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## Collaborating to Create a Code Camp

by Carli Spina<sup>1</sup>

When the [Spence School](#) received a generous alumna donation aimed at improving the school's engineering and design programming, they immediately realized that they wanted to use this money not only to make a difference to the girls at their school, but also to others in their community. Once this decision was made, they quickly identified the [Harlem Children's Zone \(HCZ\)](#) as a potential partner because of its nationally recognized work in nearby Harlem, where they have two charter schools, a pre-K, college preparatory programs, and a number of other educational programs for children in the community. After conversations with HCZ's CEO, it was decided that the partnership would be between the Spence School and Promise Academy I, one of HCZ's two Promise Academy K-12 Charter Schools, and would focus on introducing young girls to coding.

Once this initial decision had been made, teams from the two schools met for two "think tanks" to brainstorm the specifics of the program. They ultimately decided to focus on creating a "Code Camp" for 20 second-grade girls. The camp took place on four consecutive weekends and used the Scratch visual programming language<sup>2</sup> to teach girls computer programming concepts and the basics of game creation. Code Camp culminated in an event where the students displayed their finished projects for parents and guests. The success of the program was ultimately the result of the way the two institutions approached their partnership and structured this collaborative activity.

### DEFINING THE PARTNERSHIP

The Spence School has a long history of partnering with local organizations to offer service opportunities for their students through their "[Purpose in Community](#)" service program, but past partnerships focused on services that Spence students could provide to other organizations. In this case, that model wasn't right for the partnership with Promise Academy I. Instead, both schools committed to complete parity from the beginning.

Though the funding came from the donation received by the Spence School, the two institutions aimed to be equals in every other respect. Two teachers from each school taught at the Code Camp, two sessions of the four-week camp were held at each school, and an equal number of students participated from each school. This equality of contribution extended to all of the decisions made as the program developed as well. Both schools played a role in the initial development of the program and in each decision made along the way. By collaborating so closely, the schools were able to create a program that served each of their student populations equally well and took advantage of what each institution had to offer. This close and equal collaboration naturally led to the development of strong program goals.

### SETTING CLEAR GOALS

While one might guess that a program called Code Camp would focus exclusively on teaching students about computer programming, the goals of

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<sup>1</sup>The event design team is grateful for Carli Spina's work in creating this case example write-up, in addition to the insight provided by Danielle Passno of The Spence School. In conjunction with event participants, we look forward to developing this case example further through the recommendations and reflection generated from event discussions.

<sup>2</sup>Scratch is a visual programming language that allows users to develop simple computer programs by dragging and dropping elements that fit together like puzzle pieces. It was developed by the [Lifelong Kindergarten Group](#) at the [MIT Media Lab](#).

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the program in this case were carefully crafted to go beyond this. Although the main purpose was to introduce this group of second-grade girls to computer programming concepts, the program goals were not worded in terms of defined final products for each student (for example, submission of a completed game). Instead, the goal was broadly construed so that students could work at their own pace and define their own goals and successes.

In addition, an important secondary goal was to foster social skills amongst participants. An important part of the reason this program was aimed at second graders was that the teachers felt that this is an ideal age to form relationships. As Danielle Passno, Director of Outreach and Public Purpose and a Math teacher at Spence School, stated, this felt like a “magic age” where students are old enough to form strong friendships with new people but still at an age where they are unlikely to exclude their peers. During each session of Code Camp, approximately a quarter of the time, generally at the start, was devoted to team building activities designed to help students forge relationships and work well together. Beyond this, students also demonstrated their final projects for friends and families during the last session. Everyone who saw the projects was encouraged to give both positive feedback and constructive criticism, which helped the students to learn how to respond to critical comments. These dual goals allowed the program to contribute to both the students’ technical and social skills as well as strengthening the connection of the two schools.

### **GROWTH FOR TEACHERS AS WELL AS STUDENTS**

Through its development and implementation, Code Camp offered opportunities for both students and teachers to learn and grow. None of the four teachers selected to teach at the Code Camp had prior experience with Scratch or computer programming, so an integral part of the program was professional development leading to the start of

the camp. Teachers from the Spence School with computer programming experience led professional development workshops that continued during the Code Camp, and all four of the Code Camp teachers took part in additional learning opportunities, including webinars and Code.org tutorials. This professional development not only allowed the teachers to expand their skills but also gave the teachers from the two organizations an opportunity to work together in advance of the Code Camp.

