GLOBALORIA SHOW & Tell

Globaloria: An Evaluation Report on Two

School-Based Implementations in Silicon Valley

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Prepared for
The World Wide Workshop

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Independent · Insightful · Informative

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An Evaluation Report
On Two School-Based Implementations in Silicon Valley

Introduction

Rockman et al, an independent research and evaluation firm specializing in educational technology programs, conducted an evaluation of the first year implementation of the Globaloria program in San Jose. This evaluation effort was designed to be participatory in nature and participants and other stakeholders at each of the two participating schools were invited to be our evaluation collaborators. To supplement data generated through the participatory evaluation process, the evaluation team also analyzed data from national Globaloria participant surveys, administered a brief supplemental survey, studied program artifacts generated by participants on the Globaloria website, spoke regularly with Globaloria educators, and conducted three site visits.

Participating Sites

Two Schools in the Oak Grove School District participated in the Globaloria program during the 2011-2012 school year. Participating sites included AdVENTURE STEM and Christopher School.

AdVENTURE STEM

The AdVENTURE STEM program at Herman Intermediate School offers a 21st-Century Learning Centered-focused alternative for students in fifth to eighth grade. Thirty-three students in AdVENTURE STEM's sixth grade participated in the inaugural year of Globaloria at their school. The class met 5 days a week, about 50 minutes each session. The class focused on games about the ancient civilizations as a tie in to their History/Social Studies coursework. Their Globaloria teacher, a veteran social studies educator, seems to have been a strong factor in the success of students at this site, and her absence in the last weeks of the school year (for maternity leave) proved to be a unique obstacle for the students. None-the-less, teams at AdVENTURE STEM persevered and produced some spectacular games.

Students playing one of the games they created as part of their experience in AdVENTURE STEM's Globaloria program.

Christopher School

Christopher School serves students from Kindergarten through seventh grade. This was the first year for the seventh grade program at Christopher, and according to educators at this site, the students who stayed at Christopher for seventh grade rather than going on to a Middle School were concerned that they weren't having the same types of experiences as their peers. However, the Globaloria program allowed the thirty-three seventh grade students to put a positive spin on the different experiences they were able to have at Christopher School. With the help of their teacher and their Globaloria program facilitator, the students in Christopher completed several successful games that incorporated Math topics.

This bulletin board appears outside the technology classroom where students meet for Globaloria at Christopher School; it displays several game covers that the students designed.

From the Globaloria Flickr stream: Globaloria students at Christopher School.

Table 1: Overview of School Implementation Data

	AdVENTURE STEM	Christopher School
Number of participants	33	33
Number of teams	12	9
Grade level(s)	6	7
Meetings per week	5	5
Average class length	49 minutes	90 minutes

Participants

Gender

There was a fairly even distribution of male and female participants at Christopher School but the number of male participants was more than double the number of female participants in the AdVENTURE STEM program.

Table 2: Participants' Gender by Site

	Gender	Number of Participants
AdVENTURE STEM	Female	10
	Male	23
CHRISTOPHER	Female	18
	Male	15

* NOTE: One icon appears for each 5 respondents, rounded to the nearest 5.

Ages

Participants at Christopher were slightly older than participants at AdVENTURE STEM due to the Globaloria program being implemented at a higher grade level at that site.

Figures 1 and 2: Age Distribution
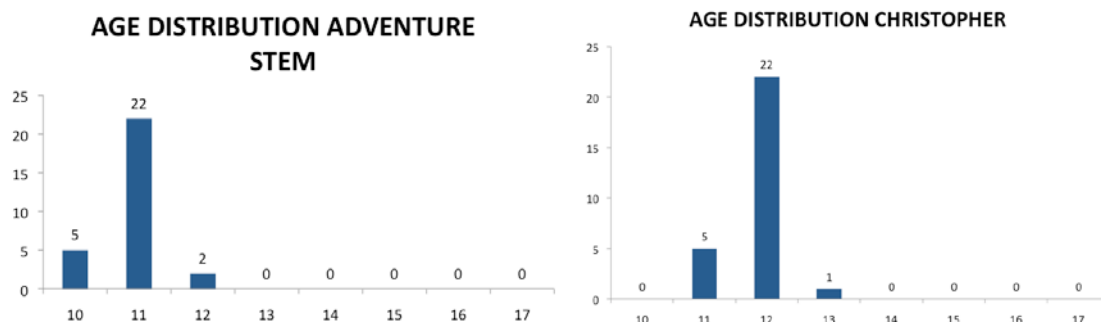
Ethnicity

The demographic make-up of the two school sites in San Jose were somewhat different. At AdVENTURE STEM there were fairly equally distributions of all ethnicities, and at Christopher the vast majority of participants were Hispanic.

Figures 3 and 4: Distribution of Participant Ethnicity

ETHNICITY ADVENTURE STEM

2%
17%
20%
29%
15%
17%
0%

- American Indian or Alaska Native
- Asian
- Black or African American
- Native Hawaiian or Other Pacific Islander
- Hispanic or Latino
- White
- Some Other Race

ETHNICITY CHRISTOPHER

3%
6%
6%
11%
5%
0%
69%

- American Indian or Alaska Native
- Asian
- Black or African American
- Native Hawaiian or Other Pacific Islander
- Hispanic or Latino
- White
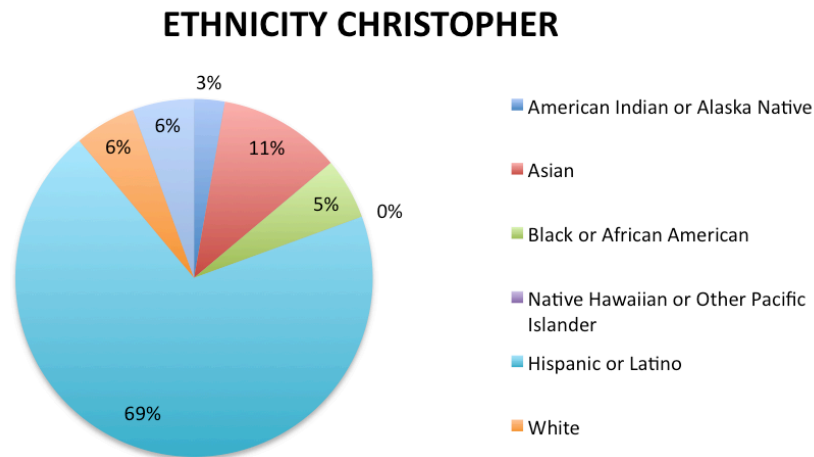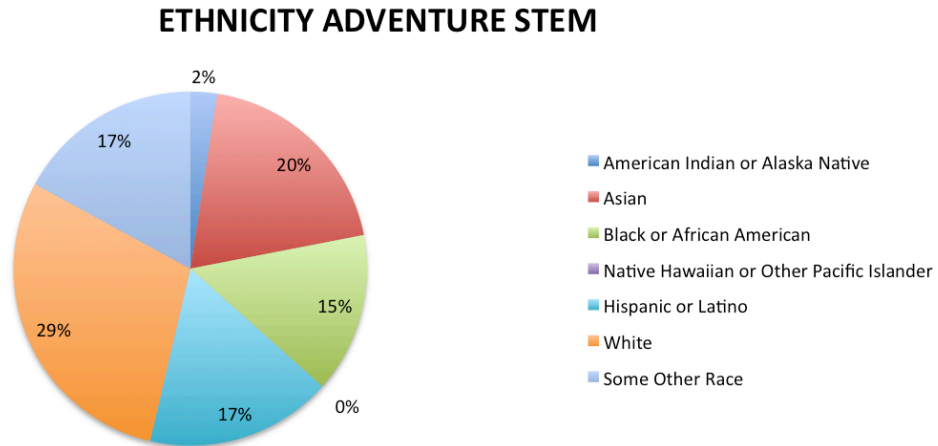
Participant Activity

In Globaloria, participants receive points for things they post and edit on their Globaloria wikis, for the files that they upload to the site, and for the activities they complete. The evaluation team monitored and assessed point tallies on the Globaloria website as an indicator of participants' activity and engagement with the program. Students at AdVENTURE STEM had an average of 28956 points, and students at Christopher had an average of 33287 points. The higher average point tally at Christopher School, and the higher number of blog posts, shown below, may be a result of participants at Christopher having longer class periods for Globaloria. Further research is necessary to better understand the potential correlation of program length and other variables on resulting point tallies.

Figures 5 and 6: Number of Blog Posts Over Time
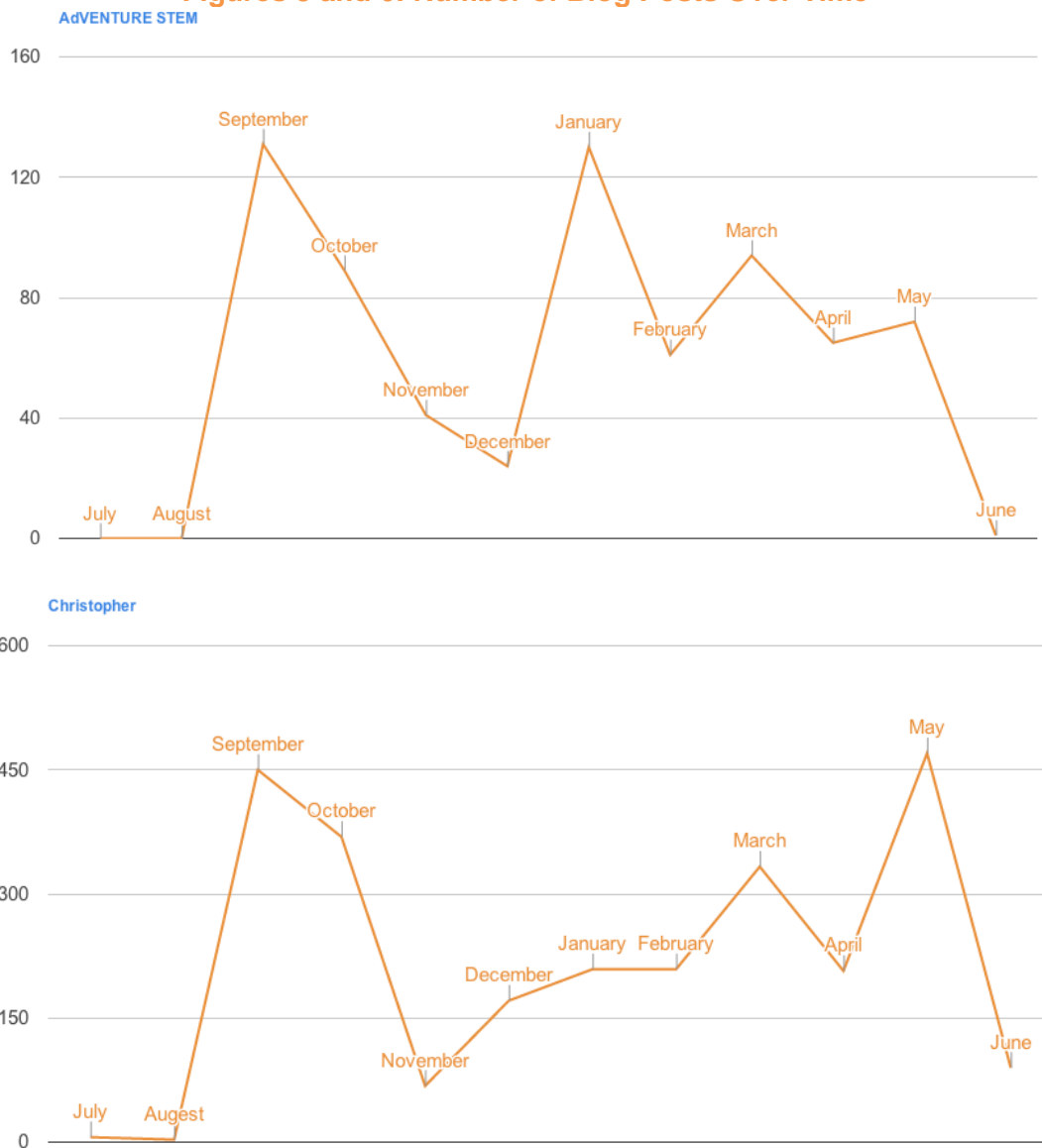
Evaluation Methodology

During the 2011-2012 school year, Rockman Et Al worked with the World Wide Workshop to develop and implement a quasi-participatory evaluation of its Globaloria program in the Silicon Valley. The decision to use a participatory approach stemmed from programmatic interests to broaden the general skill sets of participants and to foster community outreach, as well as a desire to streamline data collection with a potentially scalable strategy. Specifically, the evaluation effort included:

- A kick-off presentation and goal setting session in the fall of 2011 at each of the schools,
- Periodic check-in calls with Globaloria educators in San Jose,
- Review of online resources developed by participants as part of the Globaloria program including game demos, participant wikis and blogs,
- Analysis of pre-, mid-, and post-program participant surveys (including additional survey items implemented solely in San Jose), and
- A series of final presentation and Q&A sessions, including one at each of the two participating schools.

Kickoff Meeting

During the kickoff meeting held in November of 2011, participants were introduced to the concept of evaluation. However, the evaluation team opted to use the term "Show and Tell," feeling that it was a more approachable concept for youth. Each part of the participatory evaluation process was explained and expectations were outlined, then participants were guided through a goal setting activity.

As part of the goal-setting activity, participants were asked to write their goals on post-it notes and place them on posters. One poster was provided for participant-level goals (i.e., personal goals), another poster was provided for school-level goals—including benefits to the school and resulting changes or benefits for other staff and students, and a third poster was provided for community-level goals (i.e., goals that would benefit people and organizations beyond their school, including family members, local businesses and other members of the community at-large). The notes from each poster were transferred to a digital poster and organized by theme (as shown in the image on the right).

