

Department of Research and Evaluation
AUSTIN INDEPENDENT SCHOOL DISTRICT

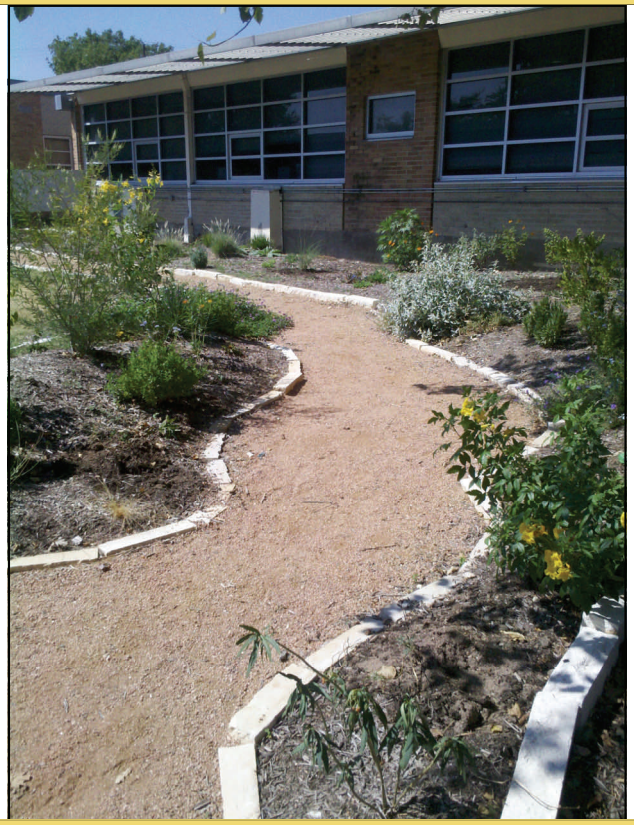
What is Schoolyard Habitat?

Schoolyard Habitat (SYH). To help reconnect children with the outdoors, the National Wildlife Federation (NWF) assists schools in developing outdoor classrooms called Schoolyard Habitats® (SYH), where educators and students learn how to attract and support local wildlife. These wildlife habitats become places where students not only learn about wildlife species and ecosystems, but also become outdoor classrooms where students can hone their academic skills and nurture their innate curiosity and creativity.

NWF has encouraged conservation through wildlife habitats since 1973. In 1996, the SYH program was created to meet the growing interest and needs of schools and districts in creating and restoring wildlife habitats on school grounds. The SYH program focuses specifically on assisting school communities in the use of school grounds as learning sites for wildlife conservation and cross-curricular learning.

Schoolyard Habitats® is a part of the National Wildlife Federation's Be Out There™ initiative, which aims to inspire families across America to open the door and get outside.

For more information, visit the NWF website.



Dawson Elementary Schoolyard Habitat 2011 by Anne Muller.

How were teachers introduced to Schoolyard Habitat?

Professional development (PD) and use of reporting tools. In 2010-2011, principals volunteered their campuses and teachers within those schools volunteered their classes for participation. Five elementary schools participated and four middle schools participated.

All PD sessions were led by the NWF program coordinator. Separate trainings were held for elementary and middle school teachers; three trainings were held per level. The PD was designed to align with district instructional planning guides (IPGs) in elementary schools and curriculum road maps (CRMs) in middle schools. For example, the elementary PD sessions were described in the course catalog as follows:

> "The workshops will be activity-based and will model activities from the IPGs. Participants will receive materials, handouts and resources to use during their science instruction. This professional development is designed to model Best Practices in science instruction written into the IPGs including science content knowledge, pacing of science lessons, AISD science philosophy, science pedagogy, Kagan structures, the 5E Inquiry Model, and Interactive Notebooks. (AISD eCampus PD database, 2010-2011)

SYH participating schools, year 1.

Elementary	Middle
Casis	Bailey
Clayton	Burnet
Dawson	O'Henry
Ridgetop	Small
Rodriguez	

The PD introduced teachers to native plants that would be weather-robust and attract local wildlife to the habitat, including birds, butterflies and insects. The PD also introduced teachers to the Access Nature Curriculum, a curriculum

What data were used and how were they analyzed?

