Bringing Families into Out-of-School Time Learning

Practitioner Article

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Youth increasingly need a broad set of skills to succeed as adults in the 21st century. To address this need, many educators are adopting a broadened vision of learning, in which youth have access to an interconnected set of supports that complement and amplify school-based learning. These supports include out-of-school time (OST) programs and families' active engagement in young people's learning. In particular, through OST programs, youth can engage in new and different learning experiences that are often not available in schools. These learning experiences can include those that focus on academic skills, but also extend beyond to provide youth with active, applied, and collaborative learning opportunities that promote a variety of other skills that youth need to succeed, such as creativity, problem solving, team work, critical thinking, and digital literacy. Similarly, parents are instrumental as the primary bridge between multiple learning settings (Harris, Rosenberg, & Wallace, 2012). Family engagement in learning "helps to create consistency and reinforce learning and developmental messages across learning contexts (in school, in afterschool and summer programs, and at home)" (Deschenes & Malone, 2011, p. 9).

Reflecting the essential role of families and OST programs in supporting children's learning, a shift is occurring in the relationship between parents and OST programs, from a focus on engaging parents to increase their children's OST participation (*program-centered*) toward a focus on helping parents support their children's learning and development in and beyond OST settings (*learning-centered*). While limited in scope, the program-centered approach nevertheless creates a necessary structure upon which to build the learning-centered approach: youth must first participate in OST programs with the support and encouragement of their parents before programs and families are able to work together to support young people's learning. In addition, whereas OST programs used to take the lead in supporting young people's learning in their programming, they are increasingly working with families as essential partners to promote a shared responsibility for learning (Rosenberg, Lopez, & Westmoreland, 2009)**.**

In a learning-centered approach to family engagement, families play a central role in understanding and managing their children's learning experiences both in and outside of school. When OST programs offer opportunities for families to engage directly in their children's learning and development, parents, programs, and youth can all see benefits. In particular, families can see improvements in their communication with and understanding of their children (Kakli, Kreider, Little, Buck, & Coffey, 2006; Kreider & Raghupathy, 2010); increases in their communication with teachers and involvement in school activities, including parent–teacher

conferences (Birmingham, Pechman, Russell, & Mielke, 2005; Reisner, White, Russell, & Birmingham, 2004; Rigg & Medina, 2005; Warren, Brown, & Freudenberg, 1999; Warren, Hong, Leung-Rubin, & Sychitkokhong-Uy, 2009); and expanded opportunities to access and engage in learning experiences alongside their children. Programs benefit because parents can be valuable assets in bolstering the learning that the program promotes by extending the learning through related home- or community-based activities. Parents can also work with programs to help staff understand their children's learning needs, and can share information with staff about children's lives outside of the program, which may affect their ability to function within it. Ultimately, family engagement in OST can increase the chances that the youth involved will have successful experiences in these learning opportunities both within and beyond the OST program.

This paper provides an in-depth look at how one program has embraced a learning-centered approach to family engagement in OST. It also provides overviews of two other OST programs that have adopted a learning-centered approach to family engagement. The paper ends with suggestions for how OST programs can adopt learning-centered family engagement strategies in their own work.

Techbridge: Expanding Girls' Access to STEM Learning Opportunities

One promising example of an OST program that has adopted a learning-centered approach to engaging families is _Techbridge_ in Oakland, California.[1] By involving families in co-learning experiences, where families learn alongside their children, and inviting parents to co-create various program elements, Techbridge helps families feel deeply connected to what their children are learning. As described below, this involvement goes far beyond parents' facilitation of their children's participation in the program.

The Techbridge organization seeks to expand girls' academic and career options in science, technology, engineering, and math (STEM).[2] Techbridge serves approximately 400 girls in fifth through twelfth grade each year across 18 yearlong OST and summer programs.[3] As part of its mission to increase the number of women and underrepresented minorities in STEM careers, Techbridge targets schools where many female students do not have opportunities to engage in applied STEM learning. The girls Techbridge serves are often not actively encouraged to explore such content areas at home, where they have few opportunities to see female family or community members working in STEM careers.