The goals generated by school-based participants in San Jose included the following:

Participant-Level Goals:

- Create/Complete Game, (a game that people enjoy playing)
- Learn new things (especially coding and other specific game creation skills)
- Become better prepared for the future (e.g., college and careers)

School-Level Goals:

- Help attract/retain students
- Teachers gain technology skills (and use technology more)

Community Goals:

- Share skills and knowledge with the community
- Sustain/Spread Globaloria program

Final Presentation Session

A final presentation session was held with participants at both schools in May of 2012. The final presentation included a brief presentation followed by time for visitors to play finished games and ask questions. Each site was also given the option of inviting parents and community members, but ultimately only AdVENTURE STEM opted to extend an invitation to students' parents—eight parents were present for the final presentation session at that site.

During their presentations students had a chance to indicate the extent to which they felt they had accomplished the goals they identified at the beginning of the school year. A question and answer session after students' formal presentations gave evaluators a chance to seek clarification and additional information about the extent of goal-completion in instances where information was lacking in the presentations or in other data gathered over the course of the school year.

Data Analysis

Since this was a participatory evaluation, the evaluation team used students' goals (listed above) to drive the analysis of data collected through the series of online site visits, via participants' blogs and wikis, and online surveys. The students' goals became the main themes around which subsequent data collection and analysis were organized.

Online survey data provided a demographic snapshot of each group of participants and allowed the evaluation team to search for evidence of students' goal-completion from a quantitative perspective. Site visit data, including observations and student presentations, and the materials produced and posted online by students, were largely qualitative in nature, but whenever possible we sought to quantify basic information, e.g., number of blog posts or number of points. If possible we used quantitative data, (e.g. the number of completed games posted on the Globaloria site), to inform an assessment on the extent to which a goal had been accomplished, but often times, it was necessary to call upon the rich set of qualitative data—including comments and work posted online and statements made by students and teachers throughout the year—to form an evidential base for understanding the extent to which each of the students' goals were accomplished.

The following section explores findings and outcomes. In addition to the data shared in support of various findings in the next section of this report, there is also a basic analysis of students' responses to the pre- and post-program surveys presented in Appendix A and a summary of the results from the supplemental survey administered in San Jose presented in Appendix B. Instruments used specifically in San Jose to gather data are presented in Appendix C and D. For the purposes of this evaluation, and being able to assess the extent to which the students' goals were met, qualitative data from onsite visits and online data from student blogs proved to be most useful. None-the-less, quantitative data is also used to support findings wherever possible.

Findings and Outcomes

In this section we explore each of the students' goals in greater detail and, using a mix of quantitative and qualitative data to support our findings, examine the extent to which they were met. In the first sub-section we explore the participant-level goals that students set for themselves, in the second, we examine goals and outcomes at the school level, and finally, we consider the broader impacts on the community.

Participant-Level Outcomes

Over the course of the year, Globaloria participants learned a great deal about game design—the technical skills required to create games, the iterative process of generating and refining ideas, the challenges and benefits of being part of a team, the troubleshooting and problem-solving skills needed to make everything work, and the ability to talk about their work and reflect on their experiences. There was also evidence to suggest that participants were having fun, despite the fact—or perhaps because—they were being challenged. In this section we explore these, and other participant-level outcomes, in greater detail.

Game Completion

Many successful games were produced by students at Christopher and AdVENTURE STEM over the course of the school year. Although each team was not able to complete its game in the time allotted, several did. Ultimately ten of the twelve teams at AdVENTURE STEM and four of the nine teams at Christopher were able to complete their games and upload them to the Globaloria site by the end of the school year.

At AdVENTURE STEM students' games focused on ancient civilizations. In addition to providing a wealth of historical and cultural information, these games allowed players to race chariots, explore pyramids and battle gladiators.

Above are examples from two games produced by students at AdVENTURE STEM

The games produced at Christopher were equally diverse, but focused on mathematical concepts. A variety of themes and game-play mechanics gave players a chance to develop and practice math skills including square roots and the multiplication of integers.

The examples above are from games created by students at Christopher School.

Learning Game Creation Skills

There is much evidence to support the acquisition of game creation skills. Evidence related to game-completion, discussed above, provides tangible proof of the game-design skills acquired by some participants. Even in instances where students' teams did not complete a game, there were other sources of evidence to suggest learning. At a minimum, each team had a demo available on the Globaloria site that demonstrated a basic understanding of Flash, and, in this subsection we present data from student surveys and blogs that also support the fact that game-creation skills were being acquired by participants in the Silicon Valley.

The evaluation team administered a survey to students in January, 2012. The survey sought to assess students' self-perception of their emerging game-design skills. Students rated their ability on each of the following skills using a five-point scale where 1="Not at all," 2="Not very well," 3="Somewhat able," 4="Pretty well," and 5="Very well."

- Coming up with ideas for a game
- Picking a single idea or direction for a game
- Doing research/finding good information
- Documenting my progress on wikis and blogs
- Planning and outlining all the different parts of a game
- Building a prototype of a game
- Creating scenes in Flash
- Creating/adding sound files
- Creating/adding animations
- Adding interactive features to a game
- Creating/using programming codes and scripts
- Testing and troubleshooting a game

- Fixing problems or programming bugs
- Presenting information about a game to others.

Participants generally rated themselves to be proficient at most game design skills, (with responses ranging from being "Somewhat able" to "Very well" able to do each task). Self-rated ability for coming up with game ideas was highest, followed closely by doing researching, documenting progress on wikis and blogs, creating scenes in flash, and creating or adding animations to games.

The tables below present a breakdown of self-reported skill data by site. Participants at Christopher School seem to be a bit more reserved in their self-reported ratings of abilities, while participants at AdVENTURE STEM tended to be more confident in their game design abilities. These differences could be the result of demographic variations, including levels of parent education—the latter of which is explored more fully in a publication by national program evaluator, Rebecca Reynolds.

Figure 7: Student's Self-Reported Level of Learning for Game Creation Skills
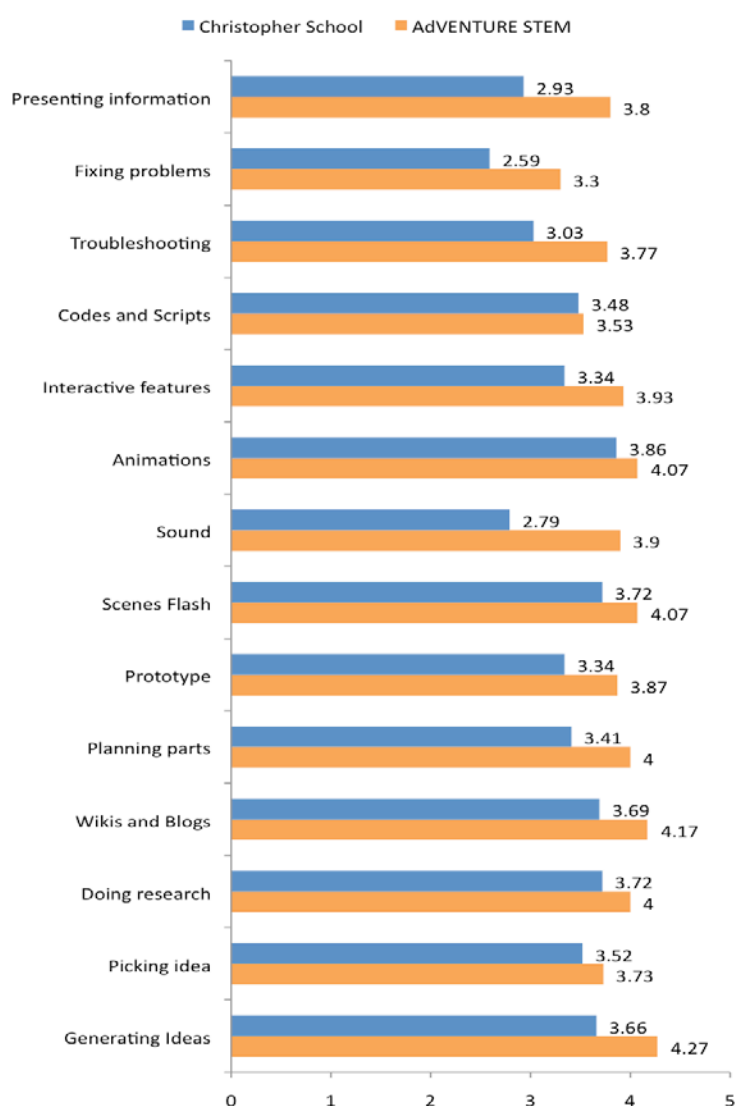
Data gathered from the Globaloria site and students' blogs also illustrates emerging mastery of Flash skills, and ample discussions about the game design process. For example, the following excerpts from a Christopher student's blog illustrate her emerging knowledge of game design terms and skills:

September 20, 2011: I still need to learn the steps for I could have a great mini game. I want to make a mini game that is fun and that it has a lot of movements. Many people think that making a mini game is easy, but its hard.

March 27, 2012: I found the borders challenging because I need to create a border one by one to convert it to symbol. I also found my platform level challenging because I have to draw and create a hero, enemy, dead zone, portal, ground, and a background.

Another set of entries from an AdVENTURE STEM students' blog show his progression over the course of the year. Also evident in these posts are his growing pride in his accomplishments and his desire to share his knowledge with others:

October 18, 2011: Curly braces are very important. The thing I messed up on was putting code in a different layer. I had all of the code in actionscript but had additional code in a different layer. I didn't know it would make the game go screwy.

January 11, 2012: I have learned how to use buttons. My game is mostly based on buttons. The cool thing is that they can do most anything, such as changing color, moving you to another frame, and showing you an image. You can make buttons by converting the image to a symbol and changing the symbol type from movie to clip to button.

April 27, 2012: This week I worked on sounds which I added for unlocking a door, blowing up a wall, undead mummies moaning, and bashing down a door. I also added random statements which involve randomly picking one thing to happen out of a set number of things. Here is the code for a basic random statement. "random1" is the variable and "action" is what you want to happen.

```
random1 = random(4);
//the number in the parentheses after "random" is the number of possible outcomes
if (random1 = 0) {
    action
}
//A random statement begins with 0 and ends with one number below the number of possible outcomes.

if (random1 = 1) {
    action
}

if (random1 = 2) {
    action
}

if (random1 = 3) {
    action
}
I hope you find this code helpful and here is the code I found for sounds
//first declare the variable

var song = new Sound();
//now tell what sound to play. go in the sound's properties, select action-script, check the "export for action-//script" box, and type your
sound name song.attachSound("typeyoursoundhere")
//lastly, put this code where you want to play the sound
song.start();
```

This set of tips from a student at AdVENTURE STEM also illustrates the types of things students learned about the game-design process:

1.) Have a good game topic: Have a topic that you and your group know that you are going to stick on! Like math, history, etc.

2.) Plan before you do anything on Flash: By this I mean make a paper plan with your group and draw some ideas out like a paper prototype.

3.) Do some research about your topic: If you already know some fact then share them and then you can make the prototype and then you add more as you go. One person in the group can look up research and then tell the leader all of that and then you add it to your game.

4.) Organize your team: If you see that your group is "messy" then assign job's for everyone. Example: Planer, Organizer, researcher, code manager, etc.

5.) Have FUN!! Don't take your job to serious that mean you don't enjoy it. Always have fun on whatever you are doing or sometimes add something funny to your game!!

6.) Take some time off: I don't mean take a vacation! Let your group have a break or let one member have a break and then let another like shifts! Give them a 5-7 minute break not to long! Let them post a blog, have fun on Flash, if you want to let them look up pictures (that are related to the game!)

Evidence of students' game design skills was also present in their responses to a question in the mid-year survey that asked them to share what they were most proud of thus far. Responses included working with Flash, creating animations, working on graphics, incorporating interactivity, and adding sounds. The following are a few specific examples of students' comments on the mid-year survey:

The thing I done so far that I am most proud of is working on Flash because when I finish a game that I made I feel happy because I finished it and it works. - Student at Christopher School

I think that my design levels and getting stuff to move is what I'm most proud of because I know that I wasn't able do this last year, but now I am. - Student at AdVENTURE STEM

I am so proud of making buttons and sounds and things move. I thought that I would NEVER be able to do that. - Student at AdVENTURE STEM

During their final presentations, students also talked about the things they had learned:

I've learned many new things in Globaloria. I've learned action scripts, graphics, how to make many things move, how to make a game enjoyable. –Student at AdVENTURE STEM

Learned how to action script for a game…Making a game isn't as easy as it looks – when you're our age you think "oh yeah, I'm going to make a game!" It sounds so easy but when you get started its hard. I made an enjoyable game, and I got to know people better. – Student at AdVENTURE STEM

As part of the final presentation at Christopher, one student was invited to show some of the additional games and animations he'd created on his own time. He explained his personal interest in creating characters with more life-like movement.
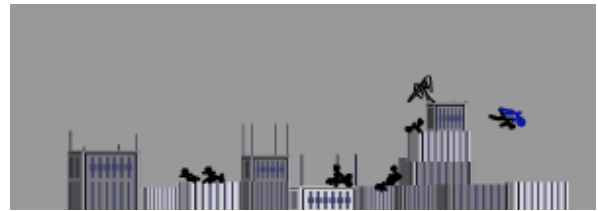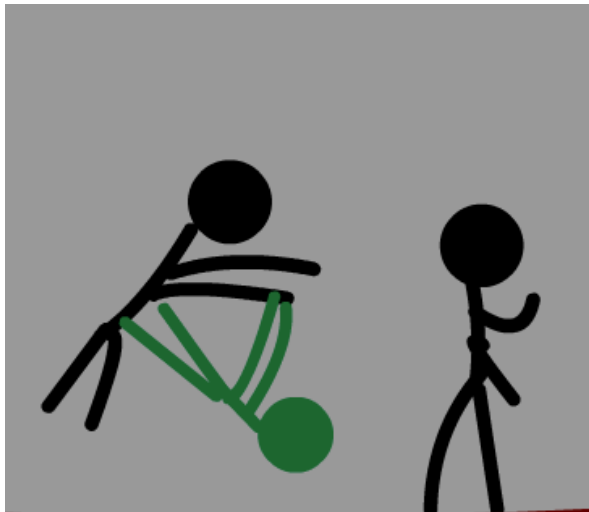
Above and Right-top: Screen captures from Flash animations, Right-bottom: Menu page for a personal game created by a student at Christopher.