Methods used in this report. In accordance with Department of Research and Evaluation (DRE) standard recommendations, this year 1 report focuses on implementation rather than on student academic outcomes. Data for this report were from two sources, PD attendance records and online reporting tools. Initially, PD attendance was measured using the eCampus database maintained by the district. However, data were not entered into this system consistently and were deemed inaccurate. Sign-in sheets collected by the NWF were used to measure PD attendance.

Several online reporting tools were provided to participants using SurveyMonkey®. Teachers were asked to complete at least 10 habitat-related activities during year 1 and to record all activities. However, they only needed to complete an observation form for two activities. Many teachers logged an observation for more than two activities. A complete account of PD attendance and use of online reporting tools is shown on page 3.

To participate *fully* in SYH, teachers attended PD over the summer, used online tools for reporting progress, and then used their schoolyard habitat in their curriculum. Of the 45 participants, only 16 met the criteria for full participation. As a result, DRE was not able to estimate the program effect on science TAKS.

Data as collected using the observation tool were not easily aligned with program curricula. A program facilitator was hired as an AISD staff person for year 2 of the program. This facilitator reviewed data from year 1 and provided additional codes to align activities reported as observations with lessons in the program curricula.

Analyses for this report were initially directed by the evaluation plan. The evaluation plan was written prior to the program year in coordination between DRE and the NWF program officer. As is often the case in an evaluation, data collection does not always proceed as anticipated. Modifications to analyses are explained in the following section and in the "Lessons Learned" section of this report.

What kinds of activities did SYH classrooms engage in?

Types of activities observed (n=124 observations). The most popular lessons and activities were General Habitat Observations, Nature Scavenger Hunt and Habitat Hunt. Teachers who explored their habitats with their students did activities such as collect soil and rock samples, sketch the habitat, and record observations (e.g., including observations of habitat inhabitants and weather patterns). The average time for these lessons was about 40 minutes.

Top 10 Lessons and Activities Documented During Recorded Observations.

Lesson or activity	Description	Count
General Habitat Observations		19
Nature Scavenger Hunt	Scavenger hunt of the grounds	16
Habitat Hunt	Look for habitat components in the school yard	12
Dream Habitat	Draw / design their dream habitat for the schoolyard space	7
Site Mapping	Create a to scale map of the habitat area	6
Plant and Animal Life		5
Breaking New Ground	Hardscaping, digging, prepping the area for planting	4
Keep Austin Beautiful		4
Local Wildlife	Food web activity	3
Planting your Wildlife Habitat Site	Planting the plants in their habitat	3

Note: The highlighted activities were not official lessons from Access Nature or the How-to-guide. These were teacher-created activities and so do not have a general description across classrooms.

What did participation in Schoolyard Habitat look like in year 1?