### **SUPPORTING ALL LEARNERS**

In addition to setting goals with enough flexibility to work for all of the students, the program was designed to accommodate differing skill and experience levels. One concern going into the program was that the exposure all Spence School students had to Scratch through the school’s STEAM Lab would set them apart from their counterparts from Promise Academy I. However, in reality, students ended up with differing levels of comfort and facility that was not related to prior exposure to Scratch. Since the program was designed to facilitate interactions between students as well as with teaching staff, students could collaborate and help one another and no one ended up feeling left behind. In addition, students were offered the option to design final projects that were as simple or as complicated as they wished so that the students could achieve their own goals without undue pressure to reach a specific end point.

### **CHALLENGES**

Although the program and the collaboration were ultimately successful, they were not without some minor challenges along the way. Perhaps the most significant challenge came from the staffing structure of the schools. While Spence School has staff devoted specifically to fostering projects as part of the school’s “Purpose in Community” service program, Promise Academy I does not have staff specifically devoted to these sorts of partnerships, which made it more difficult for their administrators

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to find time for the logistical work that went into the project. Moreover, all of the teachers from both schools had to find ways to fit this program into their existing teaching schedules. To combat this, Spence School staff went to Promise Academy I for most meetings and much of the professional development programming happened in the evenings, but it was often difficult to find times that would work for all of the collaborators. The Code Camp teachers were also offered a stipend to compensate them for their extra work on this project. Generally, it was more difficult to find staff who were able to take ownership of the partnership at Promise Academy I due to these different staff structures, but the project team found ways to maintain an equality of contribution despite this.

The other major challenge for the program was the compatibility of the schools' differing technology. For the first two weeks, students met at The Spence School, which uses Mac computers for student projects. This meant that students initially learned how to use the program on a laptop. When they then moved to Promise Academy I for the

final two weeks of the program, they had to relearn how to use Scratch on tablets as Promise Academy I primarily uses tablets for student work. For the final Code Camp session, Spence brought laptops to Promise Academy I so students would be able to use the computers.

One final logistical challenge arose from the need for Scratch accounts for the Code Camp activities. Due to the age of the students participating in the program, it was impossible to have each student create a personal account, as many did not have email addresses and all were deemed too young to have such an account. Ultimately, however, these challenges did not hold the project back. The program was successfully developed and run over a period between October 2014 and April 2015 and proved to be a success. Not only did all but one student complete the entire program, but all have expressed interest in continuing on to further programming in the future. This unique collaboration proved to be fruitful for the students and teachers of both institutions.

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## Discussion Questions:

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1. This collaboration between a private school and a charter school showed that institutions with different structures can find ways to work together. What sorts of institutions could you envision collaborating with in your community?
2. How would you set goals for your collaboration that are flexible and meaningful?
3. Given that the program is limited to ten participants from each institution, it may not always be possible to include all interested students. How would you select students to participate in programming at your institution?
4. One area where Code Camp hopes to do more work in the future is assessment. How should assessments be structured to determine whether this program is successful? What would you define as “success” for this type of partnership?
5. How could you see scaling this program to reach more participants?

### OUTCOMES

After successfully completing the first Code Camp in April of 2015, Spence School and HCZ are now planning to expand the program. Starting in November of this year, they will offer another camp for twenty new students, this time with second grade students from Spence School and Promise Academy II. Then, in February or March of 2016 there will be another Code Camp session for new second graders from Promise Academy I. Finally, in April of 2016 they plan to run an advanced Code Camp session for the students who participated in the first Code Camp, who will be third graders. If all of these sessions prove to be successful, they are considering running a five-day Code Camp summer session in July of 2016.

### ADDITIONAL RESOURCES

These sources offer more background information about the Code Camp program, the institutions that partnered to create it, and the Scratch programming language.

Code Camp Documentary: <http://bcove.me/f4kxadei>

Harlem Children’s Zone: <http://hcz.org/>

Promise Academy Charter Schools: <http://www.hczpromise.org/>

Scratch: <https://scratch.mit.edu/>

ScratchEd: <http://scratched.gse.harvard.edu/>

Spence School: <http://www.spenceschool.org/>

Spence School’s “Purpose In Community” service program: <http://www.spenceschool.org/Page/Program/Outreach-Public-Purpose/Partnerships>