Becoming Better Prepared for the Future

In addition to acquiring specific skills necessary to develop games (e.g., Flash coding, creating graphics, debugging, etc.), there were many skills that students gained and strengthened through the Globaloria program that could be transferred to other parts of their lives and academic pursuits. Specifically, participants gained the ability to be more self-directed learners, to work as part of teams, and to develop leadership skills, and all of these skills translate to things that will help them become better prepared for the future.

Self-directed learning

Participants in the Globaloria program learned a great deal about learning how to learn. For some, it was the first time they'd experienced a situation where their teacher or instructor did not have all the answers. The participants subsequently found themselves having to work collaboratively to solve problems or find answers on their own from time to time. For some this was frustrating, but for others this proved to be motivational. At the final presentation, one parent told us that her husband had tried to teach her son some of the things they'd been learning about in Globaloria. He wasn't interested in learning from his dad, she explained, but he'd been extremely engaged in the largely self-guided learning process that Globaloria employs

There was also ample evidence to support the fact that some students were taking advantage of the Globaloria platform to expand their game-design skills on their own. At both school sites we heard from and about students who had taken it upon themselves to go well beyond what was

required of them as part of the Globaloria program. The following quote, for example, from the teacher at AdVENTURE STEM speaks to the self-directed learning that she observed:

They have also realized that the wiki has a lot of lessons and tips. They are going ahead - not waiting for me/rest of classmates, going deeper on their own (both in class and at home). – Teacher at AdVENTURE STEM

The following quotes provide additional examples of self-directed learning:
Whenever you have a problem in school you go up to the teacher and say, "can you help me with this I don't know how to do this." Its very different when you go up to a teacher and they say "I don't know, try this," and sometimes when they come up to you its also different. You don't expect a grownup who is 30 years older than you to say "I don't know how to do this." – Student at AdVENTURE STEM

Confidence level of them being able to start something and follow it all the way through…Felt like I wasn't needed as much toward the end – they were able to piece it together. After I showed them once or twice they were able to do it on their own. - Educator at Christopher School

Teamwork and Leadership
In taking on different roles in the game design process, participants were able to strengthen their skills both as leaders and followers. Participants who served as team leaders spoke of the need to help steer and direct other team members to accomplish tasks in a timely fashion, or take on additional roles if necessary to accomplish things in a timely fashion. Some participants also took on leadership roles with-in their class as the "go-to" person for help with Flash or other game design tasks.

Students also gained practical experience working as part of a team and were able to articulate many of the resulting benefits of teamwork, including the ability to get more done and divide workloads according to different members' interests and strengths—allowing each team member to take on a leadership role in different parts of the game development process. The following quotes summarize many of the participants' sentiments and thoughts about teamwork:

Ask your teammates and they help you figure out the answer – and it's a great feeling when you can help your teammates – Student at AdVENTURE STEM

When you have teammates you can focus on your part – if you're not good at one thing, your teammate can do it and if they're not good at one thing you can do it, and it turns out better. - Student at AdVENTURE STEM

Tons of stuff we have to do such as animation, coding and designing. Some of us were leaders in animation, some of us were stronger in coding, some of us were stronger in designing. Each one of us was a leader in one of those categories. – Student at Christopher School

Working with teammates you get things done a lot faster, because you have three people working on three different things. Sometimes we had some arguments, but in the end it all finished into a good product and all our parts came together. - Student at AdVENTURE STEM

Greatest success: Teamwork – the way that they are coming together and dividing jobs. I can't break down the jobs for them – they have to do it themselves…Some are more successful than others, but generally getting along well and communicating well with each other. –Teacher at AdVENTURE STEM

Becoming better readers and researchers

Teachers indicated that their students were gaining specific skills related to their academic pursuits. For example, according to the Globaloria teacher at Christopher, students' reading comprehension scores had gone up on a recent standardized test; she attributed the gains to all the reading the students had been doing as part of the Globaloria program. Teachers were also impressed by the quality of the students' research. The following is a quote from the Globaloria teacher at AdVENTURE STEM from a mid-year check-in call:

I am amazed at how creative they are being – and how much they are getting into the research piece. The fact that most of them are going deeper with research even if I didn't tell them to do it – I see evidence of it in their work (not necessarily their blogs). One group realized they didn't have enough information to plan their game and proactively did more research on their own.

Pride and Confidence

Many statements made by Globaloria participants over the course of the year indicated a growing confidence and pride in their abilities—and the likelihood that these things would serve them well in the future. On the mid-year survey, more than a third of participants (41%) said they were proud of their game, i.e., creating or completing a working game. Examples of their comments include the following:

Something I'm most proud of this year is getting to make a game! I mean it's not everyday we make a game on Flash. This class is special to me! – Student from AdDVENTURE STEM

What I've done so far in Globaloria this year that I'm most proud of this year is all the progress for my game. – Student from Christopher School

Other comments from students during their final presentations included the following:

I'm proud that I learned lots of things that will help me in the future – Student at Christopher School

For the first time in a life that I've been playing games, I'm making them and I think that is kind of fun. Honestly making video games, seeing how they work and saying "wow, I made this by myself!" – Student at AdVENTURE STEM

Globaloria inspired me to do more in my life. Made me want to go on to a computer and not just want to play games but learn how they are made, how to make them on my own. Enjoyed making my games and its fun being able to do this. – Student at AdVENTURE STEM

The youths' pride and confidence in their accomplishments was apparent at the Globeys, an award and recognition ceremony, held for students in San Jose on June 5th. This event allowed students to showcase their work and be recognized for their efforts.

Right: A student from ADVETURE STEM joins Idit Caperton, Globaloria creator, at the Globeys in San Jose. Bottom left, a student from AdVENTURE STEM shows his game. Bottom right, students and staff from Christopher School show off their winnings. (Bottom photos are from the Globaloria Flickr account)

School-Level Outcomes

Among the goals that students set for their school were a desire to help attract new students—in part, by creating greater awareness and excitement about technology and the Globaloria program in general—and fostering greater technology skills and technology usage among teachers. In this sub-section we explore these school-level goals in greater depth.

Attracting Students

Globaloria participants provided examples of ways that the program has helped to create greater awareness and respect for their school. In their final presentation, students at Christopher explained that one of the school-level benefits of the Globaloria program was the fact that their school had gotten more attention and respect from other students, parents and teachers.
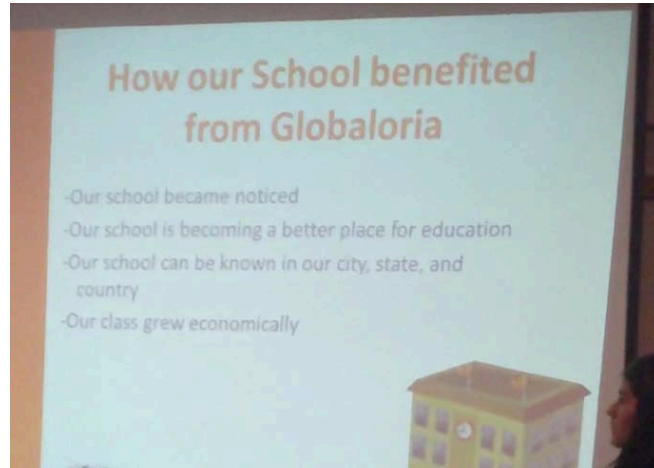
A slide from the student's final presentation at Christopher, describing how their school has benefited from Globaloria.

The following quotes from the final presentation at Christopher indicate the extent to which the program has fostered greater interest in their school and served as a vehicle to help attract and retain students:

Parents of younger grades, such as 6th and 5th have been really interested in our program and they've been wanting their children to come here next year. And teachers that used to come to this school or from other schools (used to teach at Christopher) are also interested in the program and I heard that College students are also becoming interested in the Globaloria program. – Student at Christopher School

We have a few different students from Christopher come back to visit. They are actually coming into the classroom and seeing what the students are doing, they're really interested and saying, "I wish we were doing that when we were kids at Christopher." – Educator at Christopher School

The school-wide interest in Globaloria at Christopher was likely due, in part, to their efforts to reach out to involve the entire school community (including students and teachers from 2nd to 6th grade) as game testers and game reviewers, as described by their teacher during the final presentation. Evidence of the Christopher students' outreach was also present in blog posts. For example, in the following post, a student talks about how they had shown some of their Flash projects as a way to excite incoming 7th graders about the STEM Academy program at Christopher:

Today we saw the incoming 7th graders and we shared the projects and thing we did in S.T.E.M. Academy. We showed them our group power points like when we did the be drug free, verbs, genetics, and our mutations. We also showed the incoming 7th graders some flash projects we made through out the year. – Student at Christopher School

The fact that the Globaloria program is expanding at AdVENTURE STEM indicates their success in generating interest in the program as well. For example, a student at AdVENTURE STEM who

serves on the student council indicated that other student council members were excited about Globaloria and there had subsequently been a push to expand the program within the school in the coming year:

Next year they are buying more laptops for another Globaloria class. People were excited about it - We talked about it student council and it sounded really fun and the rest of our school community can benefit. – Student at AdVENTURE STEM

Teachers gain technology skills

Students also expressed a desire for their teachers to learn more about technology and find new ways to incorporate technology. While it is unclear if other teachers at Christopher and AdVENTURE STEM were using technology more as a result of Globaloria, it is clear that the Globaloria teachers gained new technology skills (as evidenced by their blogs and the statements made during check-in calls over the course of the year). There was also some evidence to support the fact that other teachers were seeing the potential of the program to foster meaningful use of technology, as in the case of the following quote:

We had a lot of teachers come to assess their games and help with the process of choosing the final two games. A lot of teachers were excited to see what the students were doing – Teacher at Christopher School

Community-Level Outcomes

The Globaloria program also sought to foster connections between schools and communities. At the beginning of the year, students indicated a desire to share their skills and knowledge with the community and to help sustain and spread the Globaloria program. In this section of the report, we explore evidence that suggests the extent to which these goals were accomplished.

Share skills and knowledge with the community

Perhaps one of the most exciting opportunities for participants was the chance to visit and talk with staff at Adobe. The opportunity to meet with the people who had created the software they were using to create their games was highly valued by participants.

My most memorable experience from yesterday's field trip was presenting my team page. I had never presented to that much people that would be so focused or wanted more info on my work. – Student at Christopher School

My most memorable experience from yesterdays field trip is when the people at the ADOBE talks about their jobs, because it help me understand more about what they job look like, what they have to do, and what is the hardest part. I think it's pretty amazing that we got to talk to them, because this can really help in the future. – Student at Christopher School

Victoria Edwards from the AdVENTURE Program at Herman Intermediate School presented a game at Adobe Systems called "Journey of Gladius," based on the story of the Roman Gladiators. She was one of a group of middle schoolers participating in Globaloria, a program that aims to excite youngsters in tech careers.

Vicki Thompson

Above Left: A student from AdVENTURE STEM presents her project – the photo, by Vicki Thompson, appeared in the San Jose Business Journal on Monday April 9th, 2012. Above Right: Students from Christopher present at Adobe. Left: The entire group from Christopher poses for a photo at Adobe.

Sustain and Spread the Globaloria program

As discussed in the previous section, the Globaloria program is being scaled up to include more classes and students during the 2012-2013 school year. Not only are efforts already underway to continue the Globaloria program at Christopher and AdVENTURE STEM, but there will also be several new schools implementing Globaloria in the coming year. It is unclear how much of the scale-up effort is an impact of the school-based implementation or the efforts of students in San Jose, but it is reasonable to assume that their hard-work and resulting successes helped to pave the way for programmatic growth.

Participants from the 2011-2012 Globaloria program are also likely to contribute to the success of the program in future years. Educators in San Jose now have more extensive knowledge about the program and the technology it utilizes, and students will be able to share many of the things that they've learned this year with Globaloria participants in their school in the future. For example, at Christopher School they are collecting examples of code and troubleshooting tips into a binder that will serve as a resource in future years, and at AdVENTURE STEM a teacher explained that this year's Globaloria participants will not only have an opportunity to participate in the program again next year, but will play an important role in mentoring new students.

Discussion and Recommendations

Impacts on Students, Schools and Communities

There is ample evidence to suggest that the students' goals were accomplished and that Globaloria had significant impacts on participants, their schools and, their communities. However, evidence for the latter two impact categories, (i.e. school-level impacts and community-level impacts), wasn't as plentiful as evidence of student-level outcomes.

The relative lack of data for school and community-level impacts is due in part to a greater focus on student-level impacts. It is possible that some impacts may have gone unnoticed in an evaluation effort that focused the greatest amount of resources and attention at the student level. To more fully understand the impact across a wider range of impact levels, evaluation efforts in future years should focus to a greater extent on impacts at the school and community levels, in addition to impacts at the student-level.

Methodological Strengths and Weaknesses

Participatory evaluation offered an opportunity for a variety of stakeholders in San Jose to become involved in the process of collaboratively evaluating the Globaloria program. Unfortunately, due to time constraints and the rigorous nature of the program, a truly participatory evaluation proved to be challenging. Participants' lack of time, and the understandable need to focus available time on game-design efforts, made it challenging for students to find ample time to devote to collecting and reflecting on data for evaluation purposes. Despite these challenges, however, the evaluation team felt that there was great value in working with students to articulate their goals and offering opportunities to reflect on these goals at the end of the program.

To enhance the participant-led data collection efforts, additional data was mined from the Globaloria site throughout the year by the evaluation team. Based on the quality of this online data, the evaluation team feels there is great promise to using students' blogs and wikis more extensively in future evaluations as a way to gather rich sets of data from students without requiring additional efforts on their part. Based on the modest amount of online data collected and analyzed this year, there is reason to believe that this web-based data would also be able to support a more extensive assessment of different levels of impact resulting from different levels of participant activity.