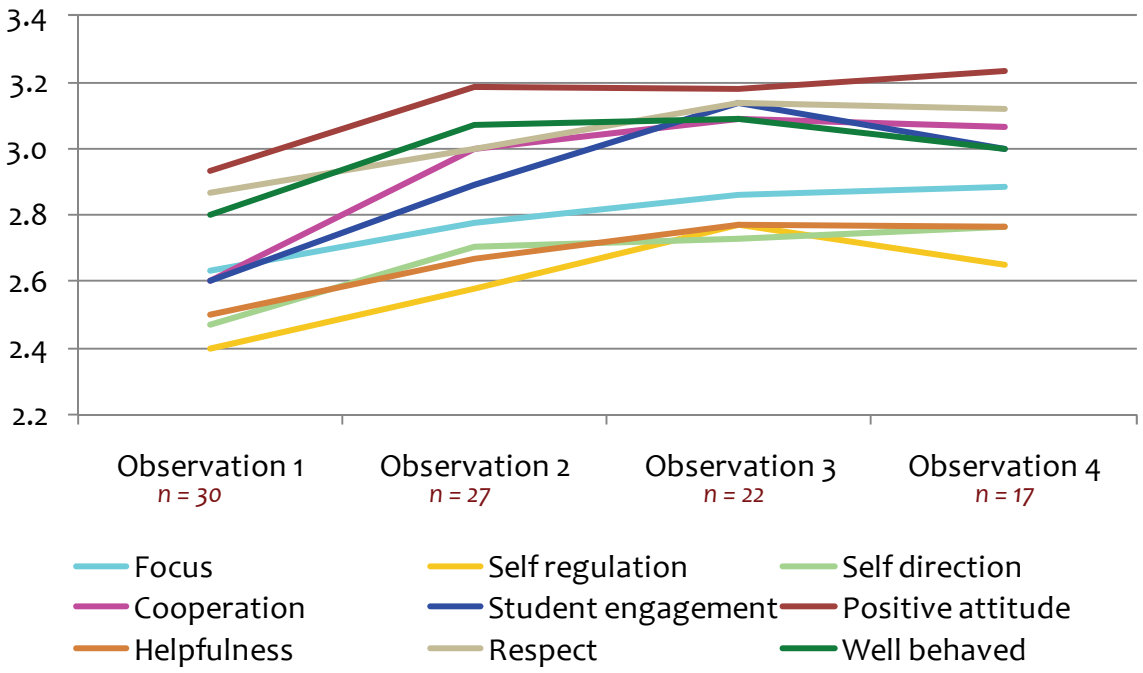
	Teacher				Activity					Observation			
Unit	Participants	Attended all PD sessions	Logged 2+ Activities	Logged 2+ Observations	AISD Science Curriculum	Access Nature Curriculum	SYH How-to Guide	Teacher developed	Other	After school	Department / Science	Science lab	Self-contained
District	45	31	36	27	74	125	92	140	65	1	60	17	65
Elementary Schools	29	24	23	18	54	80	26	80	23	1	35	5	52
Casis	6	6	5	4	11	21	5	28	14	0	3	1	9
Clayton	5	2	5	5	7	32	8	23	3	0	20	0	21
Dawson	6	4	5	4	21	4	3	9	3	1	4	0	8
Ridgetop	7	7	4	3	7	8	5	11	2	0	5	1	11
Rodriguez	5	5	4	2	8	15	5	9	1	0	3	3	3
Middle Schools	16	7	13	9	20	45	66	60	42	0	25	12	13
Bailey	4	2	3	2	3	0	10	6	2	0	0	4	6
Burnet	4	1	4	3	2	8	4	19	10	0	12	0	0
O'Henry	4	3	3	2	0	6	5	1	16	0	6	4	0
Small	4	1	3	2	15	31	47	34	14	0	7	4	7

PD attendance and use of on line reporting tools. Most, but not all participants attended all of the professional development sessions. Slightly more than half of the participants used both of the online tools. Among the activities reported, most teachers used Access Nature or devised their own curriculum. Though middle school teachers also favored the How-to Guide, elementary and middle schools showed a preference for a department format. Elementary schools also showed a preference for self-contained formats.

Did SYH activities cultivate students' social skills?

Teacher's observed changes in students' social skills. Teachers were asked to rate students' social skills in their observations. Overall, the average rating for each category increased at least slightly between the first and fourth observations. The greatest gain (0.5 points) was in cooperation, though student engagement also increased with a gain of 0.4. Although these may seem like small gains, the averages had limited ranges (1 to 5), making even small gains substantively valuable.

Interestingly, student cooperation was the highest rated social skill at the beginning of the year and remained well above other skills throughout. In contrast, self-regulation began as the lowest rated skill and remained the lowest throughout. Furthermore, this skill showed a decline between the third and fourth observations. Student engagement also showed a decline between the third and fourth observations. These may be areas that require attention during year 2.



