Interning with Girlstart: An Anthropology Student in STEM

Casey Phillips

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megabytesize@gmail.com
For the longest time, I have been interested in education and how kids learn. I’ve obviously been through school and took part in after school activities, joined clubs and the like, but I never had to the chance to be a part of something like Girlstart, an educational after school program that implements the STEM (Science Technology Engineering Mathematics) curriculum by way of fun, hands-on activities for girls. I became interested in After School programs when I first realized that the education system is lacking in several areas, mainly the fact that children have to learn for a test and have no real room to expand their minds and have a curriculum that accommodates several learning styles. I wondered if after school programs were something to fill the needs of students that their traditional education, unfortunately, was unable to give them. At any rate, I continued this interest in pursuit of an internship to allow me to look at the role of after-school programs and if the approach was helpful. Honestly, I searched online to find an academic-based after school program (not to be confused by a tutoring or mentoring program) in Austin and I happened onto Girlstart.

**What is Girlstart?**

Girlstart is a non-profit organization that implements the STEM curriculum through fun, hands-on activities for girls in grades three up to grade 8. Their mission is to encourage young girls to participate in STEM, as it is important for school testing and other educational aspects, and to help build confidence in the girls that they can grow up to work in a STEM career. According to
the Girlstart website: women make up about 49% of college graduates, but only about 24% of them make up the STEM career field. The Girlstart program aims to raise the number of women and girls interested in Science and Technology careers, and they do this by having various programs that help spread the word: the After School clubs in the Fall and Spring, Public STEM activities throughout the year and week-long summer camps that are held from June to August (each with a different STEM career as their theme). Most of the programs are free, except for summer camps. However, they host a fundraiser for a summer camp scholarship called “Send a Girl to Camp” in order to allow girls who are financially restricted and opportunity to attend one of the summer camp series (it’s $300 per camp, each camp is one work week long and the money goes directly into the organization for things like supplies and other needs).

**Overview of Girlstart**

In this section, I will describe how the various programs work.

**After School Clubs:** The after school program is one of the largest forms of outreach for the organization. The goal is to acquire 10 new schools per year to participate in the program and so far Girlstart currently services 21 schools in the Austin Metro area and roughly 500 girls are enrolled in the program as of fall 2011. The Girlstart after school clubs are administered for one hour after school according to the scheduling of when the schools let out, which vary from campus to campus. The clubs are led by STEM CREW leaders, which are generally college students at both the University of Texas (mostly associated with the U-TEACH program) and Texas State University. The STEM Crew is generally where individuals who are interning with the Girlstart organization work. The After School clubs meet once a week on a day that best

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1 STEM: Science Technology Engineering and Mathematics. CREW: Creative Resourceful Empowered Women.
corresponds to scheduling with the campus coordinator, and they meet throughout the entire school year. Participants of the After School program range from 3rd grade up to 8th grade, and are dependent upon the school. The job of this program is to administer the STEM curriculum to the girls in fun, hands on way that helps them to see how science and technology is used in the real world and it also helps them relate the material back to their science courses. This program is free to the girls, but does require them to sign up each semester for attendance purposes.

**Girlstart Summer Camps:** The Girlstart summer camp series is for girls that are in or entering 4th to 8th grade. Summer camps are held from June to August and are a week long during the hours of 9:00am to about 5:00pm. The camps are centered on a specific theme that differs with the week or age-group attending the camp. For example: there’s a 4th-5th Grade camp with the theme of CSI Girls. Summer camp is a unique program for Girlstart because it is the only one that the participants must pay to attend, which is $300 per camp. However, Girlstart itself allows for a scholarship to be given to girls who have financial needs. The scholarship is run by a campaign called “Send a Girl to Camp!” The camps are held at the Girlstart headquarters in Austin, TX in one of the five open activity rooms (two of them are computer labs).

**Public STEM Events:** Public STEM events consist of free programs open to the public either at Girlstart headquarters in Austin or various schools or other event centers. These events are free to the public and are another major outreach program for Girlstart’s organization. Public STEM events consist of hands on activities that are quick to teach and easy to relate to a large number of people coming by the Girlstart booth. Girlstart does not often turn down these opportunities, as they are truly a great way to spread the word about their organization while also providing a hands on STEM activity based on the theme of the event.
**Girls in STEM Conference:** The Girls in STEM conference is held every year during the last Saturday of March at the University of Texas campus in Austin. Girls in STEM is one of the largest Girlstart events and is free to girls who register at their after school club (smaller schools can invite girls who are not in a Girlstart After School Club to encourage them to become involved). Girls range from 3rd grade to 8th grade and attend activities based on their age level (there are three activities after the opening ceremony that they attend throughout the day). Girls in STEM is also a great opportunity to volunteer with Girlstart. The 2012 Girls in STEM Conference had over 500 girls in attendance and over 100 volunteers that came to help the event run smoothly.