Participants' Recommendations

The following recommendations were offered by students during the final presentation sessions.

1. More Support Resources: Participants in both schools expressed a desire for more resources to help them create their games—especially with the Flash coding process. Some participants expressed a desire for an **enhanced searchable repository of information** (including options for them to add to this shared repository of information). Other participants expressed a desire for additional **live-support** opportunities. Some participants had taken advantage of live support resources currently available through the Globaloria program, but felt that more could be done to increase participant and educator awareness and use of existing resources.

2. Home Access: Students were able to log into their Globaloria accounts from home with no problems, but were challenged by efforts to actually work on their games. They were able to download demo copies of Flash, but after 30 days their licenses expired and they were no longer able to work on their games from home—the high cost of the software was a barrier. Exploring whether additional licenses could be donated by community partners (e.g., Adobe) or considering other game development platforms (e.g. javascript, or HTML5) were options that the students suggested.

3. More Opportunities for Recognition: Participants at both schools expressed a desire to submit more games for judging and greater opportunities for recognition beyond their groups. Reviews from professionals offered an opportunity for recognition, but the facilitator at Christopher felt there would be greater value in having games reviewed at a later stage in the game design process—not realizing that later iterations of the games could be submitted for further review. School or class-based award programs may also offer additional opportunities for recognition and celebration of students' accomplishments.

Conclusions

In its inaugural year in San Jose, the Globaloria program had a significant impact on participants and paved a way for further impacts in subsequent years. Students produced tangible evidence of their newly acquired game-design skills in the form of fourteen working games and several more demos and mini-games—games that are not only creative and fun, but also educational. Comments made by students during the final presentation and throughout the year on their blogs provide additional support for the fact that a significant amount of learning took place over the course of the 2011-2012 school year.

In addition to learning practical 21st Century technology, leadership, and collaboration skills, students in San Jose also gained confidence in their abilities and practical experiences that will strengthen their ability to succeed in an increasingly competitive world. The Globaloria program is challenging and intense, but provides youth with an opportunity to foster a new set of skills and the subsequent confidence necessary to be productive citizens.

Appendices

    A.   Summary of San Jose Pre-/Post- Program Survey Data
    B.   Summary Mid-Year Survey Data
    C.   Supplemental Mid-Year Survey Instrument
    D.   Check-in Call Interview Protocol
    E.   Example of Online Data-Collection Rubric

Appendix A: Pre-Post Survey Comparison

Online surveys were administered to Globaloria participants nation-wide at the beginning, middle and end of the Globaloria program. Survey data for San Jose was analyzed to provide additional insight on outcomes – the data below represents a basic comparison of pre- and post-program survey responses from participants in San Jose.

Reasons for Participating

I'm participating in the Game Design Class…

The following figures represent pre- and post-program survey data for school-based participants in San Jose in response to a question that asked students to indicate their level of agreement with a series of statements about their reasons for participating in Globaloria. The average scores in the figures below are based on a five-point scale where 1="Not at all true," 2=Not usually true," 3="Sometimes true," 4="Usually true," and 5="Very true."

It is understandable, and in fact, desirable in some instances for there to be less agreement at the end of the program than at the beginning—especially in instances where the statements represent extrinsic, rather than intrinsic reasons for participation. For example, it is desirable for there to be less agreement with the following extrinsic reason for participation: "Because others would think badly of me if I didn't (participate)." Likewise, it is desirable for there to be more agreement with intrinsic reasons for participation, e.g. "Because I feel like it's a good way to improve my skills and my understanding of game design and technology."

Appendix A, Figure 1: School Participants' Agreement with Participation Reasons
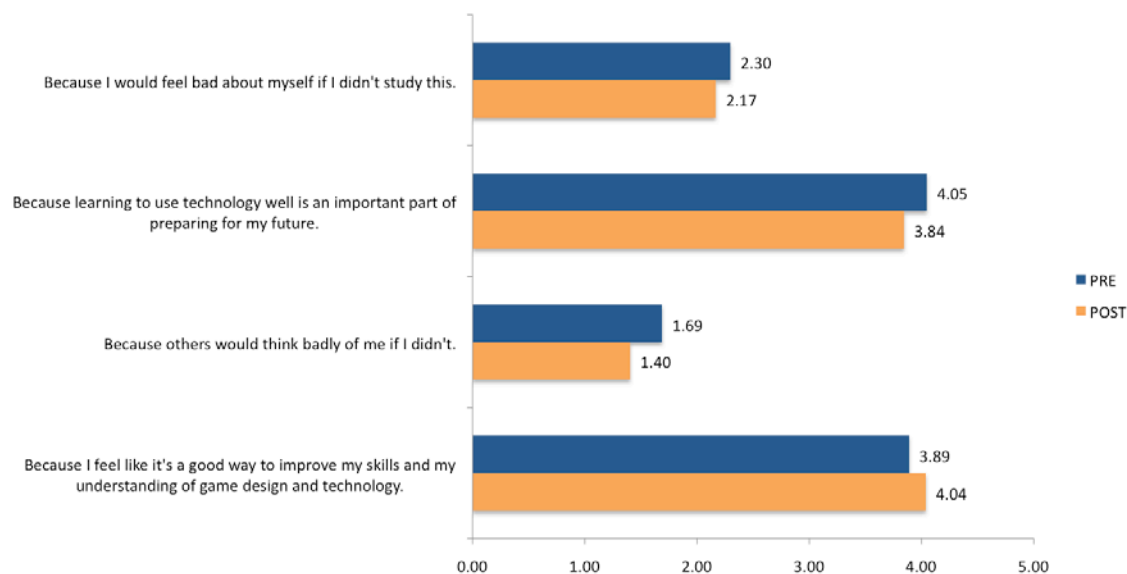
Appendix A, Figures 2 and 3, Individual School Participation Reason Data

Because I would feel bad about myself if I didn't study this.
- ADV_PRE: 2.88
- ADV_POST: 2.81

Because learning to use technology well is an important part of preparing for my future.
- ADV_PRE: 4.22
- ADV_POST: 4.15

Because others would think badly of me if I didn't.
- ADV_PRE: 2.03
- ADV_POST: 1.70

Because I feel like it's a good way to improve my skills and my understanding of game design and technology.
- ADV_PRE: 4.06
- ADV_POST: 4.11

Legend:
- ADV_PRE
- ADV_POST

Scale: 0.00 — 1.00 — 2.00 — 3.00 — 4.00 — 5.00

Because I would feel bad about myself if I didn't study this.
- CHRIS_PRE: 1.72
- CHRIS_POST: 1.52

Because learning to use technology well is an important part of preparing for my future.
- CHRIS_PRE: 3.88
- CHRIS_POST: 3.53

Because others would think badly of me if I didn't.
- CHRIS_PRE: 1.34
- CHRIS_POST: 1.10

Because I feel like it's a good way to improve my skills and my understanding of game design and technology.
- CHRIS_PRE: 3.72
- CHRIS_POST: 3.97

Legend:
- CHRIS_PRE
- CHRIS_POST

Scale: 0.00 — 1.00 — 2.00 — 3.00 — 4.00 — 5.00

The next set of questions on the pre- and post-program survey asked students to indicate their level of agreement with a set of statements about continuing to participate in the program. The average scores in the figures below are based on a five-point scale where 1="Not at all true," 2=Not usually true," 3="Sometimes true," 4="Usually true," and 5="Very true."
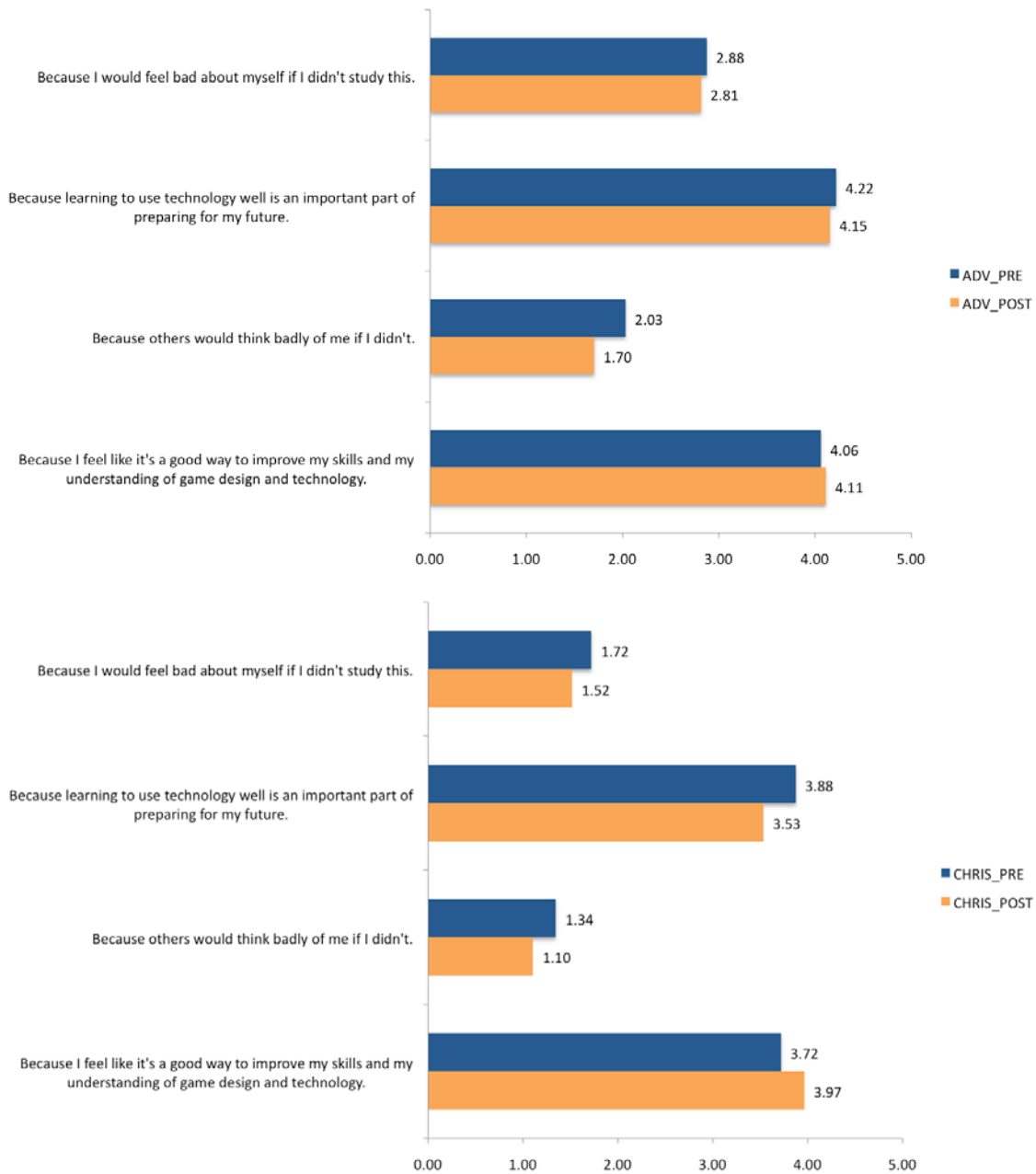
Appendix A, Figure 4: School Participants' Agreement with Reasons to Follow Along
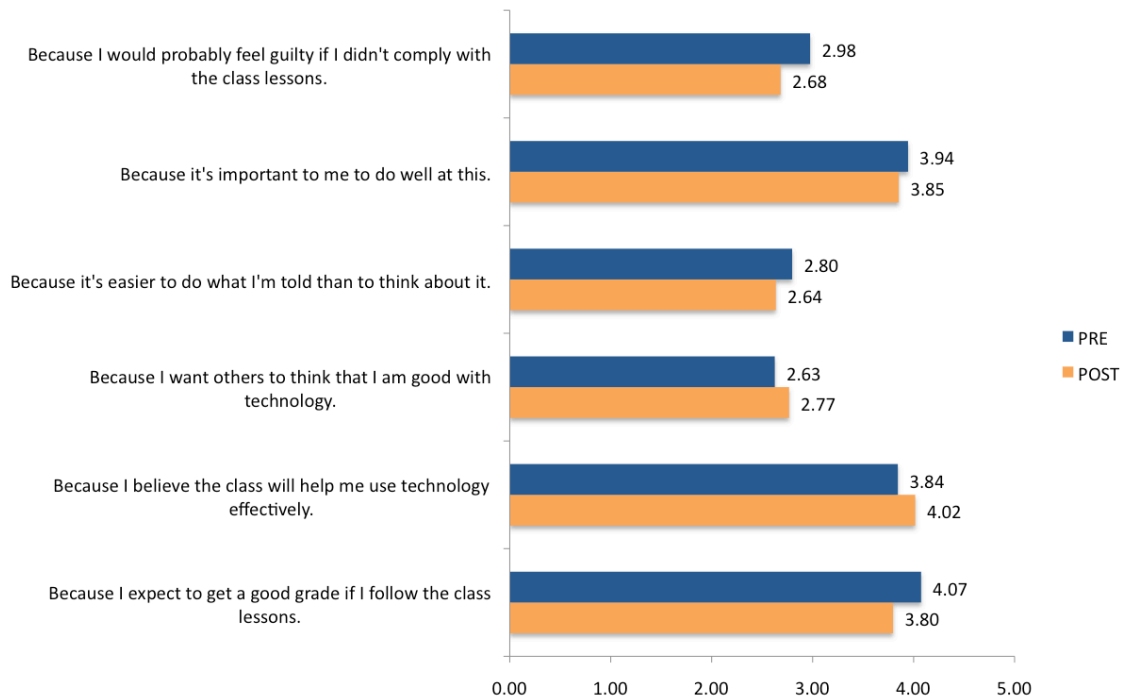
Appendix A, Figures 5 and 6, Individual School Participants' Agreement with Reasons to Follow Along

Figure 5 (ADV_PRE / ADV_POST)

Reason	ADV_PRE	ADV_POST
Because I would probably feel guilty if I didn't comply with the class lessons.	3.70	3.19
Because it's important to me to do well at this.	4.21	4.15
Because it's easier to do what I'm told than to think about it.	3.09	2.62
Because I want others to think that I am good with technology.	2.78	3.00
Because I believe the class will help me use technology effectively.	4.34	4.31
Because I expect to get a good grade if I follow the class lessons.	4.24	3.73

Figure 6 (CHRIS_PRE / CHRIS_POST)

Reason	CHRIS_PRE	CHRIS_POST
Because I would probably feel guilty if I didn't comply with the class lessons.	2.25	2.17
Because it's important to me to do well at this.	3.68	3.55
Because it's easier to do what I'm told than to think about it.	2.50	2.66
Because I want others to think that I am good with technology.	2.47	2.53
Because I believe the class will help me use technology effectively.	3.34	3.72
Because I expect to get a good grade if I follow the class lessons.	3.91	3.86

I plan to continue strengthening my technology and game design skills:

The next set of questions on the pre- and post-program survey asked students to indicate their level of agreement with a set of statements about plans for continuing to strength technology and game design skills. The average scores in the figures below are based on a five-point scale where 1="Not at all true," 2=Not usually true," 3="Sometimes true," 4="Usually true," and 5="Very true."

