Testimony of Phil Mickelson

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Congressman Miller, members of the committee, thank you for having me here today to discuss the importance of math and science education.

While it may be my role as a professional golfer that got me an invitation to this witness table today, it's my role as a parent that drives me to support math and science education and tackle the growing need to prepare the next generation of scientists and engineers.

Parents play a crucial role in underscoring the value of education to their children. Since I can remember, my parents instilled in me the importance of my education while showing an unwavering support of my golf career. They were there to share with me the thrill of winning my first major title at the Northern Telecom Open in 1991 as an amateur, while continuing to insist that I complete my degree in psychology.

As a parent now, my wife Amy and I recognize the role we play in instilling in our kids the value of education while inspiring their natural curiosity about the world around them. And it's largely through math and science that our children explore their surroundings and discover what interests them.

Several summers ago, our daughter Amanda was given the opportunity to choose what summer camp she wanted to attend, and living in southern California, her possibilities were endless.

She chose to go to science camp and she had the greatest week of her life. She ended up being the only girl in the entire camp and had the opportunity to dissect a squid and write her name in the ink. It was an experience that has propelled her interest in science, and we hope that she will continue to embrace it.

As we travel across the country for the PGA tournament, we often visit museums along the way, stopping to visit exhibits like Bodies -- The Exhibition in Phoenix, the Rainforest exhibit at the Dallas World Aquarium and the Rose Center at the American Museum of Natural History in New York. We continue to find ways to encourage our children's education, and strive to take advantage of the teachable moments with math and science.

And I recognize that it's my role as a professional golfer that has given me the opportunity to give back and support education initiatives across the country. Amy and I support a broad range of educational programs through our foundation, but math and science education are at the forefront our of education support.

A few years ago, I was playing golf with some key business leaders who told me that the number of science and engineering graduates had been dropping in the United States, while rising rapidly in other countries. Recognizing that our status as a scientific leader in the world is at jeopardy unless something is done to address this issue, my wife Amy and I committed ourselves to finding a way to way to help develop the next generation of science-savvy citizens and reverse this trend.

After doing some additional research about the conversation we'd had on the golf course that day, Amy and I were startled by the statistics.

- The Organization for Economic Cooperation and Development had ranked the math skills of students in Hong Kong, Finland and South Korea at the top of the list, while U.S. teens ranked 28th out of the 40 countries evaluated.
- According to National Center for Education Statistics, 93% of students in grades 5-9 were taught physical science by a teacher lacking a major or certification in the physical sciences (chemistry, geology, general science, or physics).
- According to the National Center for Education Statistics, less than 1/3 of U.S. 4th and 8th grade students performed at a proficient level in mathematics and even 1/3 of 4th graders and 1/5 of 8th graders lacked competence to perform basic math functions.

Additional studies, including the National Academies of Science report, Rising Above the Gathering Storm, illustrated the immense challenges we face in order to bolster our education in math and science to maintain our competitive advantage.

In their report, the blue-ribbon panel with the National Academies of Science found that:

- Only 29 percent of 4th grade students, 32 percent of 8th grade students, and 18 percent of 12th grade students performed at or above the proficient level in science;
- Almost 30 percent of high school mathematics students and 60 percent of those enrolled in physical science have teachers who either did not major in the subject in college or are not certified to teach it;
- The U.S. ranks 16th of 17 nations in the proportion of 24-year-olds who earn degrees in natural science or engineering as opposed to other majors; and,
- Those undergraduates who switch from science and engineering majors to other majors "are often among the most highly qualified college entrants, and they are disproportionately women and students of color."

Amy and I knew we wanted to do something to support math and science education, but we also knew that in order to have the impact we were looking for, we couldn't do it alone. We wanted to find partners that had taken the lead in supporting math and science initiatives and were committed to developing the next generation of science-savvy citizens.

At the time, I was in discussions with ExxonMobil regarding their sponsoring me as a PGA player. As I learned more about the company that I would be working with, I was encouraged to hear more about ExxonMobil's long-standing commitment to supporting education and their dedication to developing opportunities to contribute to education initiatives, particularly in science, technology, engineering, and math (STEM) from pre-school through college.

As a company, ExxonMobil has been a pioneer in developing and supporting math and science programs through such influential organizations as the National Science Teachers Association and the Mathematics Association of America.

And as the employer to more than 14,000 scientists and engineers, I knew that ExxonMobil had a vested interest in encouraging the next generation to pursue careers in math- and science-related fields. So as part of my sponsorship, we began to discuss ways we could work together to develop a program to address this critical issue.

