STEM Outreach Workshop Report

Sponsored by:
Army High Performance Research Center

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Project Overview: The goal of the outreach program is to find methods of teaching to interest middle school students to excel in math and inspire them to enter a science or technology field when they leave high school.

Workshop Objective: This workshop was designed to assist in the understanding of how middle school students prefer to learn math. Several examples and tools were showed and the students were asked their thoughts on the relevance and usefulness of the examples, and if they would like to see them in the classroom. The feedback gathered will assist the team in determining the best approaches to catch students' interest.

Schedule: See attached documents (Only followed)

Materials Used:

1. Computers (one per pair of students)
2. Projector
3. PowerPoint Presentations (in attached documents)
4. White Board and Markers
5. Handouts (in attached documents)

6. Feedback Forms (in attached documents)
7. Pencils (one per student)
8. Rubik's Cubes (For Rubik's example and as gift for attending)
9. Snacks (For Break in the middle of the workshop)
10. Certificates (Given to students for participating in the workshop)

Summary of the feedback results:

The group of students seemed to like the set of examples and tools that were presented to them. However, in the case of examples, some of them were more successful than others. The Rubik's cube example was the highest rated, followed closely by the instant messaging example, the genetics example and the combinations example. Conversely, for the tools, the results were somewhat inconclusive because, some of the students forgot to give them a rating, which caused the tools to come close to each other in the ratings.

Evaluation:

The interaction with the students was excellent. Students were engaged and participated by providing brilliant answers to some of the exercises; they asked a great number of interesting questions as well. Furthermore, students responded exceedingly well to the tools selected for the workshop. They liked the idea of using the tools in their classrooms and homes.

Although the workshop was a success in general terms, some things could be improved for future workshops. First, there were some minor last minute preparations that delayed the start of the workshop for a few minutes. Better preparation will prevent the problem in future workshops. Second, the feedback forms were overwhelming for some students. A simpler and cleaner design for the feedback forms is in order. Third, some of the students fell behind or got a little distracted during the workshop; this was mainly due to the lack of more facilitators. Thus for future workshops more facilitators will be used.

A set of new ideas that could make the workshop even better includes a mobile lab of ten laptops that would allow for a better, more effective arrangement of seats for the students, the creation of tools for permutation and combinations, and ways to interest students in the field of Computer Science.