Appendix A, Figure 7: School Participants' Agreement with Plans to Continue Strengthening Technology and Game Design Skills
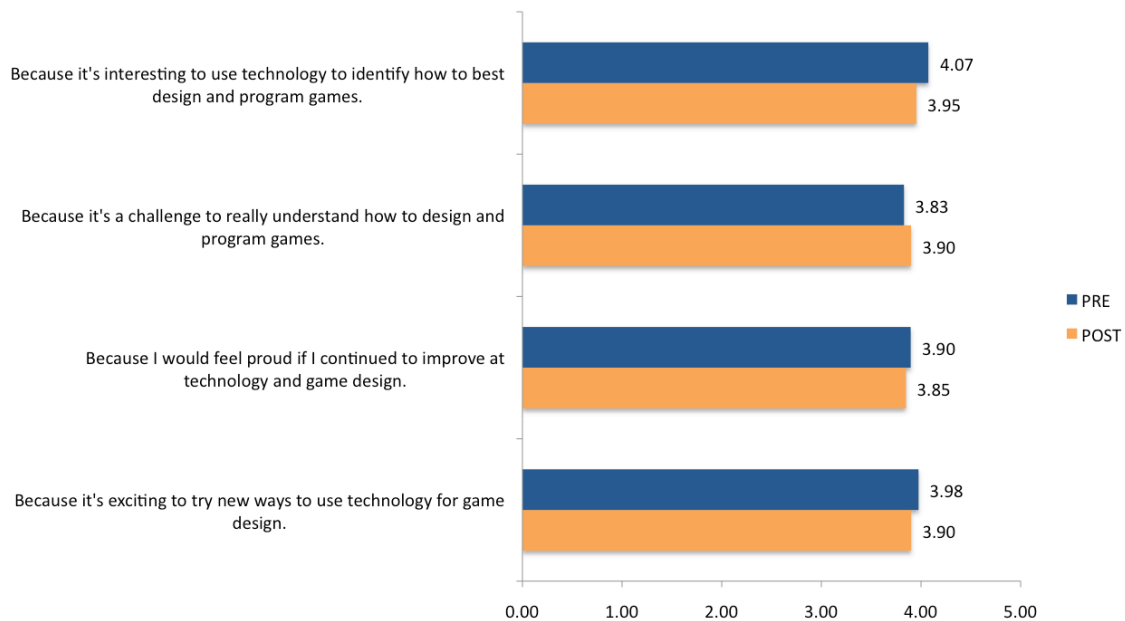
Appendix A, Figures 8 and 9, Individual School Participants' Agreement with Plans to Continue Strengthening Technology and Game Design Skills

Because it's interesting to use technology to identify how to best design and program games.
ADV_PRE: 4.30
ADV_POST: 4.15

Because it's a challenge to really understand how to design and program games.
ADV_PRE: 3.97
ADV_POST: 4.00

Because I would feel proud if I continued to improve at technology and game design.
ADV_PRE: 4.21
ADV_POST: 4.11

Because it's exciting to try new ways to use technology for game design.
ADV_PRE: 4.29
ADV_POST: 4.11

Because it's interesting to use technology to identify how to best design and program games.
CHRIS_PRE: 3.84
CHRIS_POST: 3.76

Because it's a challenge to really understand how to design and program games.
CHRIS_PRE: 3.69
CHRIS_POST: 3.80

Because I would feel proud if I continued to improve at technology and game design.
CHRIS_PRE: 3.58
CHRIS_POST: 3.59

Because it's exciting to try new ways to use technology for game design.
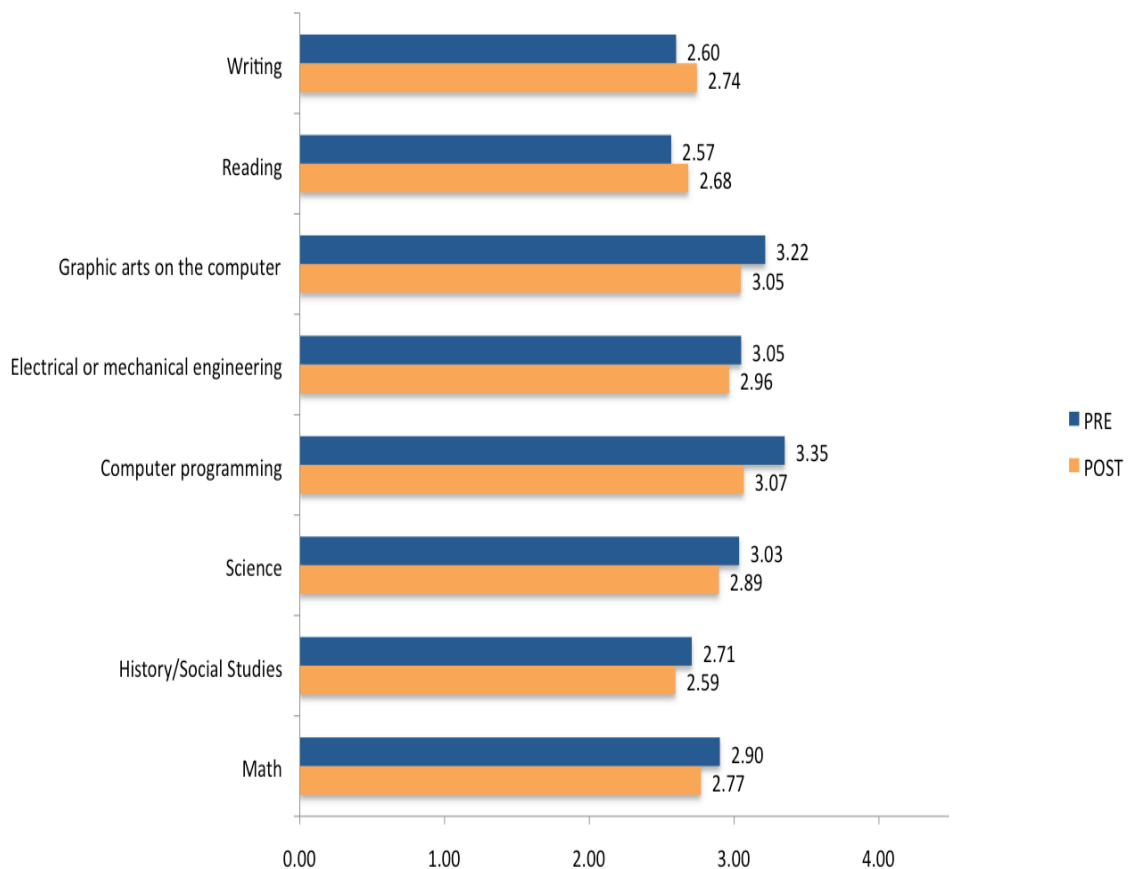CHRIS_PRE: 3.66
CHRIS_POST: 3.69

Interests

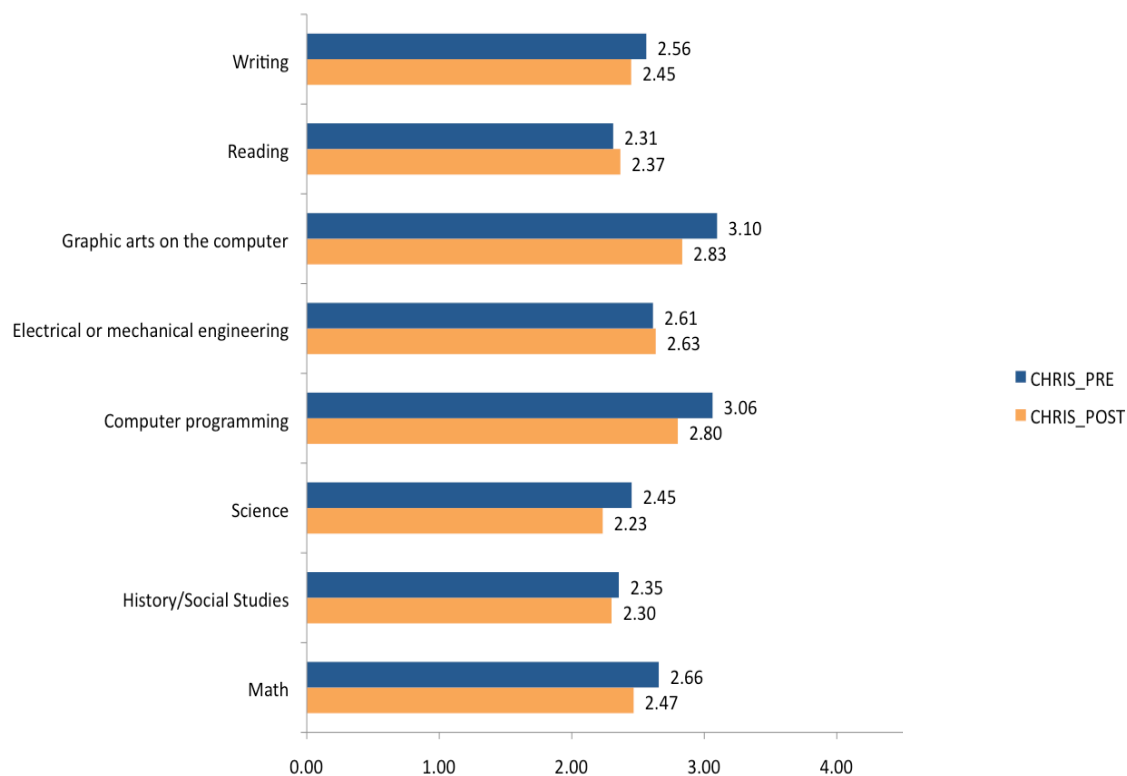### How interested are you in your learning, in the following areas? (academic)

The next set of questions on the pre- and post-program survey asked students to indicate their level of interest with various academic subjects. The average scores in the figures below are based on a four-point scale where 1="Not at all interested," 2=Only a little interested," 3="Interested," and, 4="Very interested."

Appendix A, Figure 10: School Participants' Level of Interest in Learning Different Subjects

Writing — PRE 2.60, POST 2.74
Reading — PRE 2.57, POST 2.68
Graphic arts on the computer — PRE 3.22, POST 3.05
Electrical or mechanical engineering — PRE 3.05, POST 2.96
Computer programming — PRE 3.35, POST 3.07
Science — PRE 3.03, POST 2.89
History/Social Studies — PRE 2.71, POST 2.59
Math — PRE 2.90, POST 2.77

PRE
POST

Appendix A, Figures 11 and 12, Individual School Participants' Level of Interest in Learning Different Subjects

Figure 11 (ADV_PRE / ADV_POST):

Subject	ADV_PRE	ADV_POST
Writing	2.64	3.04
Reading	2.82	3.00
Graphic arts on the computer	3.33	3.26
Electrical or mechanical engineering	3.48	3.30
Computer programming	3.64	3.33
Science	3.62	3.56
History/Social Studies	3.06	2.89
Math	3.15	3.07

Figure 12 (CHRIS_PRE / CHRIS_POST):

Subject	CHRIS_PRE	CHRIS_POST
Writing	2.56	2.45
Reading	2.31	2.37
Graphic arts on the computer	3.10	2.83
Electrical or mechanical engineering	2.61	2.63
Computer programming	3.06	2.80
Science	2.45	2.23
History/Social Studies	2.35	2.30
Math	2.66	2.47

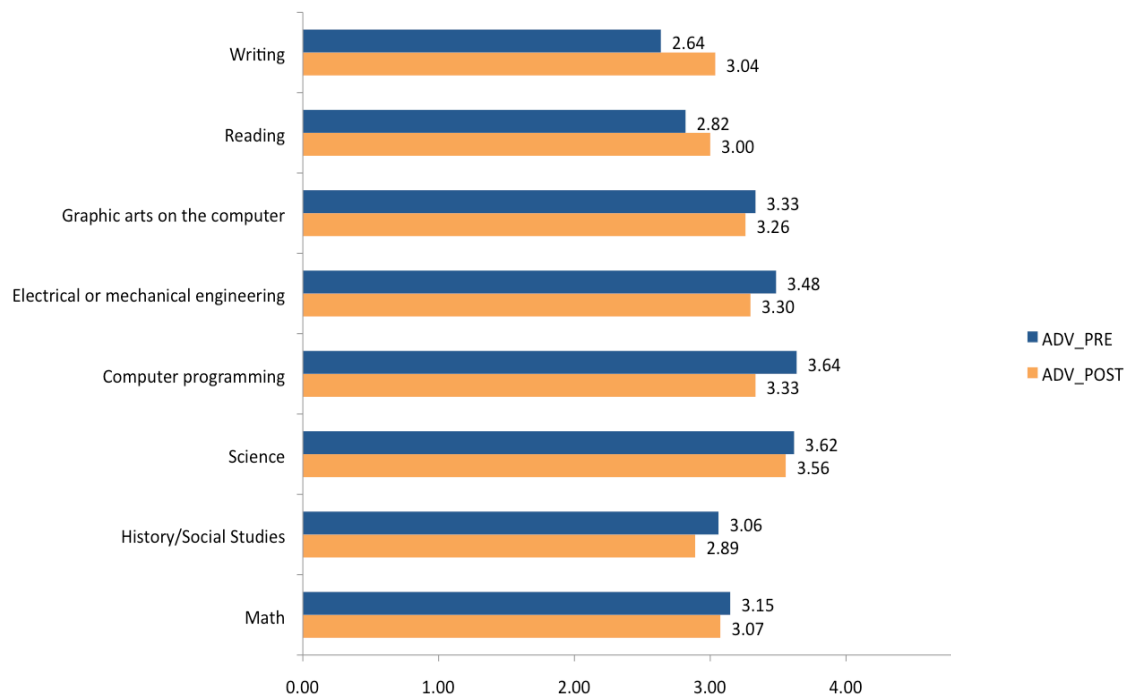How interested are you in your learning, in the following areas? (game design)

The next set of questions on the pre- and post-program survey asked students to indicate their level of interest with various game-design subject areas. The average scores in the figures below are based on a four-point scale where 1="Not at all interested," 2=Only a little interested," 3="Interested," and, 4="Very interested."