While there are a broad range of areas that we could support, we wanted to address one of the most importance pieces of the education picture: teachers. As parents, Amy and I believe that continually improving the methods by which teachers are trained will have a great impact on the science and math education students receive -- and as a result, their future employment prospects.

Along with ExxonMobil, we enlisted the support of the National Science Teachers Association and Math Solutions to develop a program and curriculum to address critical needs in math and science education. As the program began to take shape, we knew we wanted the program to accomplish several key objectives.

Our key goal was to support elementary-level teachers to ensure they were equipped and prepared to establish a solid foundation of math and science education for students at an early age. Third- through fifth-grade is a crucial stage in educational development of children. Children in this age group begin to form ideas mentally and group things together. In addition, their next level of mental development is sequencing and ordering, preparing the way for math skills, and making them an ideal group to focus on in order to inspire interest in math and science.

So we worked together with NSTA and Math Solutions and designed a professional development program that gives teachers the opportunity to take a fresh look at math and science by designing a curriculum that helped them fully understand math and science concepts through hands-on learning. Hands-on demonstrations and exercises not only help to bring math and science concepts to life, but also work to pique the teachers' natural curiosity and awaken their sense of inquiry and problem-solving, also helping them to see these concepts through their students' perspective.

We developed a program to allow teachers to network with teachers like themselves and share best practices; to give them a forum to build off of each other's passion for teaching.

We designed a program that helps teachers relate math and science to students' everyday lives and help them to recognize that math and science is everywhere.

Because math and science is everywhere. Even in my golf game. I use math and science every day, and it's not just adding yardages to the pin. I actually practice based on statistics. I use course management based on numbers.

For instance, I know that my margin of error is plus or minus 5 or 6 percent. So if I have a 200 yard shot, 6 percent of that is going to be 32 yards off line – that's going to be my margin of error.

And there's even more science involved in equipment I use. Launch angles, spin rate, loft, deflection, initial velocity, the transfer of energy. I continually work with companies like Callaway and some of the most technical design processes to optimize the performance of my clubs.

And in our goal to equip teachers with effective tools they could take back to their classrooms, I also enlisted the support of my short-game instructor and former NASA engineer, Dave Pelz. Dave worked with the Academy to develop a DVD of short classroom math and science demonstrations that teachers could use to bring these subjects to life for their students. Using commonly found objects, such as basketballs, tennis balls, wood blocks and buckets, Dave was able to demonstrate how kids themselves can build on their natural curiosity to learn math and science concepts.

With these objectives in place, we launched the Academy in 2004 as a week-long, all-expenses-paid professional development program to hone the skills of teachers across the country. Since then, Amy and I have received tremendous feedback from teachers to tell us what an incredible impact the Academy had on their teaching.

We've heard stories about how the teachers have a newfound confidence in their teaching based on their deeper understanding of the math and science principles the Academy teaches. And when teachers are confident about the material they are teaching, their students are more comfortable in absorbing these concepts and principles.

Based on the overwhelmingly positive response to the Academy and the demonstrated the need for these types of professional development programs, within the first two years of the Academy, we expanded the Academy from one, week-long academy to three week-long Academies: one in Houston, one in Baton Rouge and this year, one in Jersey City New Jersey at the Liberty Science Center.

To date, the Academy has prepared more than 1000 teachers to return to their classrooms as ambassadors for math and science and inspire their students in these subjects the same way that they themselves were inspired at the Academy.

This year, we also expanded the opportunities for teachers from across the country to attend the 2009 Mickelson ExxonMobil Teachers Academy in Liberty Science Center by launching sendmyteacher.com

At sendmyteacher.com, students can recognize their teacher for the impact they have had on their lives and recommend that their teachers apply for next summer's Academy. I would encourage students and third- through fifth-grade teachers across the country to log on to sendmyteacher.com to learn more about how they can work with us to improve math and science education with a chance for those teachers to attend next year's Academy.

Working with ExxonMobil and with organizations like the National Science teachers Association and Math Solutions, we are continually working toward improving math and science education in elementary schools across this great country.

But so much more remains to be done.

We want to create a groundswell of passion for math and science across America. To encourage teachers to inspire their students, to pique their interest in the math and science so that they study, learn and are interested in becoming an engineer, a scientist, a leader of tomorrow. To ensure we are keeping our talent at home and keeping America competitive.

While public-private partnerships are helping to pave the way to improved math and science education across the country, I would encourage congressional leaders to fund additional programs that strengthen

math and science education, provide teachers with additional professional development opportunities and help ensure that the United States remains the most innovative nation in the world.

It will take all of us working together to reverse this trend. Amy and I have found great partners with ExxonMobil, the National Science Teachers Association and Math Solutions, and I'm here today to encourage more folks to get involved in supporting math and science education

Thank you for your time.