

CAHSI Reshape the Image of Computing Panel Workshop

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January 2009

I. Introduction

The Computing Alliance of Hispanic Serving Institutions (CAHSI) is a partnership of universities serving primarily an Hispanic population of students. CAHSI has identified and implemented several programs focused on recruiting, retaining and advancing Hispanic students in computing degrees in order to increase Hispanic involvement in the computing industry as well as academia. In addition, CAHSI holds an annual meeting focused on bringing together Hispanic students and professors to discuss challenges faced by Hispanic students, to share approaches for success by Hispanic faculty and industry leaders, as well as brainstorming on ideas for improving the initiatives that academia has in recruiting, retaining and advancing Hispanic students to higher academic degrees within computing fields.

The New Image of Computing (NIC) is an initiative sponsored by ACM and WGBH (the Public Broadcasting Affiliate Station in Boston, MA) and centered on reshaping the general view of computing and computer related degrees for teens. NIC has focused research in understanding the motivations that affect recruitment of entering freshmen and teens making career decisions. Recently, NIC conducted a survey with young teens, ages 15 to 17, to understand how useful they felt a computing degree was as a way to achieve their goals. What NIC found was that few teens even considered computing as a possibility because they were unaware as to what a degree in this field meant. As a result, NIC came up with a set of slogans to promote computing and reshape the image of computing as viewed by young teens and incoming university prospects. NIC is currently considering the best medium for disseminating the slogans to a teen audience.

During the 2009 CAHSI Annual Meeting, an opportunity was taken to brainstorm with attending students and have them consider their motivations for choosing computing as a degree, to discuss NIC slogans, and to discuss the optimal mediums for communicating the slogans to Hispanic teens. This was done in the form of a panel-based workshop titled Reshape the Image of Computing Panel Workshop, held for undergraduate CAHSI attendees. This paper will discuss the workshop format, the initial panelist statements, the group discussions and some observations from the workshop.

II. Reshape the Image of Computing Panel Workshop

In order to achieve a high level of input, the workshop was designed to be interactive requiring participation from a small panel as well as the entire audience. The workshop was broken up into three segments. First, in order to unify thoughts and consider a starting point for discussions, four students were chosen from CAHSI partner universities to serve as the panel. Each student introduced themselves and answered four questions that focused on their motivations and ideas in an open dialog with the audience.

The panelist questions were:

1. What were your motivations for choosing computer science as a degree?
2. Discuss mentors, organizations, projects, classes or events that most affected your decision to enter or stay in computer science.
3. What would you tell a teen what computer science is?
4. What are the technologies that you think most teens use to communicate right now?
This is to consider how you could reach them.

Next, the audience was broken up into four groups with each group led by a panelist. There were approximately 10 to 15 students per group. Each group was assigned a slogan provided by NIC and asked to discuss the slogan, their interpretation of what it meant and to discuss how they would disseminate this slogan to reach teens. The Group Discussions section will go into more detail as to the exact slogans, the discussions and proposed disseminations of slogans per group.

Finally, the third segment of the workshop involved each group presenting their discussion and solution to the entire audience and allowing for questions to be posed to the group from the audience. The dynamics of the workshop kept the students engaged and promoted participation from a diverse group of Hispanic students who have already experienced the question of considering computing as a viable career decision.

III. Panelists

This section gives a short answer list for each question addressed by each panelist. The goal of this section is to present a summary of what initial ideas were discussed with the audience before they broke out and discussed each slogan. The notes for this section were taken from individual video-recorded interviews after the workshop. One of the panelists was not available for the individual interview; therefore, the notes are not reflective of her comments.

1. What were your motivations for choosing computer science as a degree?
 - I was considering how I could work for big corporations.
 - I wanted access to summer internships.

- I noticed that computing was an area that provided funding for school.
 - I liked math and wanted a challenging area.
 - I just wanted to understand how computers worked. They seemed interesting.
2. Discuss mentors, organizations, projects, classes or events that most affected your decision to enter or stay in computer science.
- When I began to do research I realized that computing was not an isolated job. It became more interesting for me.
 - Learning C++ was difficult, and I considered changing degrees, but a faculty member encouraged me not to give up.
 - When I considered graduate school, a female faculty member shared with me her struggles while she studied. She helped me see an advanced degree as an investment for me and my kids.
 - Participation in organizations like ACM helped me feel more interested and involved.
 - Interesting classes like Advanced Object-Oriented Programming and Software Engineering confirmed for me that this was right for me.
3. What would you tell a teen what computer science is?
- Anything you want it to be-- it can be sculpted.
 - A puzzle that you put together-- you find the parts and make things.
 - Computer Science is where it all comes together; technology is dependent on advancements in computing.
4. What are the technologies that you think most teens use to communicate right now?
This is to consider how you could reach them.
- Social networking tools like Facebook, MySpace and SecondLife
 - Internet based technology – webpages
 - TV
 - Billboards like at bus stops
 - YouTube

IV. Group Discussions

Before breaking out into group discussions, the three slogans provided by NIC were presented to the audience. The NIC provided slogans were:

- **Computing puts you in the driver's seat.** Why merely create a MySpace page when you can create the next MySpace? Computing gives you the power to imagine new languages, new worlds, new ways of improving our lives by putting better ideas into actual practice in our communities.