To help expand girls' notions of what academic paths and career options are possible for them, Techbridge provides hands-on learning in STEM content areas so girls have the opportunity to become confident and competent in using technology and mastering science and engineering concepts. Co-taught by a Techbridge program coordinator and a teacher from the host school, the OST and summer programs allow girls to engage in learning opportunities where they design their own video games, program mobile apps, and create HTML coding (for such purposes as programming the movements of a robot). The project-based nature of the work allows girls to explore, ask questions, tinker, and develop perseverance as their projects sometimes succeed and sometimes fail. Girls also learn to work in teams and develop leadership skills that benefit their development across a variety of other academic and personal domains.

A crucial part of Techbridge's efforts to help girls see STEM as providing viable career options—rather than just the subject of fun extracurricular activities—is the use of female STEM professionals who serve as role models, working with Techbridge girls on projects throughout the year and interacting with them on field trips. These professionals, including engineers and computer scientists, show the girls what careers in STEM fields actually entail to help demystify those fields of study and inspire the girls to pursue such careers themselves. Often, role models are alumnae of Techbridge who come back to share what they have accomplished since leaving the program. The role models are often close in age to the current participants and have similar backgrounds and life experiences, which help the girls envision their own ability to pursue similar college majors and careers.

In an effort to expand the program's reach beyond the direct OST and summer programming it offers, Techbridge is collaborating with Girl Scout councils on Girls Go Techbridge. As part of this partnership, Techbridge provides Girl Scout staff and volunteers with packaged lesson plans based on its engineering and

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1. Information on the Techbridge program provided through telephone interview with Linda Kekelis, Executive Director, December 21, 2011 (with additional personal communication via telephone and email).
2. Techbridge was launched at Chabot Space & Science Center with a grant from the National Science Foundation in 1999. As of 2011, Techbridge has operated as a separate 501(c)(3) nonprofit.
3. In 2012, Techbridge received the Silicon Valley Education Foundation's STEM Innovation Award for achievement in science education.

science curriculum, related supplies, and training. These Girls Go Techbridge "programs-in-a-box" include materials for girls to engage in hands-on project work. To ensure that this strand of its work also includes a focus on the family's role in supporting girls' STEM pursuits, each box includes strategies for families so they can also understand and support the STEM learning projects provided by the boxed program. This partnership has allowed the program to extend its reach to 17 Girl Scout councils and over 6,000 girls across the country.

Engaging Families to Promote STEM-based Learning

Techbridge understands the critical role of the family in mediating girls' experiences with STEM-related learning opportunities, and the program takes active steps to educate families about the benefits of exposing their daughters to STEM fields of study and career options. A key component of Techbridge's work is helping families understand how they can extend the benefits of their daughters' participation in Techbridge's OST offerings by promoting and supporting their daughters' interests in STEM through conversations, activities, and visits to science museums and other community settings around the Bay Area. And as part of its professional development to prepare teachers to carry out the afterschool program, Techbridge provides training on family engagement to ensure that teachers understand the importance of involving the girls' families in supporting their STEM-related interests and activities. At trainings, teachers learn strategies for encouraging parents to attend family events, including making personal phone calls, engaging families in hands-on activities, and ensuring that programs are inclusive to those who are not English fluent.

Techbridge has developed a free, downloadable family science guide—*Science: It's a Family Affair*—to help families understand some of the concrete ways they can help foster their daughters' curiosity about and love of science and engineering. Available in English, Spanish, and Chinese, the guide includes ideas for how parents can create learning experiences out of everyday materials, vacations and family trips, and excursions into the community. The guide includes examples of science projects families can do with their children at home. The featured experiments involve everyday items that families are likely to have, such as paper, tape, rubber bands, and string, rather than sophisticated or expensive equipment. The document also includes "guiding questions" for parents to ask their child as they do the experiment to help extend the learning value of the task.

The current version of the science guide also provides families with a set of tips to help maximize their visits to science and technology museums. These tips include suggestions such as "Make the connection: Is your child studying earth science, physical science, or life science in school? Let your child be the expert and explain to you the most fascinating concept he or she learned in class and how it relates to the exhibit" (Anaya, Kekelis, & Wei, 2010, p.13). These tips help families actively engage with their child's museum experience rather than just supervising their child's journey through different exhibits.

Techbridge has a page on its website dedicated to family resources. This page also provides additional tips for how families can better support their daughters' interest in STEM activities and careers. Recognizing that girls often need specific, targeted encouragement to step out of their comfort zone and pursue fields of study that they have been socially conditioned to avoid, the tips include specific guidance for encouraging girls in STEM fields and breaking through the barriers that often prevent girls from seeing STEM pursuits as viable academic and career paths. The family resources section of the website also includes a variety of hands-on activities families can do with their daughters, with a set of tips about encouraging the girls to take the lead on the projects and suggestions for extending the learning value of the project beyond the task itself.