**The Girlstart Office**

The Girlstart office (headquarters) is located in North Austin. People who work there include Katelyn Wamstead, the program director and summer camp director, Tamara Hudgins the Executive director of Girlstart, Ange Atkinson the After School Coordinator, Sharlym Aquino the Program Coordinator, Lindsey Rhodes Purdy the Development coordinator and Julie Shannan the Deputy Director. These ladies together help keep the Organization afloat, along with other out of office coordinators and the board of directors. During my internship, I worked directly under Katelyn for Public STEM and duties at the office and I also worked under Ange for my After School program.

The atmosphere of the office is very fun and inviting. Work attire is usually jeans and a nice shirt or jeans and a Girlstart t-shirt and close-toed shoes are preferred but not required. The people are either working on preparing for an upcoming program, imputing data from surveys, arranging or attending meetings with the board of directors and benefactors. Interns are often
members of STEM crew, which are the people who teach at the After School club, are found prepping for their club in the mornings for the club meeting in the afternoon. Everyone is allowed to share opinions and ideas on how to better their clubs and programs in order to make them run more smoothly, efficiently and be even more fun and rewarding. On many occasions, lunch is provided for those who are working and there are always water and smoothies available to everyone in the office.

**My Duties at Girlstart**

My duties at Girlstart varied in the office and at the after school club for which I was an assistant instructor. My office hours consisted of inputting data from surveys that were administered at either after school clubs or Public STEM events. Entering this data is very important because it shows our progress, what we need to improve on and it shows our benefactors how we are doing since they are unable to attend our clubs and all of our events. I’ve also administered background checks on our volunteers for the Girls in STEM conference to make sure that they were okay to work with our girls. One can administer background checks through Texas Department of Public Safety’s website for a fee. Girlstart put the fee to the DPS in the budget to ensure background checks could be administered well before Girls in STEM. One of my more common duties was preparing for Public STEM programs that were upcoming for that particular week. This duty ranged from putting together individual kits for the volunteers to hand out to the kids or uploading activity materials. By doing these tasks, I helped keep things organized for the events and was responsible for packing the materials and making them available for the volunteers to pick up.
My duties for After School club as an assistant instructor were to help my partner with anything she needed before or during club. I was responsible for making sure our bin was packed for club, which means, literally, our club’s clear plastic bin had all of the materials necessary for the day’s lesson, our attendance sheet was in the bin as well as the lesson plan and the career posters that related our activity to real life STEM careers for the girls to look at. I also made sure, at times, that there were snacks packed for the girls and I often brought them to club in my car. Once we were at club, I helped by passing out materials, writing terms on the board, and assisting girls when they asked for help and my partner was working with another group. Whenever someone is the only STEM Crew member at club, they administer the lesson, pack their own bins and make sure all the materials are present and that their girls understand the lesson. In the case of my club, my partner and I also tweaked the lesson plan to fit our club because of the time limit and the personality of the girls as a group; we customized our lessons to our club so that they could learn it their own way. My experience with the After School club has been probably one of the most rewarding experiences of my entire life. Even my first day of learning about my club and how the program works as a whole, I knew I was going to enjoy it. I had the opportunity to work with a great STEM crew leader who had passion and great care for our club, and I was working with a group of girls at a Magnet School in Georgetown ISD. Every Thursday, the girls were always waiting outside the classroom door, very excited to start club. I could tell by their behavior during the activities that they enjoyed the opportunity to form their own ideas on how the experiment worked and when something didn’t work, they took the time to either redesign the experiment or simply write down what they would have done differently to make the experiment a success. They often asked us many questions regarding the lesson and if we ran out of time they wrote their questions down for us in their engineering journals, which
showed they were curious to learn more about how different aspects of the activity that we did that day.

One of the other roles I took on at Girlstart was being a STEM Crew member at Public STEM events during the month of March. This happened mainly because I wanted to become even more involved with the organization. My duties at Public STEM events was to make sure that I had materials, made contact with the other volunteers to ensure that there were enough people at our Girlstart booth and to set up and tear down the booth. I also helped administer the short lesson that accompanied the booth, which corresponded to the theme of the event that the school had planned. For example: one science night was dedicated to the science of light and the Girlstart activity was an experiment that explained what happens to light and color the deeper one goes into the ocean. Another responsibility of going to Public STEM events is to spread the word about Girlstart, encouraging girls to join club if they haven’t already or to attend Summer Camps, telling people what our mission is, and promoting the Girlstart Organization.