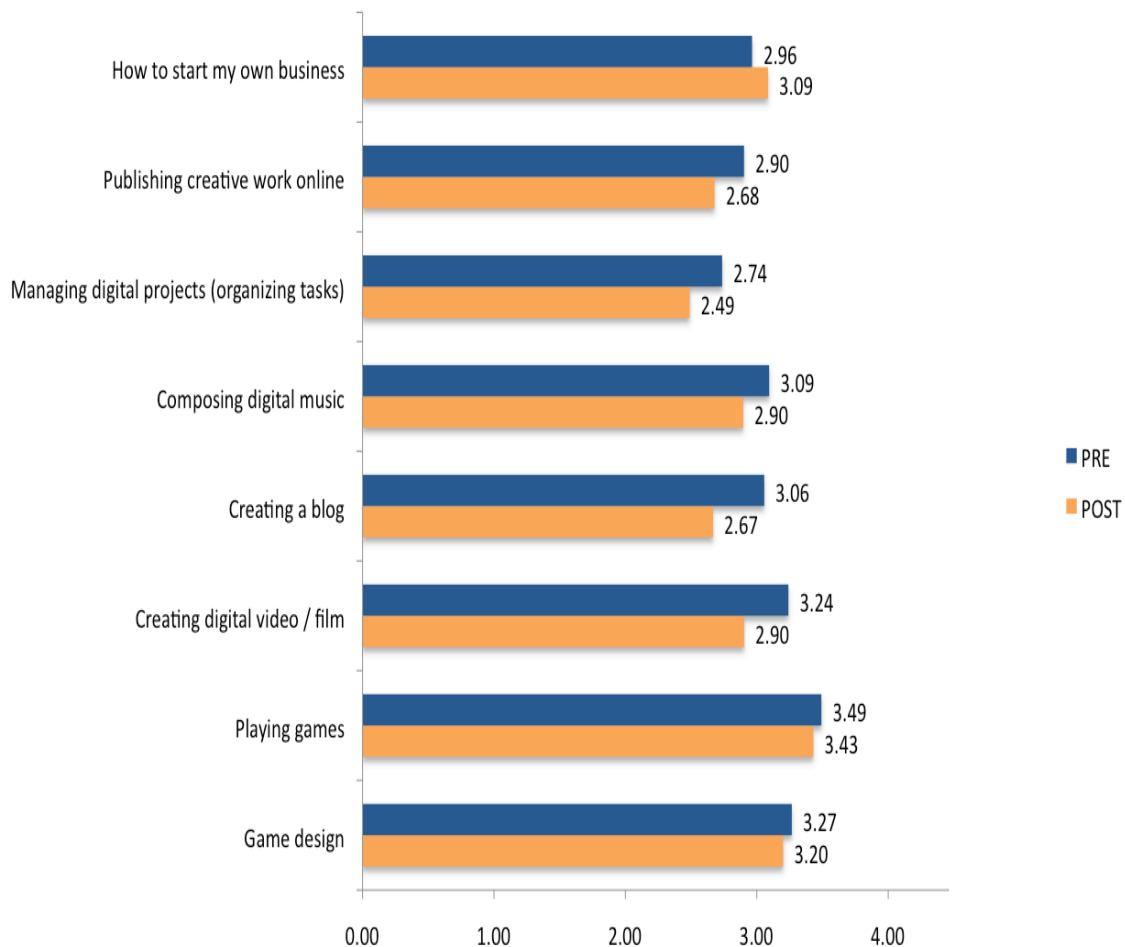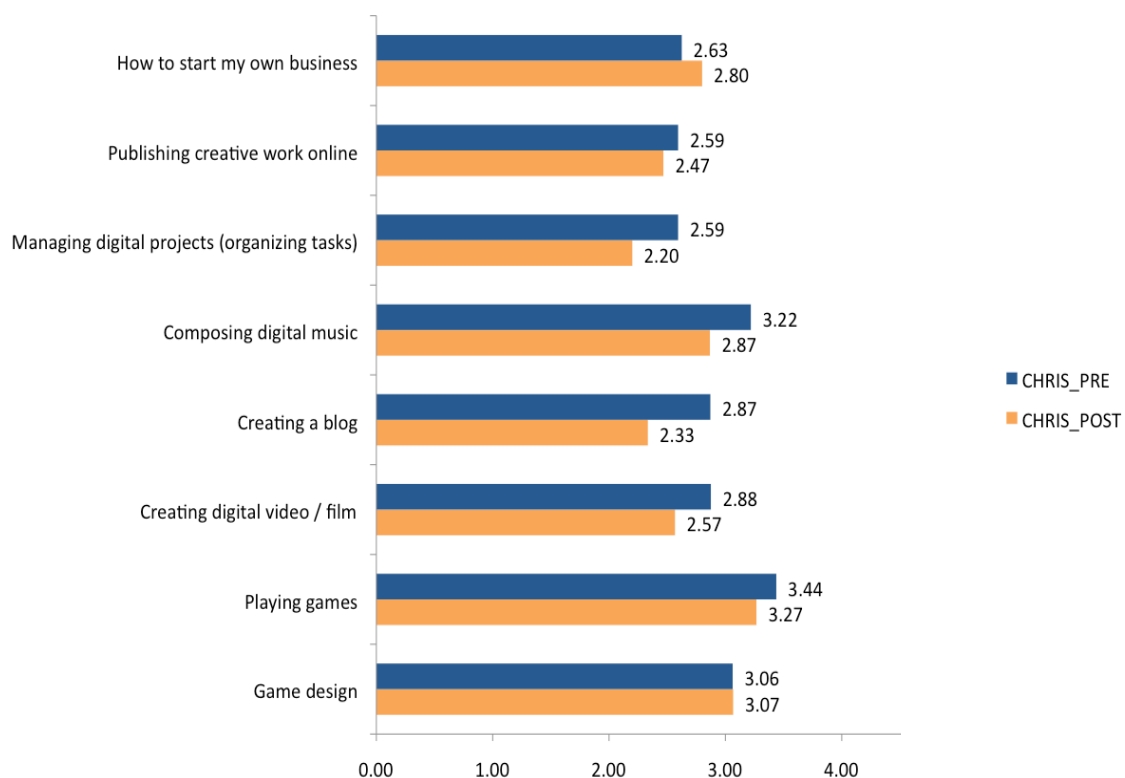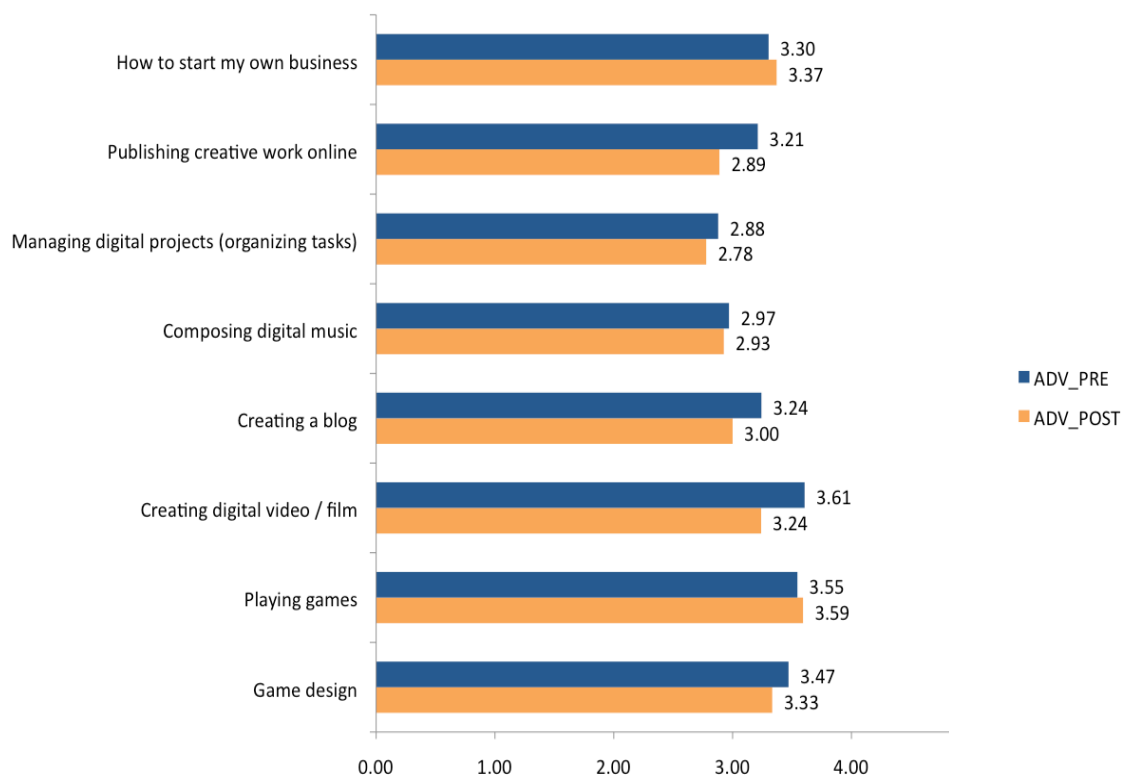**Appendix A, Figure 13: School Participants' Level of Interest in Learning Different Game Design Subjects**

Appendix A, Figures 14 and 15, Individual School Participants' Level of Interest in Learning Different Game Design Subjects


Chart 1 (ADV_PRE / ADV_POST):

Subject	ADV_PRE	ADV_POST
How to start my own business	3.30	3.37
Publishing creative work online	3.21	2.89
Managing digital projects (organizing tasks)	2.88	2.78
Composing digital music	2.97	2.93
Creating a blog	3.24	3.00
Creating digital video / film	3.61	3.24
Playing games	3.55	3.59
Game design	3.47	3.33

Chart 2 (CHRIS_PRE / CHRIS_POST):