Soliciting Feedback from Families

Techbridge deliberately involves families in the development of programming materials and guides for using community-based science centers to ensure that its materials relate to families' needs and address questions they might have about STEM fields of study. In its development of the family science guide, for example, Techbridge sought input from parents and their feedback led to the inclusion of do-at-home activities in the final version of the guide. Techbridge also solicited input from families about what to include in the tips about visiting museums. This led to tips such as checking out the museum's website and planning a visit around the exhibits and shows of interest, following up on topics of interest by going online or visiting the public library, and other suggestions that families could relate to and find useful.

Techbridge seeks input from families in a variety of other ways to help improve its program offerings and home–program communication. At the end of each

programming year, Techbridge surveys parents to find out what changes parents would like to see in the year to come (e.g., more communication about field trips), and Techbridge shares information with parents about the projects on which the girls are working. Techbridge also holds focus groups with parents each year on such topics as what additional information parents want from the program, and what learning opportunities Techbridge should provide the girls through its programming. Parents have suggested more frequent showcases of girls' projects and additional activities for families to work on at home. The program also holds focus groups with the girls it serves to get their feedback on how well the program is addressing their needs and interests. This triangulation of data between the girls' and their parents' input has allowed Techbridge to better address parents' concerns. For example, some parents expressed that they did not want to limit their daughters' college and career options by focusing conversations on STEM fields, while the girls who were part of the program said they wanted *more* information about STEM career paths. Techbridge was able to take the girls' feedback to the parents and the role models to help them understand what the girls themselves wanted and offer ways that parents could support their daughters' quest for academic and career guidance.

Evaluation of the Techbridge Program

Each year, Techbridge conducts an evaluation of its activities to assess the program's progress against its goals. Evaluation results from the 2012–2013 school year demonstrate the success of Techbridge afterschool programs. In particular, of the girls who participated:

- 94% believed that engineering is a good career for women
- 94% knew more about different kinds of jobs
- 94% knew more about how things work (like simple machines)
- 94% said that because of role models and field trips, they were more interested in working in technology, science, or engineering
- 92% worked hard to understand difficult things;
- 92% felt more confident using technology
- 80% planned to take advanced math and/or science classes (Ancheta, 2013)

Techbridge has also analyzed results of a survey assessing the usefulness of the family science guide. Evaluation results indicated the guide was helpful for parents, with nearly all of the parent respondents rating the guide as "excellent" or "good." In addition, the majority of the parent respondents found the guide helpful in encouraging them to explore science careers with their daughters and in providing ways for them to encourage their daughters in science and engineering overall.

Other OST Examples of Learning-Centered Family Engagement

There are a number of other OST programs that seek to engage families in meaningful, learning-oriented ways. Two promising examples are described below. While these two programs do not include the full array of integrated family engagement activities that Techbridge offers, they have adopted family engagement strategies that are much more *learning-centered* than *program-centered,* and help illustrate additional ways in which OST programs can meaningfully engage families.

MAKESHOP: Helping Families Tinker Together to Learn Together

The MAKESHOP studio at the Children's Museum of Pittsburgh provides children and their families with opportunities to co-engage in creative hands-on "tinkering" that promotes cognitive, physical, and emotional engagement with tangible materials.[4] Directed at children between the ages of 8 and 12, the studio's workshop-like space invites children and families to test out their knowledge about how objects work, how they are created, and how they can be used. MAKESHOP teaching artists approach each visiting family with the question, *what do you want to make today?* Children and their families create a variety of products with the materials at hand, such as electronic circuit boards, knitted garments, and lawn tools. In developing the studio, the program's founders sought to offer opportunities for parents and children to work side by side and have conversations about what they were creating, rather than parents adopting a detached supervisory role while their children worked independently on projects.

MAKESHOP staff members believe that providing children with opportunities to engage in open-ended creative processes helps enhance children's ability to problem-solve, think creatively and flexibly about how to accomplish a goal, work collaboratively with family members toward the creation of an end product, and engage with both familiar and unfamiliar objects in different ways to create something of value. These skills enable children to be nimble and adaptive in their use of knowledge, which can help prepare them for a rapidly evolving workplace where innovative thinking and adaptability are vital. MAKESHOP's founders also discovered that this co-learning process often helped reignite a love of learning among adult family members, making them more likely to continue fostering similar learning experiences outside of the museum and actively engaging with their children in learning.

