THE GREENING OF DETROIT --- TREE KEEPERS KIDS
2006-2007 EVALUATION REPORT
EXECUTIVE SUMMARY

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The primary finding from this evaluation was that the Tree Keepers Kids (TKK) program played a key role in helping all five schools under investigation to increasingly use the outdoors as a focal point for learning. The strongest outcomes were seen in the schools with a strong pre-existing relationship with The Greening of Detroit, active principal support, a strong staff champion, and a general readiness for outdoor learning. TKK helped to sustain and support a slow but steady learning curve as educators adopted the practice of using hands-on lessons in an outdoor classroom (OC) to teach traditional concepts and content. At each school, a few individuals and groups tended to use the OC more frequently, beyond when TKK staff delivered lessons. At all five schools, the vast majority of educators interviewed reported TKK to be an important asset with high value for students, educators, and the school community as a whole. Additional findings included:

- TKK program increased six important aspects of educator practice;
- TKK mentoring, links to curriculum, direct service, and resources held highest programmatic value;
- Educators reported increased student academic achievement and appreciation for nature;
- Mixed evidence for additional benefits of combining in-school, after-school, and summer academy delivery models;
- Schools with participatory principals and a cohesive, enthusiastic staff exhibited highest outcomes;
- Lack of whole-school involvement was the greatest challenge to the TKK program model; and
- Positive relationship with Detroit Public School system was critically important to success.

The goal of the evaluation was to investigate the impact and best practices of TKK as implemented in five participating schools. Each of these schools had been selected to receive all three delivery models of TKK (i.e. in-school, after-school, and summer academy). The primary intended users of the evaluation were The Greening staff.

> *"You can't learn science by staring into a book. When you experience science it ignites a flame. [In the OC] you can see the changes going on and the life growing on. [TKK and the OC] allowed me to complement what I was doing in the classroom."*
> *- TKK Educator*

The evaluation included data from the following sources:

- Site visits, educator, and student focus groups (43 educators, 45 students, Fall 2006);
- Participating and non-participating TKK educator interviews (14 educators, Spring 2007);
- Educator, principals, The Greening staff, and Detroit Public School system interviews (13 educators, Fall 2007)
- Monthly trackers
- Adult and student surveys (90 Educator, 591 student surveys collected Spring 2007)

More detailed presentation of the findings of this evaluation are presented below and further elaborated upon in an informal Appendices document delivered to The Greening staff.

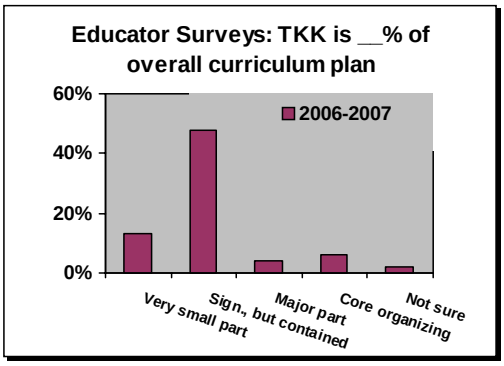
Findings and Discussion

TKK program increased six important aspects of educator practice

"Over time I have become more and more comfortable getting outside with the kids. Now I also do language arts, poetry, and drawing in the OC, not just science." – TKK Educator

Clear evidence was found for TKK impact on the following aspects of educator practice: use of the outdoor classroom, interest in the outdoors, educator engagement/growth, meeting curricular goals, and likelihood to implement TKK activities again. TKK inspired some educators at each school to use the outdoor classrooms for some portion of their curriculum. The average number of times taught outside without Greening staff varied by school, from about 4 times per year to about 15 times per year. Both interviews and surveys revealed that the TKK was not the primary component of most educators' class curricula (see Figure 1). More than 50% of respondents at each school reported that TKK was a 'very small part' or a 'significant, but contained' percent of the overall curriculum plan. However, nearly all educators who participated in TKK placed a very high value on the work they did with this program. The TKK program increased educators' personal interest in gardening and appreciation for the natural world. Many interviewees shared that TKK fueled their interest in being outside, which then fed their desire and commitment to use the OC with their own students. Survey analyses also indicated that educators who were more involved with TKK were more likely to report being professionally engaged by participating in TKK (R^2 = .27, $p < .01$), that TKK activities supported their existing curriculum (R^2 = .20, $p < .01$), and that they planned on implementing TKK activities again next year (R^2 = .28, $p < .01$).

