

## FACTORS INFLUENCING COMPUTER SCIENCE PARTICIPATION: INTRODUCTORY STUDENTS DESCRIBE WHAT LED THEM TO COMPUTING

All Georgia institutions offering introductory computer science courses were asked to administer a survey to their introductory computing students in Spring, 2010. Of the 35 colleges and universities in Georgia, 29 offer computer science coursework, and 19 participated in the survey. In total, 1,434 introductory computer science students completed the survey.

One item asks students, “Was there one experience in your life that has drawn you to study computing?” and gives those students who respond “yes” the opportunity to identify this experience. Overall, 252 (17.6%) students responded “yes,” and they attribute their interest to a wide variety of factors categorized below.



<p><b>Social circumstances:</b> These students attributed their interest in computers to friends or family members, or having had access to computers at an early age, or some combination of the two. In total, 79 of the 252 students (31%) that defined their experience indicated that social circumstances were the cause of their interest. This was the most often cited factor influencing student interest in computers.</p>
<p><b>Play:</b> These students attributed their interest in computers to gaming of some sort or another. 46 of the students (18%) fell into this category.</p>
<p><b>Specific Event:</b> These students attributed their interest in computers to a specific course or teacher, to a specific language or application, or to a specific work experience. In comparison with the other factors that were broader in scope, this category includes those students who indicated a single, identifiable event or factor motivating them to study computers. In total, 78 of the 252 students (31%) indicated a specific event led them to study computers.</p>
<p><b>Socio-Technical Capital:</b> These students attributed their interest in computers to their potential to gain socio-technical capital through this pursuit. For instance, some of these students were concerned with their careers and chose computing as a means to solidify their employment potential, while others enjoy the utility and prestige associated with this technical capability. 35 of the students (14%) fell into this category.</p>
<p><b>Innate Talent or Curiosity:</b> These students attributed their interest in computers to an inherent ability to understand or fix computers, or to an innate curiosity about how they work. 14 of the students (6%) used this reason to explain their pursuit of computer science.</p>

The responses collected were thus categorized and analyzed for their relevance to the following questions from the evaluation plan:

“Do students participating in workshops express positive attitudes toward computing, contextualized computing, and careers in computing?”

Those students that cited a specific event as their cause for pursuing computer science are evidence of the fact that students that participate in workshops express positive attitudes towards computing as they have chosen computing as a field of study. Of these students, 31% actually defined their experience as a specific event, including participation in courses and workshops; 23 of these identified middle school, high school, and enrichment activities as their motivating event. One response identified “ICE @ Tech,” and two others pointed to Governor’s Honors Programs as their motivating factors for studying computing. Thus, some students who participate in workshops and summer programs do indeed have a positive attitude towards computing, as they have chosen CS for their careers and furthermore attribute this choice to their participation in these programs.

Has the program generated an increase in the number and diversity (diversity = gender, race, and ability) of students pursuing careers and post-secondary education in computing?

Factor	# of responses		
Social Circumstances: Family and Friends	50	34 (68%)	16 (32%)
Social Circumstances: Access	29	25 (86.2%)	4 (13.8%)
Play	46	42 (91.3%)	4 (8.7%)
Specific Event: Middle School Teacher or Course	4	1 (25%)	3 (75%)
Specific Event: High School Teacher or Course	15	10 (66.7%)	5 (33.3%)
Specific Event: College Teacher or Course	13	9 (69.2%)	4 (30.8%)
Specific Event: Enrichment Course or Activity	4	3 (75%)	1 (25%)
Specific Event: Program, Language, or Application	29	24 (82.8%)	5 (17.2%)
Specific Event: Work Experience	13	11 (84.6%)	2 (15.4%)
Socio-Technical Capital: Career	7	4 (57.1%)	3 (42.9%)
Socio-Technical Capital: Utility	28	20 (71.4%)	8 (28.6%)
Innate Talent or Curiosity	14	11 (78.6%)	3 (21.4%)
<b>TOTAL</b>	<b>237</b>	<b>177 (74.7%)</b>	<b>60 (25.3%)</b>