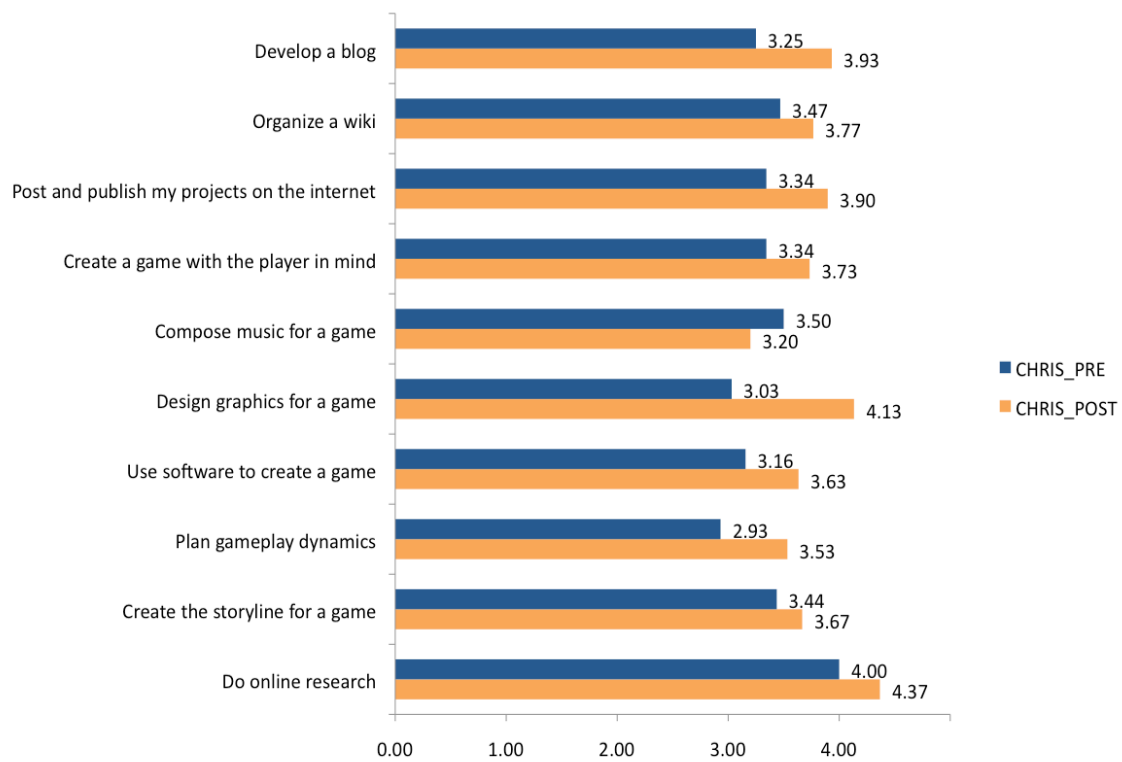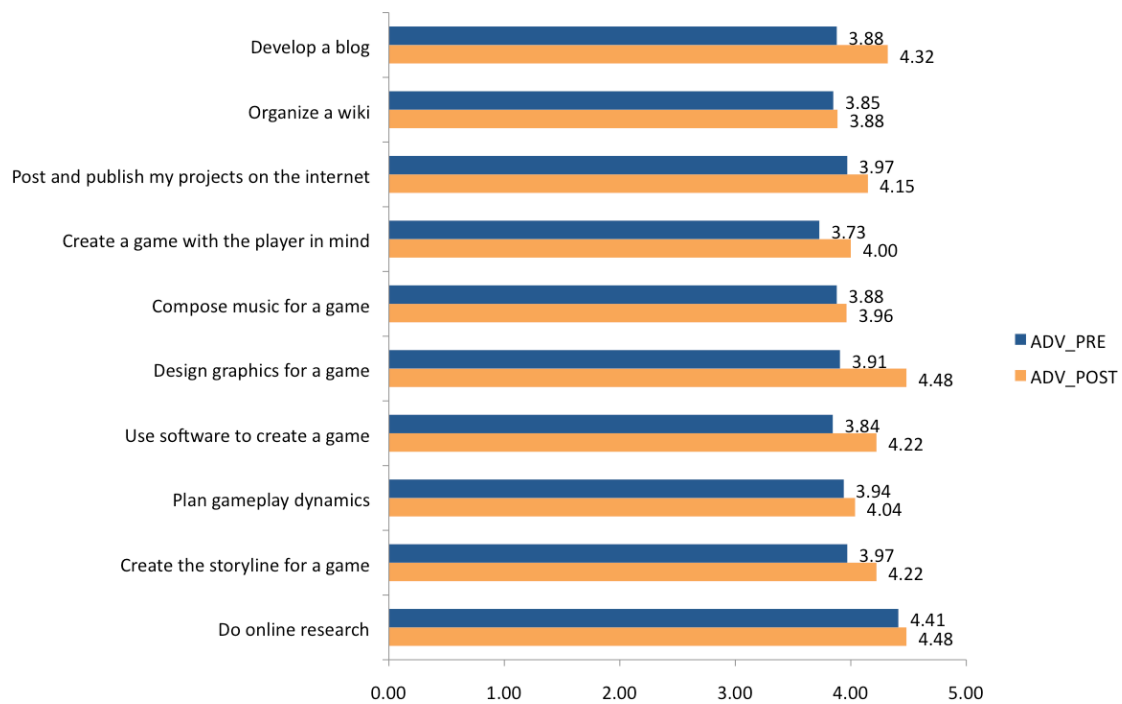| Subject	CHRIS_PRE	CHRIS_POST
How to start my own business	2.63	2.80
Publishing creative work online	2.59	2.47
Managing digital projects (organizing tasks)	2.59	2.20
Composing digital music	3.22	2.87
Creating a blog	2.87	2.33
Creating digital video / film	2.88	2.57
Playing games	3.44	3.27
Game design	3.06	3.07

Feelings of Confidence in Learning

How confident are you in your own ability to…

The next set of questions on the pre- and post-program survey asked students to indicate their level of confidence in a variety of skills. The average scores in the figures below are based on a five-point scale where 1="Cannot do at all," 2=Probably cannot do," 3="Maybe," 4="Probably can do," and 5="Definitely can do."

Appendix A, Figure 16: School Participants' Level of Confidence in their Abilities
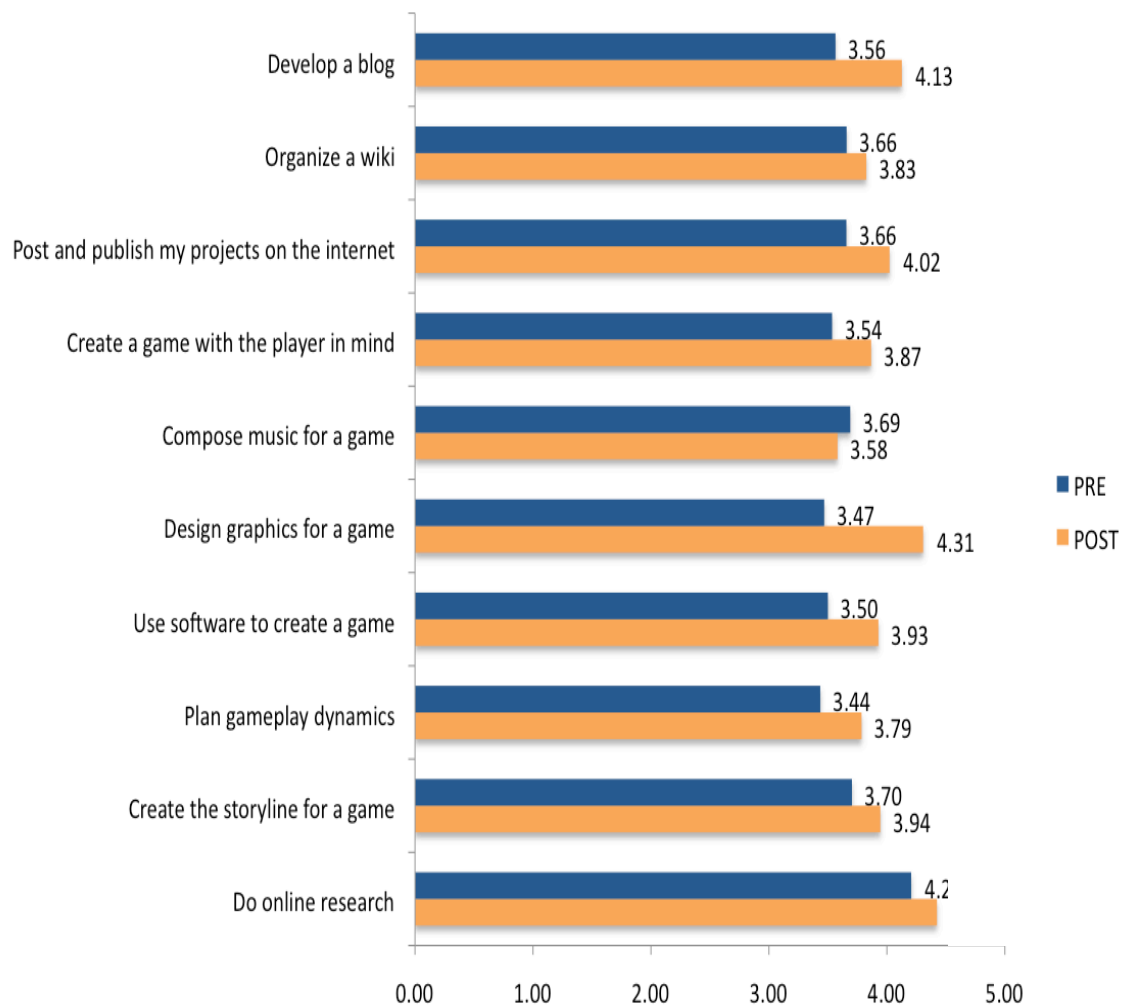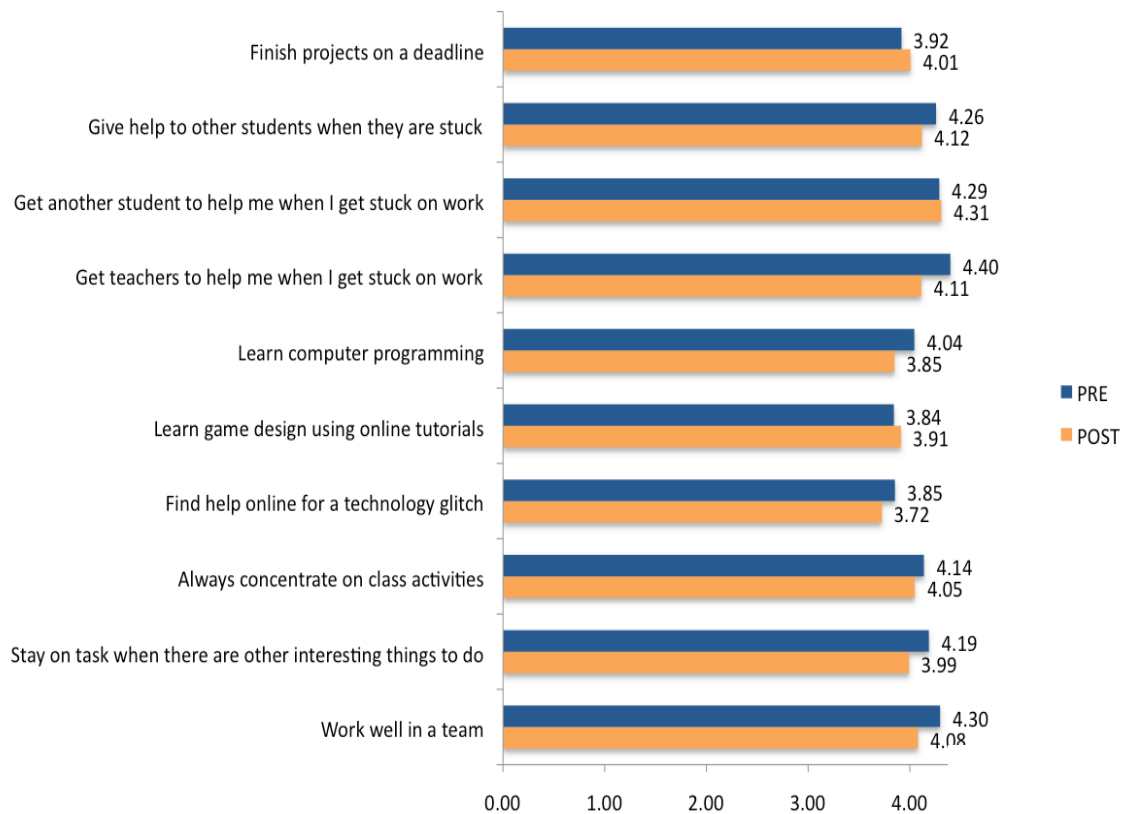
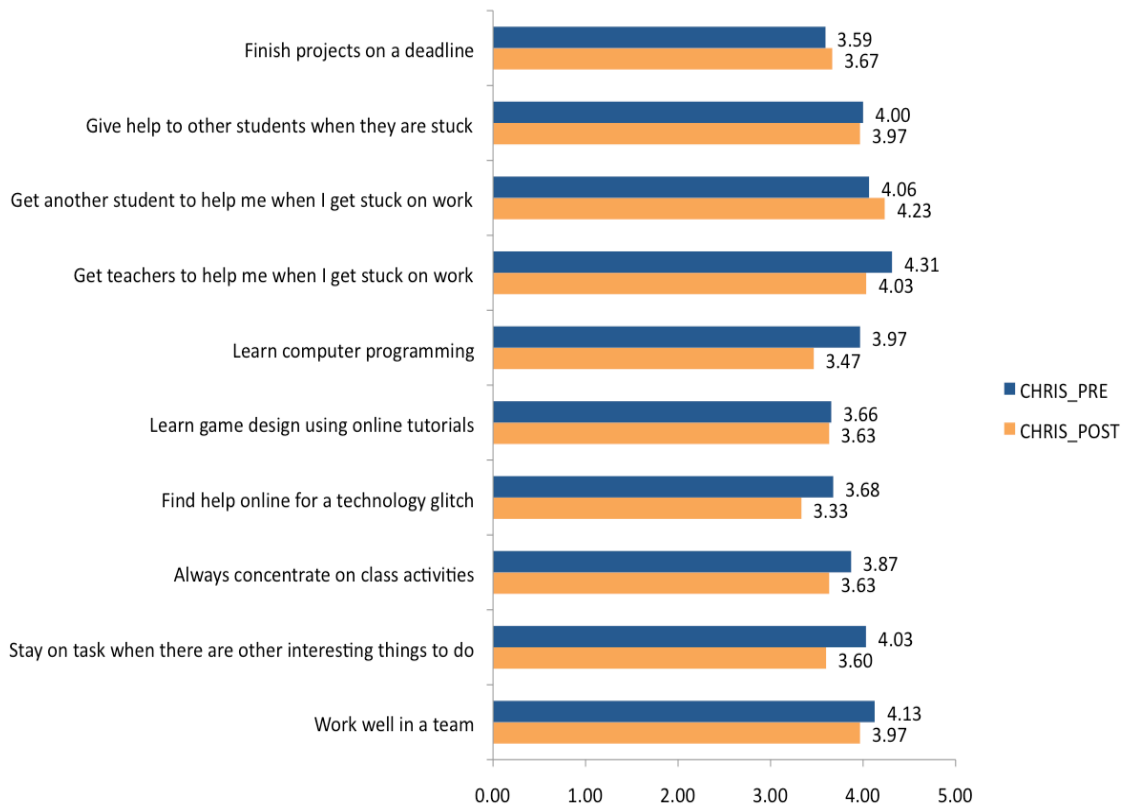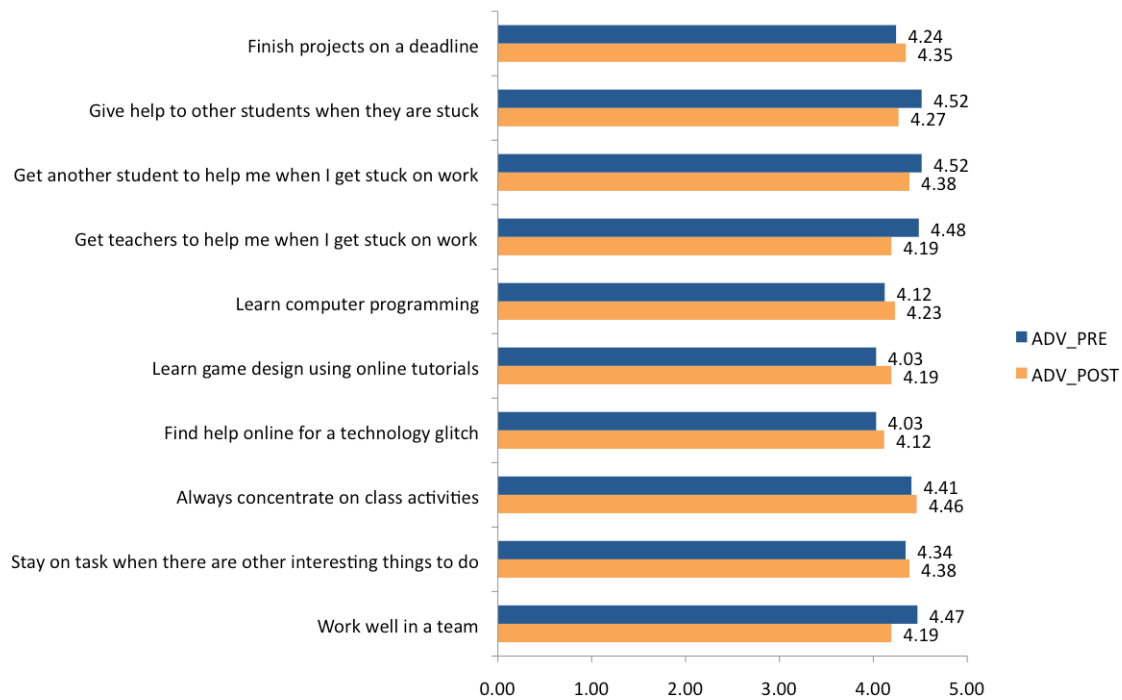## Appendix A, Figures 17 and 18, Individual School Participants' Level of Confidence in their Abilities