The remainder of this section describes a few of my favorite activities as an intern: the planetarium called “Starlab” and some highlights with my after school club.

**Starlab:** Starlab is a portable planetarium that Girlstart takes to various events that it can fit in (it’s huge when finally set up) and also if an astronomy lesson is needed at the event. This activity takes a minimum of three people to run it, partially because of its sheer size and also because one has to use crowd control to get in and out of it. The day that I was a part of this activity, we arrived to the school holding the event at about 10:00 am and started to unload the activity, which consists of three main components: the planetarium itself, which is a tarp-like material that turns into a dome the size of a small living room when inflated, the high-powered
fan that blows up the planetarium and the projector that displays the constellations on the walls of the planetarium. The first step is to get everything out and spread out the dome to where it blows up easily and won’t catch on anything, after that we attached the fan and let it inflate.

After the planetarium is fully inflated, we placed the projector near the small opening used for the fan and cords and test it to make sure that the stars show up on the walls and are rotating correctly in view for the participants. The entrance to the Starlab is a little tricky, because one has to crawl through a tube to get to the main dome; once in there it’s a lot less compact (at least 20 people can fit comfortably). There are three rules to being inside the Starlab: 1.) Do not touch it, because it can deflate. 2.) Be as quiet as possible, because the Starlab dome echoes and too many voices at once covers the person giving the presentation and 3.) No shoes, food or drink because of the sensitivity of the material. I was in charge of giving this information to the people who came to see our activity. This was important, because I have a big fear of public speaking and the exercise helped reduce the fear and made me comfortable with talking to a group of people.

The activity involved with Starlab was teaching the children, and even some parents, where the constellations were in the sky and what some of the legends were behind the stars. For example, the story of Orion goes that he was a mortal hero that fell in love with the Moon goddess, Diana. Orion and Dianna would go off on hunting expeditions together, and Diana would not always be available to pull the moon chariot across the sky, which angered her brother, the Sun god Apollo. In order to separate the two lovers, Apollo tricked Orion into swimming a great distance out into the ocean in full armor (which Orion did successfully) and then tricked Diana into shooting the small speck she saw in the ocean, which was Orion. After Diana realized what she had done, she showed her love for Orion by casting him into the night sky, so that he would always be with her.
while she did her duty of pulling the moon chariot every night. Hearing the Greek stories kept the children intrigued and the experience of the stars floating around them sparked their curiosity to hear more stories and learn the names of more constellations. It was a joy to see the kids wanting to learn more about the stars and describing what they had learned enthusiastically to their parents as they left the activity. We heard a lot of them saying that Girlstart looked like a pretty cool organization, and I couldn’t agree more.

**After School Lessons:** Our theme this semester for our lessons was Earth science. A lot of our activities were about land formations and eco-science careers, and they were messy lessons with a lot of water, dirt, and sand. I particularly liked the lesson when the girls were learning about alternative fuels and making their own bio-fuels with yeast, bran, corn syrup and water that would blow up a balloon on the top of a plastic bottle. They made their predictions and their own combinations of the ingredients to see which fuel worked the best. The girls discussed their plans as a group and each one of them decided on a task; they often worked together really well and rarely argued over duties. If we were ever late, they would come up and ask where we had been because they had been waiting all day long for Girlstart so they could learn a new activity.

Another rewarding bit of information that we learned is that our activities throughout the year had helped them on the science portion of the STAR test and to understand concepts they were taught in class. On our very last day, we did our parent showcase, which is the time when the girls show their parents some of the activities that we did over the semester. They divided into groups and set up their favorite activities, wrote on one sheet of paper stating what they learned when we did the experiment in club; while on another sheet of paper they wrote their own instructions on how to do the activity. They were so excited to show their parents what they had learned and eagerly led them around the room to show them all of the activities.
However, the day was not without its emotions. My partner and I quickly realized that we would miss our girls very much once we cleaned up and walked out the door that day as we were dedicated to giving them the best lessons that we could, making sure they had the most fun possible while in the Girlstart program. The girls, in return, also felt sad that they wouldn’t see us anymore, especially those who were in fifth grade, as we do not have a sixth grade club option at that school. They wrote us thank you cards for spending time with them and bringing them fun science activities to do after school.

**Anthropology and Girlstart**

Looking at this through an Anthropological perspective, I wanted to see how the girls’ attitudes changed throughout the program toward their education and to see if programs like Girlstart filled the extra something needed in the school system. Basically, I turned this into a needs assessment for academic-based after school programs and if they are doing their job.