Figure 1.



The OCs at most schools were mainly used in the realm of science by the one or two people who appeared to use the OC most consistently. Science coordinators and homeroom educators teaching science content were most likely to report high usage of the OC. They primarily used the OC for teaching science concepts. Yet, as educators became more comfortable using the OC, they started to use it in more diverse ways. Reading specialists, art teachers and homeroom teachers reported using the OC to teach other content areas and skills.

Not surprisingly, teachers not directly involved with TKK were less likely to use the OC or the lessons. Common characteristics of non-OC users (as reported by interviewees) included: little interest in gardening or the outdoors; lack of understanding of the value of hands-on learning; and lack of comfort/knowledge for taking students outside. This finding is probably not evidence of a direct outcome of TKK, but rather is potentially useful as an indicator of the characteristics that educators are likely to have or need to acquire if they are to become regular users of an outdoor classroom.

TKK mentoring, links to curriculum, and resources held highest programmatic value

> *"I think that the mentoring is extremely important. Especially if you're new to it you're going to struggle. Even if you're doing it right you're going to wonder if you're doing it right and you're going to need that extra push from people that have done it." - TKK Coordinator*

Above all else, the mentoring that TKK provided was widely heralded as the most valuable component of the TKK program. Nearly unanimously, educators and principals reported that educators needed to see skilled teachers teach hands-on activities and take the students outside before they were willing to try it themselves. The alignment of TKK with the school curriculum was another one of the most cited factors attributing to the success of the TKK program by educators surveyed. Additionally, many educators reported in interviews that TKK provided many needed resources – such as shovels, soil, trees, weather stations, and seeds – to the schools. Without these, they felt they would not have the tools necessary to use the OC.

Educators reported increased student academic achievement and appreciation for nature

> *"I noticed my students became better observers. They began to be more aware of subtle changes around them. The students would look forward to going outdoors into the garden to learn how to do scientific observations." - TKK Educator*

Regardless of how much the OC was used by educators, all interviewees reported that they believed that the time they did spend outdoors had academic and life-skill building value for students. Educators and principals reported that hands-on activities increased student comprehension of required curricular content. A few educators and principals noted that they thought hands-on activities in the OC had a direct correlation to improved MEAP test scores, and that hands-on learning increased the pace and depth of students' understanding of difficult scientific concepts. Survey analyses indicated some significant relationships between educator participation in TKK and educator reports of achievement on some specific science standards. For these variables, more interactions with TKK were associated with higher outcomes. Survey analysis also indicated that educators more involved with TKK reported higher levels of student engagement in learning ($R^2 = .14$, $p < .01$).

In addition to academic benefits, several interviewees noted that students in the OC learned valuable pro-social behaviors, and gained an increased respect and care for the natural world. Educators reported observing students working together to water plants, weed the garden, and plant trees. These tangible activities required teamwork and active participation, and taught students to care for the natural world. Educators claimed that as students cared for plants, they gained more self-respect and felt more valued in the school community

Mixed evidence for additional benefits of combining in-school, after-school, and summer academy delivery models

"The summer program was where I got to work the most with the kids so for me that was the richest part." - TKK Educator

Results from the student surveys indicated that participation in *any* of the three components was enough to significantly increase student outcomes. In other words, it was *not* necessary that a student participate in *all* three components of the TKK programming in order to see statistically higher survey outcomes. Yet, in interviews, educators and administrators reported additional benefits occurring from synergy between the three TKK components. For instance, the combination of in-school, after school, and summer academy activities raised the visibility of the outdoor classroom. Additionally, interviews indicated that the summer program relied more on educator initiative, and moved educators further along the path of independent use of the OC and related activities. The after school component was referenced less frequently in the interviews as having a strong impact on either educators or students.