- **Computing opens doors.** With eight billion computers in the world, just about everything depends on computers today. From transportation and energy to video games and space exploration, few careers enjoy so many real-world applications and few open as many doors as computing.
- **Computing empowers you to do good.** With computing, you will be able to connect technology to your community and make a world of difference – reducing energy consumption, improving health care, enhancing security, reducing pollution, and advancing learning and education.

There were four groups created to discuss slogans. Students could choose the slogan that was of most interest to them and move into that discussion. The size of the groups was relatively equal in both the number of students and the distribution of male and female participants, except for group 4. Group 4 was focused on female teens and the group participants were all female, and there were only about 8 members. Each group was asked to discuss the slogan and their interpretation of what it meant and to discuss how they would disseminate this slogan to reach teens. The following is an overview of the discussions as presented by each group:

Group 1: Computing empowers you to do good.

The group decided that they would prefer to drop the “to do good.” Their argument was that “to do good” was a given and by adding this to the slogan it lost some “pizzaz.” They focused their solution on “Computing empowers you.” This group felt that leveraging known icons like HP or IPODs was a good mechanism to support this slogan. They stated that many people don’t realize the power that was needed to create well known products that people like and use every day. Their proposal was to show the icon and then the “face or faces” of the innovators that created the solution. The group felt that these innovators were empowered and the results were products that are also well known.

This group felt that the best way to disseminate the message to teens was through some type of non-intrusive messaging like websites, TV, flyers and billboards.

Group 2: Computing opens doors.

This group did not come up with additional comments on the slogan. This group decided that using cell phones with text messaging and the Internet or social networking sites like Facebook and MySpace may not necessarily be a good avenue for reaching teens. They also thought that making fun video games that stress the fun in computing would be interesting for teens. The audience had a concern as to video games being more focused on males as well as the possible cost incurred from text messaging.

Group 3: Computing puts you in the driver’s seat.

These students found this slogan fun and interesting. As part of the presentation, the students drew a single small road with different milestones on the side of the road; the milestones were the achievements and coursework along the path. The driver of the bus represented faculty or advisors who take the student through the path. They drew students in different positions along the road, including some upside down, to represent the idea that there is a lot of diversity in students of computing. At the end of the road they drew a finish line representing graduation and several paths and cars leading out. These paths represented the many choices that computing students have once they graduate because of their degree choice and the ability to apply computing knowledge to many areas in the professional world. The drivers of the cars were the individual students representing the fact that the choices and directions are now in the hands of the student.

This group felt that the best way to disseminate the message to teens was to have a website or flyers with the drawing they presented as the theme. They also felt that it was very important to be honest and use outreach to attract students.

Group 4: Computing puts you in the driver's seat (female focus).

Since there were only three slogans and we were concerned with group size, we decided to create a second version of one slogan and focus it on women. Randomly, "Computing puts you in the driver's seat" was chosen. Although students had an opportunity to participate in any group, this was the only all-female discussion group. In general this group did not find this message as a good slogan for women. In fact, they took a totally different route and focused on another slogan. These women drew the Borromean Rings to include communication, creativity and cooperation as being the three keys to working with women. As stated by Dr. Dan Atkins, *"The three [Borromean] rings taken together are inseparable, but remove any one ring and the other two fall apart. Because of this property, they have been used in many fields as a symbol of strength in unity."*

As a result, although they felt that using technology to disseminate the needed messages to women, they were adamant as to the need for a hands-on, one-on-one approach. They recommended teen workshops focused on females, group meetings, etc. and stressed the importance that this type of approach had on them. Their feelings were that women are more interactive and social and events and environments that support their innate creativity and social needs would attract them more than those that focus on "driving" or even video games. This group felt that outreach and embracing their unique characteristics as females was key.

V. Conclusion

The interactive workshop was full of interest and collaboration among the students. The group discussions were abundant with ideas and comments about the slogans and how to best disseminate them to teens. As a result, we made three observations related to the discussions. First, students did not just accept the messages or slogans that they were given. In fact, two of the groups felt that there were some changes needed. Group 1 felt that adding a “do good” comment to their slogan was unnecessary and would even cause a loss of interest to the message. Group 4 felt that “driver’s seat” was too focused on males and would prefer to have slogans that focused more on the female creative and social side. Second, all groups had ideas about how to disseminate the message, but some were more concrete as to why some methods would not work. For example, Group 1 felt that text messaging was intrusive and that a more non-intrusive messaging should be used, such as websites or TV. Group 2 and 3 felt that the choice of medium needed to be personal; not a general message. Group 4 felt that using technology was not the best way to attract female teens and that a hands-on social approach should be taken. Finally, although the room was filled with mostly a single demographic of Hispanic undergraduate students, there was diversity in ideas, interest and experiences. The most important observation in this workshop was the benefit of interactively engaging this audience to contribute their thoughts on how to recruit a future generation of students to the area of computing, resulting in a diverse and creative collection of ideas.

A video of interviews of panelists and selected participants from each group captures the viewpoints from the workshop. It is available from the main page of the CAHSI website (<http://cahsi.org>) or directly at: <http://www.vimeo.com/3768490>.

Acknowledgements:

We would like to thank Mr. Ben Wiehe, Project Director New Image of Computing (NSF Award #CNS-0753686) for his input on NIC and the slogans used within the workshop. In addition, we thank Dr. Ann Gates, UTEP, CAHSI PI for her direction on this workshop and the collection of related data. This was a CAHSI supported project (NSF Award #CNS-0540592).