According to the U.S. Department of Justice, in 1999 most juvenile crime happens between 3:00pm and 7:00pm, which is the time right after school (Cosden 2012: 220). Cosden also argues that a structured after school activity held higher educational outcomes than those who are not in a structured after school activity (Cosden 2004: 220). I cannot speak for children who did not participate in Girlstart, but for the group that did participate in our After School Club, I observed that their attitude toward learning was very eager and they often asked many questions of my co-instructor and me about components of the activities and even things they were going over in their classes.

Attendance is another indicator of whether or not an After School Program is doing well or not; if no one is showing up, then the program isn’t accomplishing its mission. In the Magnet
school’s club where I observed and taught, our club had a constant 18 – 21 girls show up weekly. The club at the beginning of the semester had 24 girls, but due to 2 girls moving schools and a couple of others having prior engagements, our total girls enrolled was 21 girls. As stated earlier, the girls that came to club every week were very eager for the week’s activity and the majority of our club were constantly present during the semester.

The next order of importance is whether or not the program is effective in developing the girls’ ideas toward science or higher education. At Girlstart, there is a focus on STEM education but it is more than that because the programs also encourage girls’ sense of discovery and aim to help build problem solving skills and encourage them to set and follow goals. Often times in a traditional classroom, there are scientific terms and mathematical concepts that are introduced to children, but more often than not things like thinking through the scientific method, problem solving on their own and number sense (Bers 59). According to the Kolb/McCarthy Learning Cycle, female students are more responsive to instructors that take on the motivator or coach role, whereas male students are more apt to respond to “experts” (Montgomery and Groat 1998: 4). Girlstart STEM CREW members are encouraged to take on the motivational role, as they are not experts in any one scientific field. One of the best ways to encourage and motivate the girls in learning science is to use fun, hands-on activities that allow her to see and touch the experiment, design her own experiment and make her own predictions of the outcome. In order to best implement these ideas, the Girlstart STEM Crew takes the time to perform the activities on their own before club in order to learn more about it. In the Bers article, the idea was that student teachers needed to first be educated in what they were teaching, in detail, in order to best be able to implement the curriculum to future students (Bers 2005: 62). In the case of Girlstart, the STEM Crew leaders were given a curriculum on paper that was made by a retired science
teacher and often took the time to put together the experiments on their own time. Based on the personality of our club at the Magnet school, my partner and I would do the experiment and then figure out a way to best present it to our girls, who were always eager and curious about science. Often times we did extra research on the theme of the activity, such as for landfills and bio-fuels, because we knew that they would ask many questions about it (I personally think it would be an improvement if our curriculum writer would come witness a club to understand our press for time, but other than the time frame issue, the lessons are relatively well-written). As a result, Girlstart not only gives the young girls the opportunity for design and problem solving but also its interns who teach the girls.

So the question remains, does this program work? My findings within my own club suggest that it does. The girls’ attendance was always high, their enthusiasm for the material continued to grow, and they showed in their parent showcase how much they had learned by making their own instructions and designs for the activity with limited help from my partner and I. I can only infer based on my own club that programs like Girlstart are very useful and important for its purpose to teach young girls STEM activities and careers and to have the confidence to believe that they are able to be a part of a STEM field.

Conclusion

Girlstart was one of the most rewarding experiences of my college career. I learned a lot about academic-based after school programs and how they fill the holes in traditional education and how public STEM activities engage and encourage young students to think outside the box and learn something new. I do feel that I would love to do this job for the rest of my life, or at least something like it because of how much I enjoyed interacting with the children in this outside
educational setting and feeling that I was part of making a difference in their educational path. I enjoyed learning about how to fit a curriculum to a group of students, rather than just lecturing from one point of view and being a part of activities that sparked creativity and imagination along with teaching something about STEM. I also worked with some incredible people with passion about their work, great attitudes all the time and also just as amazing problem-solving skills as the girls. I felt so blessed and honored to be a part of this group and wish that I could have been able to continue on this path. Unfortunately, there is no full time position available, only part time STEM crew, which is perfect for girls who are still in college. I must say, that it was the most rewarding experience of my college career to help teach my group of girls the activities and to watch them grow as a group. Girlstart internships can either be paid, like for the women who choose to do a more full-time STEM Crew member, or like me they can be paid for mileage to and from events and club. I highly encourage those who are interested in Anthropology in Education or someone who just enjoys working with bright young girls and a highly enthusiastic staff to go for an internship at Girlstart: It will change your life.