Figure 17 (ADV_PRE / ADV_POST):

Ability	ADV_PRE	ADV_POST
Develop a blog	3.88	4.32
Organize a wiki	3.85	3.88
Post and publish my projects on the internet	3.97	4.15
Create a game with the player in mind	3.73	4.00
Compose music for a game	3.88	3.96
Design graphics for a game	3.91	4.48
Use software to create a game	3.84	4.22
Plan gameplay dynamics	3.94	4.04
Create the storyline for a game	3.97	4.22
Do online research	4.41	4.48

Figure 18 (CHRIS_PRE / CHRIS_POST):

Ability	CHRIS_PRE	CHRIS_POST
Develop a blog	3.25	3.93
Organize a wiki	3.47	3.77
Post and publish my projects on the internet	3.34	3.90
Create a game with the player in mind	3.34	3.73
Compose music for a game	3.50	3.20
Design graphics for a game	3.03	4.13
Use software to create a game	3.16	3.63
Plan gameplay dynamics	2.93	3.53
Create the storyline for a game	3.44	3.67
Do online research	4.00	4.37

How confident are you in your own ability to… (additional)

The next set of questions on the pre- and post-program survey asked students to indicate their level of confidence in a set of additional skills. The average scores in the figures below are based on a five-point scale where 1="Cannot do at all," 2=Probably cannot do," 3="Maybe," 4="Probably can do," and 5="Definitely can do."

Appendix A, Figure 19: School Participants' Level of Confidence in Additional Abilities

Appendix A, Figures 20 and 21, Individual School Participants' Level of Confidence in Additional Abilities

Figure 20 (ADV_PRE / ADV_POST)

Ability	ADV_PRE	ADV_POST
Finish projects on a deadline	4.24	4.35
Give help to other students when they are stuck	4.52	4.27
Get another student to help me when I get stuck on work	4.52	4.38
Get teachers to help me when I get stuck on work	4.48	4.19
Learn computer programming	4.12	4.23
Learn game design using online tutorials	4.03	4.19
Find help online for a technology glitch	4.03	4.12
Always concentrate on class activities	4.41	4.46
Stay on task when there are other interesting things to do	4.34	4.38
Work well in a team	4.47	4.19

Figure 21 (CHRIS_PRE / CHRIS_POST)

Ability	CHRIS_PRE	CHRIS_POST
Finish projects on a deadline	3.59	3.67
Give help to other students when they are stuck	4.00	3.97
Get another student to help me when I get stuck on work	4.06	4.23
Get teachers to help me when I get stuck on work	4.31	4.03
Learn computer programming	3.97	3.47
Learn game design using online tutorials	3.66	3.63
Find help online for a technology glitch	3.68	3.33
Always concentrate on class activities	3.87	3.63
Stay on task when there are other interesting things to do	4.03	3.60
Work well in a team	4.13	3.97

Appendix B: Summary of Mid-Year Survey Data

A set of additional questions were administered to participants in San Jose via an online survey. The participants in San Jose also completed the program-wide mid-year survey, but only the supplemental questions answered by students in San Jose are analyzed below.

Meeting Participants' Expectations

Participants were asked to indicate if the Globaloria program was:

- As educational as I expected it to be.
- As challenging as I expected it to be.
- As fun as I expected it to be.

There was a five-point response scale where 1="Much Less," 2="A little less," 3="About the same," 4="A little more," and 5="Much more." The table below shows average responses for each question in each of the schools. The overall average includes responses from all participants, including those from the two Boys and Girls Clubs sites as well.

Appendix B, Table 1: Average Response by Site

Site Name	Fun	Challenging	Educational
AdVENTURE STEM	4.23	3.40	4.27
Christopher School	3.38	3.24	3.83
Overall	3.86	3.47	4.03

Mid-Year Response to Globaloria

Participants were also asked to indicate their level of agreement with the following questions:

- Globaloria makes me care more about school.
- Globaloria makes me work harder in school.
- Globaloria makes me care more about my community.
- Globaloria makes me think more about my future and possible careers.
- Globaloria makes me feel proud of my skills and abilities.
- Globaloria is a fun way to learn about designing games.
- After Globaloria, I plan to create more games.

There was a five-point response scale where:1="Strongly disagree," 2="Disagree a little," 3="Neither agree nor disagree," 4="Agree a little," and 5="Strongly agree." Responses are summarized in the following tables.

Appendix B, Tables 2 and 3:Average Response by Site

Site Name	care about school	work harder in school	care about community	think about my future/careers
AdVENTURE STEM	3.97	3.90	3.83	4.23
Christopher School	3.24	3.31	3.00	4.00
Overall	**3.65**	**3.68**	**3.48**	**4.13**

Site Name	feel proud of skills/abilities	fun way to learn about games	I plan to create more games
AdVENTURE STEM	4.37	4.60	3.90
Christopher School	3.93	4.17	3.52
Overall	**4.22**	**4.35**	**3.68**

Self-Rated Game Design Abilities

We were also interested in learning more about participants' emerging game design abilities – and the emergence or strength of different skills in relation to each other. They rated their ability on each of the following skills using a five-point scale where 1="Not at all," 2="Not very well," 3="Somewhat able," 4="Pretty well," and 5="Very well."

- Coming up with ideas for a game
- Picking a single idea or direction for a game
- Doing research/finding good information
- Documenting my progress on wikis and blogs
- Planning and outlining all the different parts of a game
- Building a prototype of a game
- Creating scenes in Flash
- Creating/adding sound files
- Creating/adding animations
- Adding interactive features to a game
- Creating/using programming codes and scripts
- Testing and troubleshooting a game
- Fixing problems or programming bugs
- Presenting information about a game to others.

Participants generally rated themselves to be proficient at most game design skills, (with ranging from being "Somewhat able" to "Very well" able to do each task). Self-rated ability for coming up with game ideas was highest, followed closely by doing researching, documenting progress on wikis and blogs, creating scenes in flash, and creating or adding animations to their games.

The tables below present a breakdown of self-reported skill data by site. Participants at Christopher School seem to be a bit more reserved in their self-reported ratings of abilities, while participants at AdVENTURE STEM tended to be more confident in their game design abilities.

Appendix B, Tables 4-7: Average Self-Rated Ability by Site

Site Name	Generating Ideas	Picking idea	Doing research	Wikis and Blogs
AdVENTURE STEM	4.27	3.73	4.00	4.17
Christopher School	3.66	3.52	3.72	3.69
Overall	4.04	3.70	3.92	3.89

Site Name	Planning parts	Prototype	Scenes Flash	Sound
AdVENTURE STEM	4.00	3.87	4.07	3.90
Christopher School	3.41	3.34	3.72	2.79
Overall	3.73	3.66	3.86	3.34

Site Name	Animations	Interactive features	Codes and Scripts
AdVENTURE STEM	4.07	3.93	3.53
Christopher School	3.86	3.34	3.48
Overall	3.82	3.65	3.49

Site Name	Troubleshooting	Fixing problems	Presenting information
AdVENTURE STEM	3.77	3.30	3.80
Christopher School	3.03	2.59	2.93
Overall	3.38	3.01	3.56

Appendix C: Supplemental Mid-Year Survey Instrument

GLOBALORIA Mid-Year Survey

First Name: Last Name:

At which site do you participate in Globaloria?

1. So far, Globaloria has been:	Much Less	A little less	About the same	A little more	Much More
a. As fun as I expected it to be.	O	O	O	O	O
b. As challenging as I expected it to be.	O	O	O	O	O
c. As educational as I expected it to be.	O	O	O	O	O

2. So far, how would you rate your ability to do the following game design tasks:	Not at all	Not very well	Somewhat able	Pretty Well	Very Well
a. Coming up with ideas for a game.	O	O	O	O	O
b. Picking a single idea or direction for a game.	O	O	O	O	O
c. Doing research/finding good information	O	O	O	O	O
d. Documenting my progress on wikis and blogs	O	O	O	O	O
e. Planning and outlining all the different parts of a game	O	O	O	O	O

	Not at all	Not very well	Somewhat able	Pretty Well	Very Well
f. Building a prototype of a game	O	O	O	O	O
g. Creating scenes in Flash	O	O	O	O	O
h. Creating/adding sound files	O	O	O	O	O
i. Creating/adding animations	O	O	O	O	O
j. Adding interactive features to a game	O	O	O	O	O

	Not at all	Not very well	Somewhat able	Pretty Well	Very Well
k. Creating/using programming codes and scripts	O	O	O	O	O
l. Testing and troubleshooting a game	O	O	O	O	O
m. Fixing problems or programming bugs	O	O	O	O	O
n. Presenting information about a game to others.	O	O	O	O	O

3. How much do you agree with each of the following statements:	Strongly Disagree	Disagree a little	Neither agree nor disagree	Agree a little	Strongly Agree
a. Globaloria makes me care more about school.	O	O	O	O	O
b. Globaloria makes me work harder in school.	O	O	O	O	O
c. Globaloria makes me care more about my community.	O	O	O	O	O
d. Globaloria makes me think more about my future and possible careers.	O	O	O	O	O
e. Globaloria makes me feel proud of my skills and abilitiles.	O	O	O	O	O
f. Globaloria is a fun way to learn about designing games.	O	O	O	O	O
g. After Globaloria, I plan to create more games.	O	O	O	O	O

4. What have you done so far in Globaloria that you are most proud of this year?

5. Do you have any other comments or suggestions for improving Globaloria?

Appendix D: Check-in Call Interview Protocol

January Check-In Call:

1. Thanks for taking time to meet with me. I wanted to start by getting a brief update on how things have been going with Globaloria since the visit in November.

2. What have been your class's (group's) greatest successes so far this year?

3. Have you faced any challenges? (if so, what steps were taken to overcome them/have they been resolved?)

4. Can you think of any recent examples or anecdotes that would help someone understand your experiences with Globaloria this year?

April Check-In Call:

1. Thanks for taking time to meet with me. I wanted to start by getting a brief update on how things have been going with Globaloria since we spoke earlier this year.

2. Have all of the teams completed their games?

3. Have there been any great accomplishments/break-throughs since the start of the year?

4. Tell me a little about the trip to Adobe – what was your opinion of that experience, how did the student's respond or react to that opportunity?

5. Have there been any challenges faced as the kids have worked toward completing their games?

6. Are there any specific anecdotes or stories that stand out in your mind that would help to illustrate your experiences with Globaloria this year?
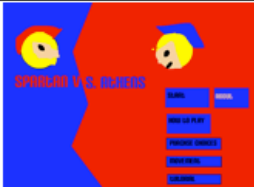
Appendix E: Example of Online Data-Collection Rubric

The following image represents the rubric that was used to collect data from students' wiki's and blogs. Using an online spreadsheet we also tracked the number of blog posts for each participant.

Team		Points	Notes
	Shin	63800	LOTS of pics on webpage, great blog entries
Awesome Dalek Battlers	Matthew	19650	**Making Decisions as a Team:** At first, we thought it would be easy, it isn't.
	Calvin	23550	**Adding Easter Eggs:** this week i hid a bunch of fun items in my game that had no effect. such as clicking on a crack with lava seeping out would make the lava pour out onto the ground.
Killer Robots Great Video of Paper Prototye	Justin	42100	Great blog entries/Group Dynamic issues reported on wiki/in blogs The best part about the game is playing with flash.In class we learn how to make scenes,buttons, and other fun tools. The most challenging .part is the action script.You have to get everything exactly correct. Is hard, but fun .**You have to be patient because it takes a lot of time to get it correct.**I recommend it under conditions that you can do anything because it is fun and you can learn. You can also learn to be patient. My favorite part about this game is using technology. The T in STEM stands for technology.
	Joel	39600	I am going to try to finish my part of my game a few days before the presentation date. It will help so if I see a mistake in my part of the game, I will have time to fix the mistake.
	Zackary	33750	Lots of pics on wiki Comment re: review I think the guy was right with some stuff that we need more animation and other stuff. These guys are the big people so i have to agree with some but not all.