

A new prosthetic "hand" helps disabled girl produce beautiful music

By Chicago Tribune, adapted by Newsela on 10.11.16

Word Count **614**



Sarah Valentiner (left) of DeKalb, Illinois, plays her violin using the prosthetic designed by Northern Illinois University engineering student Oleseun Taiwo of Naperville. Photo: Denise Crosby/Chicago Tribune/TNS

DEKALB, Ill. — Sarah Valentiner and Oleseun Taiwo make beautiful music together. Sarah is 12 years old. She was born without her right hand. Taiwo is an engineering student at Northern Illinois University.

It all comes down to a light-weight plastic hand that Taiwo designed for Sarah. The prosthetic Taiwo designed allows Sarah to play her violin more easily.

Engineering teacher Federico Sciammarella helped his student design this prosthetic from a 3D printer.

“This is his design,” said Sciammarella, who guided Taiwo and gave him the chance. “I wanted him to be the owner.”

Previous Prosthetic Had Limitations

Valentiner is in eighth grade. She played the violin for about two years with help from a plastic device given to her by the Shriners Club. It helped but could only do so much, said Sarah’s father David Valentiner.

David and his wife, Nina Mounts, are both professors at Northern Illinois University. The couple came across e-NABLE. It's a group of designers who freely share 3-D plans for plastic hands. They thought there could be interest in making one for their daughter. They contacted NIU's school for engineering and technology first.

Sciammarella knew right away which student he wanted to work on it. Taiwo was even quicker to jump on board.

The 20-year-old was interested in the design part of engineering. He also said he wanted to go deeper and use design to solve big problems that would quickly have an effect.

What Was Once Schoolwork Became A Passion

It started as schoolwork in May, but Taiwo became more eager as he got into it. He and Sarah met once a week. They talked about everything they knew would be important to make the prosthetic perfect.

Both are perfectionists, say those who know the pair well. So it's no wonder they made so many changes to the design.

For example, Sarah used the prosthetic to play a beautiful song. It weighs about half as much as the first design, so it's less clunky. Even more satisfying, Taiwo said, was reworking the prosthetic so Sarah does not have to take the bow apart. That is a big deal if you are only dealing with one hand.

He Wants To Help Others

Taiwo plans to share the improvements with e-NABLE. That way, they can help others.

"When I started in engineering I figured I'd just get my degree and get a job," he said. His father is the head of nuclear engineering at Argonne National Laboratory. Taiwo is still all about finding solutions. He says his work with Sarah changed him, though.

Taiwo wants to work in 3-D printing when he graduates. His plans are to work with people on designs that help the world.

Taiwo gives equal credit to his 12-year-old partner. Their connection has made working together such a pleasure, say both Sarah's father and Taiwo's professor.

Sarah's parents understand the importance of allowing children to see what's possible in the world. They work with people to help them deal with their emotions or mental health. They say seeing what is possible is especially important for children like Sarah who have disabilities.

She, Too, Wants To Make The World A Better Place

This prosthetic, Sarah insists, has not just boosted her confidence as a violinist. It's also made her aim for a future in engineering. She wants to use that to "make the world a better place."

Sarah is grateful for the difference it has made in her ability to make beautiful music. She insisted on adding one more important note.

“It wasn’t so much whether it would be a success,” she said with a shy smile. “[It’s] the thought behind it that made this so great.”

Quiz

- 1 What would be another good title for the section "Previous Prosthetic Had Limitations"?
 - (A) "Help From The Shriners Club"
 - (B) "Sarah Needs A Better Prosthetic"
 - (C) "Taiwo Wants To Be An Engineer"
 - (D) "e-NABLE Makes Prosthetic Hands"

- 2 Which sentence from the article is MOST important to include in its summary?
 - (A) She played the violin for about two years with help from a plastic device given to her by the Shriners Club.
 - (B) It's a group of designers who freely share 3-D plans for plastic hands.
 - (C) They talked about everything they knew would be important to make the prosthetic perfect.
 - (D) Sarah's parents understand the importance of allowing children to see what's possible in the world.

- 3 How did Taiwo become involved with designing the prosthetic?
 - (A) His teacher recommended him.
 - (B) His parents suggested it.
 - (C) e-NABLE contacted him.
 - (D) Sarah asked him for help.

- 4 Which section of the article BEST explains HOW Taiwo and Valentiner worked together to design the prosthetic?
 - (A) "Previous Prosthetic Had Limitations"
 - (B) "What Was Once Schoolwork Became A Passion"
 - (C) "He Wants To Help Others"
 - (D) "She, Too, Wants To Make The World A Better Place"

Answer Key

- 1 What would be another good title for the section "Previous Prosthetic Had Limitations"?
 - (A) "Help From The Shriners Club"
 - (B) "Sarah Needs A Better Prosthetic"**
 - (C) "Taiwo Wants To Be An Engineer"
 - (D) "e-NABLE Makes Prosthetic Hands"

- 2 Which sentence from the article is MOST important to include in its summary?
 - (A) She played the violin for about two years with help from a plastic device given to her by the Shriners Club.
 - (B) It's a group of designers who freely share 3-D plans for plastic hands.
 - (C) They talked about everything they knew would be important to make the prosthetic perfect.**
 - (D) Sarah's parents understand the importance of allowing children to see what's possible in the world.

- 3 How did Taiwo become involved with designing the prosthetic?
 - (A) His teacher recommended him.**
 - (B) His parents suggested it.
 - (C) e-NABLE contacted him.
 - (D) Sarah asked him for help.

- 4 Which section of the article BEST explains HOW Taiwo and Valentiner worked together to design the prosthetic?
 - (A) "Previous Prosthetic Had Limitations"
 - (B) "What Was Once Schoolwork Became A Passion"**
 - (C) "He Wants To Help Others"
 - (D) "She, Too, Wants To Make The World A Better Place"