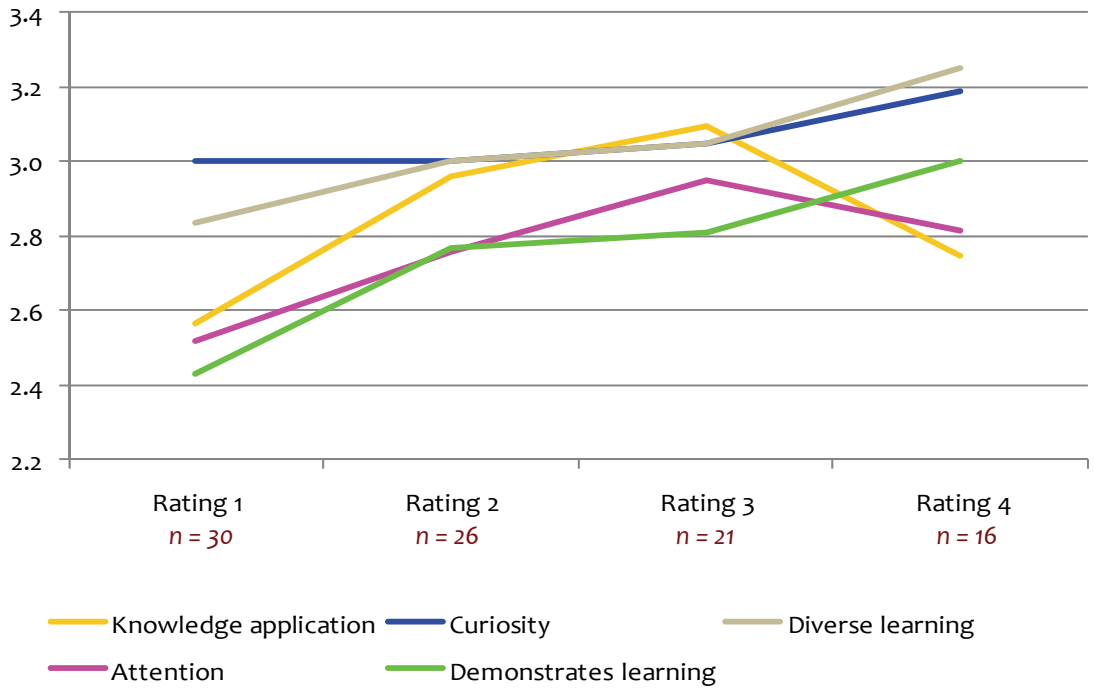
Student engagement—Actively engages in activity through participation and inquiry
Positive attitude—Demonstrates a positive attitude
Focus—Focuses attention on task at hand
Self-regulation—Demonstrates self-regulation
Self-direction—Demonstrates self-initiative and self-driven learning
Helpfulness—Provides assistance and/or collectively problem solves with others
Respect—Displays respect for the habitat and environment
Cooperation—Cooperates with teachers and students and is courteous
Well behaved—Experiences low stress and engages in fun, creative learning

Note: The numbers in the graph represent the number of teacher observations.

Did teachers observe changes in students' engagement?

Teacher's observed changes in students' engagement. Teachers also were asked to report on their observations of students' engagement. Overall gains were made in averages for each engagement category, although the trajectory was not linear for all. The greatest gain was 0.6 in the average for demonstrates learning. A 0.4 gain in the average for diverse learning was reported. As mentioned previously, although these may seem like small gains, the averages had limited ranges (1 to 5), making even small gains substantively valuable.

Two areas seemed to warrant attention: knowledge application and attention. Both of these measures of students' engagement decreased after the third observation. Indeed, knowledge application declined so much that it almost reached the rating made at time one.



Knowledge application—Connects concepts learned in classroom to outdoor observations

Curiosity—Displays curious exploration of habitat

Diverse learning—Taps into other learning styles not normally demonstrated in the classroom (kinesthetic, verbal)

Attention—Actively listens and follows directions

Demonstrates learning—Demonstrates increased knowledge of ecosystems, wildlife, plants, human / natural world relationships

Note: The numbers in the graph represent the number of teacher observations.

Lessons Learned

Students' academic outcomes. After the program was launched in the district, it became evident that SYH program curricula were best aligned with 7th grade Texas Essential Knowledge and Skills (TEKS) and yearly overview. Implementation did not change as a result of this realization, although finding a match for teachers at other grade levels was challenging. Teachers at 6th and 8th grade levels said they were reluctant to participate in SYH because they had little leeway to adjust state and district parameters for what and how they teach.

