Middle-school students educate community on proper computer posture

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Move over, boy bands of America—there's a new group in town. Four middle-school students from Carmel Valley Middle School in San Diego, California, entered The Christopher Columbus Awards Competition, a science, technology, engineering, and math (STEM) program that challenges middle-school students to identify a community problem and solve it using science and technology. Taking a cue from the popular group the Backstreet Boys, the students call themselves the Back Straight Boys. The Boys took first place nationally and are presenting their study at the upcoming Human Factors and Ergonomics Society 55th Annual Meeting at the Red Rock Hotel in Las Vegas.

After experiencing firsthand the discomfort that computer use can cause, Sean Colford, Ethan Epstein, Brandon Loye, and Michael Walsh, now in their freshman year at Canyon Crest Academy in San Diego, decided to study improper posture at computer workstations and the consequent musculoskeletal problems among children and adults in classrooms and offices.

"We noticed that at school, all the computer workstations were the same size, but Ethan and I had a fifteen-inch difference in height," said Loye. "I had to hunch my back to see the monitor, and Ethan had to sit on his legs. This caused us discomfort, and we thought we could do something about it."

The Boys conducted preliminary human factors/ergonomics research to determine the scope of their community's improper posture problem by

evaluating local employees and students. "We found this problem to be ever present in our schools, the workplace and even our homes," reported Ethan. They found that 80% of office workers and 75% of students sat at their computer workstations with incorrect posture. Based on these findings, the boys developed and tested their unique invention, the "Posture Pad," an ergonomically designed seat pad that vibrates or emits a tone when the user sits incorrectly.

The Boys received a $25,000 grant to turn their idea into reality. Working in collaboration with students at the University of California, San Diego, the team further developed the Pad prototype. They are currently working on a pilot project with mentor Karen Jacobs, PhD, at Boston University to test its effectiveness.

"Our grant money has been used not only to further develop our prototype, but to do a lot of education about ergonomics and posture to kids, teachers, and families in our communities," said Colford.

The contest and ensuing pilot project have become an exciting opportunity for the Boys and their classmates to learn about the human factors/ergonomics discipline. "I learned that I really liked problem solving from this project," said Michael Walsh. "No matter what type of problem that came up, it was fun to find solutions."

Provided by Human Factors and Ergonomics Society