Tech Goes Home: Creating Technologically-Fluent Families

Tech Goes Home (TGH) is a Boston-based OST program that helps youth and families understand how they can use technology to enhance learning and development, and engage with one another as co-learners as they navigate new technology.[5] TGH's school-based OST program provides middle school students and families within the Boston Public Schools with 15 hours of computer-based training across multiple sessions, guided by a teacher-trainer from the partner school. TGH deliberately targets families who have the least access to technology as well as the least amount of interaction with the schools, as the program seeks to boost not only technological fluency, but families' engagement with the school overall.

TGH created a co-learning environment that equally engages youth and their families; the majority of the programming time is spent helping youth and families work together on computer-based projects that require them to collaborate with each other. These learning experiences open up conversations between parents and children about topics they might not have previously discussed, such as life goals or finances. One popular project activity, for example, involves using the Internet to plan a set of weekend activities for the entire family (taking into account each family member's age, interests, etc.) with specific criteria, such as not spending any money on excursions.

Program trainers also recognize the importance of helping parents understand what their children know about technology and how they use it. This helps parents become more informed about how to help guide their children's technology use and ensure that children are using the Internet safely and engaging with computer programs and apps that have actual learning value. Parents are given resources such as the Common Sense Media website to help navigate the wide array of technology and digital media options available to their children. An important component of TGH's guidance in this area is the creation of a co-constructed technology use contract on which parents and children agree. The contract is designed, in part, to help foster parents' continued engagement with their children's technology use after the TGH training sessions end and thus retain and build on the technological fluency they developed during their time in the program. At the end of the 15-hour training series, youth and their families receive a reduced-price computer and discounted broadband so they can continue to engage in computer-based learning activities at home.

Implications for Practice

OST programs that adopt a learning-centered approach to family engagement recognize the critical role families play in helping to shape their children's learning experiences. These programs also understand the need for families to actively engage with those learning opportunities, rather than just sit on the sidelines and merely oversee their children's participation. OST programs that take a learning-centered approach to family engagement put families at the front and center of the programming they provide for youth. In this approach, the inclusion of family engagement is a *necessary*, rather than *nice*, component of their programming goals.

This learning-centered approach is one that all OST programs can incorporate, in various ways and to different degrees, depending on their goals and capacity. The strategies outlined above provide a small sample of the ways that programs can think about family engagement as an integral part of young people's learning experiences and how they can incorporate promising strategies into their own programs. The following set of practices can help OST programs adopt a more learning-centered approach to family engagement:

- View families as partners who actively facilitate young people's learning, rather than just people who enable young people's participation in OST programs.

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5. Information on Tech Goes Home provided through telephone interview with Deb Socia, Executive Director, and Daniel Noyes, Senior Program Director, February 2, 2012.

- Develop family-oriented guides, learning exercises, or other concrete ways for families to engage with OST content and extend the learning beyond the hours of the program. When developing ways for youth and their families to extend OST learning, be sure that the suggested activities are realistic for families to do, given such constraints as limited time and money.

- Provide opportunities for parents to attend OST program sessions so they can directly participate in their children's learning. To accommodate parents' work schedules, consider holding special co-learning sessions during evenings or on weekends. While events that showcase young people's work provide opportunities for parents to see what their children have accomplished, it can be even more meaningful for families to engage in learning activities alongside their children.

- Share information with parents about their children's learning, including specific areas of strength or talent as well as areas of challenge that youth are working through. Invite parents to share their own information about their children so program staff can improve their understanding of the youth they serve.

- Solicit feedback from families at multiple points during the program. At the beginning of a program, ask parents what they hope their children will learn and what they are most excited about regarding their children's participation in the program. Once the program has been going for a while, use surveys, focus groups, or other methods to find out from parents how well the program is meeting their – or their children's – expectations. Ask families for ideas about how to improve the way program staff engages with them.

The goal of a learning-centered approach to family engagement is to help OST programs better serve youth by inviting parents to participate in and extend the learning offered through OST programming. When programs see family engagement as a key component of young people's learning, family engagement becomes integrated into the core of what OST programs do, benefiting youth, their families, and the programs themselves.

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