Schools with participatory principals and a cohesive, enthusiastic staff exhibited highest outcomes

"Participating schools need administrators who support the program and who appreciate what they are doing. They have to be supportive, understanding, love the outdoors, and they need to encourage the teachers to work together as a team." – TKK Principal

When asked what criteria The Greening should use when selecting participating schools, principals, educators, DPS staff, and The Greening staff were nearly unanimous in their responses:

- Successful history with The Greening
- An actively supportive principal
- Staff cohesion
- Staff interest in the outdoors
- Willingness of staff to put in extra time and effort
- A super star coordinator.

These responses correlated strongly with the characteristics of the highest achieving TKK schools reported on surveys.

Lack of whole-school involvement was the greatest challenge to the TKK program model

"[Use of the OC] depends on which educators were in the school program and which ones were not. The TKK educators that had never had any experience [with The Greening] before are now more inclined to take their kids outside. The people that didn't get the program don't go out as much as the people that had the direct teaching. To me that was the key." - TKK Coordinator

Due to the fact that only a select number of teachers could take part in TKK at each school, coordinators found it necessary to select which educators would participate. The subsequent lack of whole school involvement caused some tension around the TKK program and the use of the OC itself. Educators who did not participate felt left out, and did not have the needed resources or lesson plans to use the OC.

Some of the challenges of running the TKK program were outside of the control of The Greening. For instance, two of the five TKK schools (Fairbanks and Higgins) closed in June 2007 despite the struggle of educators and principals to keep their school open. This complication taxed The Greening staff, as they attempted to maintain momentum for the OC and related TKK activities. An additional challenge mentioned by educators, principals, and DPS administrators was a lack of funding to support TKK, making it difficult to make the most of the OC. It is also important to note that while most educators were content with the rigor of the program, upper grade educators and DPS administrators felt that in order for TKK to gain a stronger foothold in upper grade levels, the program needed to increase the complexity of the lessons.

Positive relationship with Detroit Public School system was critically important to success

"I think [TKK] has a huge academic value… it helps children do better because they're seeing things in their environment. It also gives them a sense of responsibility for what's going on in their environment, and I think that helps them to be more motivated about learning." - DPS Administrator

The Greening has had a positive and evolving relationship with the Detroit Public School (DPS) system. Both parties recognized that this relationship was a key factor in The Greening gaining initial access to schools. When principals are aware that DPS supports the program, they are more willing to open their doors to The Greening staff and encourage educators to use the OC.

DPS interviewees reported that they promote The Greening to colleagues and school staff. Two DPS administrators were on The Greening's board of directors, and have worked on TKK curricula as well as on developing ongoing relationships between TKK staff and schools. Many educators and school administrators were not aware that DPS administrators strongly supported TKK or their use of the OC. These educators suggested that program outcomes would improve if DPS provided more concrete support for the TKK program, such as money for physical resources and to fund positions that support educators to use the OC, more encouragement to use the OC, and more professional development for educators.

Conclusions and Recommendations

The TKK program played a valuable role within the Detroit Public School system. The mentoring and resources they provided moved educators along a professional development path that began with a simple tree planting. Over the years, many educators who worked with The Greening developed a personal interest in gardening and/or started to recognize the value of hands-on outdoor education. These 'believers' overcame their own lack of knowledge in how to use the OC, and over the years used the OC more frequently and for more diverse content areas. They became advocates for using the OC to meet academic standards in their own school. This progression resulted in high use of the OC by a few key educators at each school.

A deep understanding of this progression of educator and school "readiness" could shape how The Greening staff determines which schools to work with, and how to develop their program to meet educators and schools where they are along this continuum.

Recommendations for the program include:

- Design an intentional process that takes a participating school along a progression of direct service and professional development opportunities;
- Expand program staff to reach more educators at each school, and expand program offerings to additional schools;
- Offer additional resources to participating schools;
- Continue to broaden and deepen the relationship with DPS administrators and school principals; and
- Build internal evaluation strategies for continued educator reflection, program refinement, and deepening the data pool.

"I integrate the OC a lot more than I used to because I have a safe place where the kids can go [where] they've been trained and they know what to do. I've probably gone from going out only with Greening (which would be once a month with only one class), to going out once every one or two weeks with every class."
– TKK Educator