One of the major components of the evaluation plan was to review Texas Assessment of Knowledge and Skills (TAKS) outcomes for students whose science teachers participated in SYH. Science TAKS is administered in 5th and 8th grades. However, SYH was most aligned with 7th grade state and district curricula. This, combined with low participation rates, rendered an evaluation of 5th and 8th grade outcomes inappropriate.

DRE staff discussed how to best measure student outcomes for year 2 with NWF program staff. It will not be possible to use state assessments because a new assessment will be launched in year 2, and passing standards for this test will not be established until 2012--2013. Thus, the year 2 evaluation will include student academic outcomes using science course grades. This is a nebulous measure because course grades are highly subjective, with rubrics for grade assignment varying between and within schools. DRE and program staff will have to think carefully about how to match SYH classrooms to control classrooms to minimize variation between these groups. Ideally, the only substantial difference between the SYH classroom and its matched control will be the SYH program.

Measuring student attitudes. DRE staff facilitated the administration of pre- and post-program attitude surveys to students in all grades. Results for this survey are not reported here because they were not valid (i.e., the survey items did not appear to align with SYH curriculum). Survey items were borrowed from an evaluation conducted in Houston several years ago. The post–program items for year 2 will be revised to better capture AISD implementation and program successes.

Participant use of online tools. Teacher compliance with log requests will need closer monitoring in year 2. Teachers were asked to conduct at least 10 SYH activities during the school year, but only 27% of year 1 participants logged 10 activities. In addition, only 67% logged the minimum of two observations. These are the only data that inform program implementation at the classroom level. Although use of these on line tools was monitored during year 1, resources were not available to provide additional support to participants. The program facilitator for year 2 already has begun this work during the second year of the program.

Another problem encountered with the on line tools was that teachers did not always enter their correct employee identification number. This made it impossible to match their entry(ies) with the correct participant. This was corrected by adding a space for teacher name in the year 2 tools. In addition, the online tools for year 2 have been modified to improve measures of fidelity.

Changes in scope of work and summary of year 1 challenges. As mentioned earlier, this evaluation report focuses on implementation. This is a standard recommendation by DRE staff because the initial year of any program is likely to include challenges that program and evaluation staff did not anticipate. For SYH, these challenges included data validity (of PD records) and data collection (use of online tools). Another challenge was a low percentage of teachers participating fully, yielding too few classrooms for statistical analysis of TAKS results. Finally, SYH curriculum are likely not aligned with the 8th-grade TAKS science, making any analysis of this test invalid for informing programmatic success.

The year 2 scope of work has already been modified to account for these challenges. As mentioned earlier, DRE staff are considering how to improve student measures, including how to best provide a measure of academic performance and writing new items to measure changes in student knowledge, attitudes and beliefs related to program objectives. Also, the online tools have been modified to improve both administration and data collection. In addition, a follow-up survey for year 1 participants has been added to the year 2 work. Year 1 participants will be asked to participate in data collection for a second year.

Additional Information About this Report

About the Department of Research and Evaluation. DRE was established in 1972 to support program decision and strategic planning in the district. The department is housed in the Office of Accountability and is charged with evaluating federal, state, and locally funded programs in AISD. DRE staff integrate best and innovative evaluation practices with educational and institutional knowledge. DRE staff work with program staff throughout the district to design and conduct formative and summative program evaluations. DRE's methods for evaluating programs vary depending on the research question, program design, and reporting requirements. The evaluations report objectively about program implementation and outcomes, and serve to inform program staff, decision makers, and planners in the district. DRE reports can be accessed online.

About the Author. Ginger Gossman completed a Ph.D. in demography at the University of Texas at Austin in 2006. Her academic interests include maternal and child health, secondary education, infectious disease, and obesity research. She has presented her research findings at regional and national conferences and has been a member of the American Evaluation Association since 2007. Ginger joined the Research and Evaluation team in September 2008.

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District Strategic 5-year Plan. This report speaks to goals 1, 2, and 4. **Goal 1**: All students will perform at or above grade level (on standardized tests). Goal 2: Achievement gaps among all groups of students will be eliminated. Goal 4: All schools will meet or exceed state accountability standards, and the district will meet federal standards and exceed the state standards.