COMMONLIT

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Teenage Inventor Alexis Lewis Thinks That Kids Have the Solutions to the World's Problems

By Megan Gambino
2015

Alexis Lewis is an inventor of several life-changing devices, and at the time of this article, she was only 15 years old. In this 2015 interview from Smithsonian Magazine*, Lewis discusses her inventions and why she thinks more kids could help solve the world's problems through their own inventions. As you read, take notes on why Lewis thinks kids make good inventors.*

[1] Benjamin Franklin invented swim flippers when he was 12 years old. Frank Epperson, age 11, conceived of the popsicle, and 16-year-old George Nissen thought up a trampoline.

Just last year, Kiowa Kavovit, then 6, became the youngest to pitch her invention — a liquid bandage called Boo Boo Goo — on ABC's "Shark Tank."

In the United States, there is no age requirement for filing a patent.

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Alexis Lewis, a 15-year-old inventor in Chapel Hill, North Carolina, wants children across the country to know that an inventor isn't something you have to be when you grow up; they can be one now. Lewis holds a patent for a wheeled travois — a triangular load-carrying device with a bamboo frame and a bed of netting that she designed to serve Somali refugees,[1] who need to transport their children many miles to camps and hospitals. Her patent-pending emergency mask pod is a football-shaped canister with protective gear that firefighters and first responders can throw through a window of a smoke-filled building to those trapped inside.

[5] The two-time winner of the ePals-Smithsonian Spark!Lab Invent It Challenge, a competition for young inventors age 5 to 18, is a vocal advocate for "Inventing 101" courses to be a part of middle school curriculums.

Why should more people invent?

I think not only is it important to tell people that they can invent but it's important also to tell them that they should be [inventing] because they have their own unique perspective on the world. Everybody has lived a different life, everybody has seen it [the world] slightly differently and I think everybody has a slightly different take on each problem. And I think if we all work together we can solve a tremendous number of problems.

What motivates you to invent?

1. people who have been forced to leave their home due to war or disaster

My inventions are motivated by one of two things usually. One, it's a humanitarian issue, basically people who aren't getting the help they need, people who are dying unnecessarily when they could be saved. Another reason that I often invent is that I'll get myself absolutely buried in a piece of physics, just learning about it obsessively. Then, I start to realize that there are little things that can be done to make technologies revolving around it a little bit more efficient here, a little bit more effective there.

Can you tell us a little bit about the environment you grew up in and how that's impacted you as an inventor?

My mom would always read to the family about various world issues. When Hurricane Katrina hit [Alexis was 5 years old], we learned all about that — what a hurricane was, how it worked, the effects of Hurricane Katrina itself, what they were doing to help clear out floodwaters, all sorts of fascinating stuff. Being homeschooled, I had a lot of free time in which I was encouraged to basically go and do and build almost anything I wanted. I had access to videos on any subject, so I got to learn about the science of everything, and I read voraciously.[2] I think having those channels of knowledge open to me was completely invaluable.

Do you think you have some advantages as an inventor given the fact that you've started young?

I don't mean to put adults down, but when you've grown up and you've seen the world for a long time, you think its one way. I'd say that starting young has had an advantage in that I have the ability to look at something and not think, "oh this is a problem that can't be solved," but instead think maybe we've been looking at it just a little bit wrong. Kids, since they haven't been told this is something that would never work over and over, have the ability to do that.

What is Inventing 101? Where did the idea come from, and why is it important to you?

[10] It's a class I hope to have administered to middle school students across the country that would basically tell them that they are capable of inventing. It would show them kids who have already invented. If people aren't told when they're young that they can invent, it's going to be much harder to convince them that they can.

I had this idea when I was looking back at the stuff I had done, at my inventions and realizing that these are some simple [designs.] It's not going to necessarily be the collapsible travois with custom made specially fabricated joints, it's going to be the simple bamboo one that anybody can make. It's not necessarily going to be the $700 grenade launcher, it's going to be a little football-shaped pod that costs all of $4. People are stunned when they hear what I've done. But these are things that I know for a fact a lot of people can do. So I thought there's got to be some way to awaken that self-confidence in people to enable them to do that.

How does your Emergency Mask Pod (EMP) work?

The emergency mask pod is basically a two-part football canister that holds a smoke mask made by Xcaper Industries, a pair of goggles and a little light-emitting device, most likely a LED light strip in the final version. The goggles allow people to concentrate more fully on getting out without having to worry about their eyes burning. The mask gives people the ability to breathe without dealing with the toxic effects of the smoke, and the light strip allows people to more easily locate the pod when it flies into a dark smoky room.

2. **Voracious** ***(adjective)*** extremely eager or hungry

Designing the EMP pod was a process of trial and error. I'm a kid. I like things that go boom and shoot, and so my first thought was let's just launch it up there. I did a whole bunch of research, and I was looking at a couple of different launcher mechanisms. I had the mascot of a local sports team fire a pneumatic[3] cannon, basically a t-shirt cannon, into an open window from a very close distance, and accuracy was pretty abysmal.[4] I went from a pneumatic cannon, which didn't work at all, to a couple of so-so throwable devices, and ended up finally with a throwable canister with an accuracy of over 75 percent.

People think that the inventors of the world are the crazy mad scientists and white lab coats working long hours developing crazy new technologies. But that's not the case. It's not something reserved for Edison,[5] Graham Bell,[6] all the greats. Inventors are basically anybody and everybody who's ever tried to solve a problem.

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3. operated by air or gas under pressure
4. **Abysmal** ***(adjective)*** extremely bad
5. Thomas Edison was an inventor who created the electric lightbulb and phonograph.
6. Alexander Graham Bell was a scientist and inventor who is credited with patenting the first practical telephone.

Text-Dependent Questions

Directions: For the following questions, choose the best answer or respond in complete sentences.

1. PART A: Which of the following identifies Lewis's main claim in her interview?
    A. Anyone is capable of inventing something useful; they just have to start thinking of themselves as an inventor.
    B. Lewis has been able to invent incredible devices due to her unique education and perspective on life.
    C. It is adults' responsibility to encourage children to invent, as children are the ones that make the most impactful inventions.
    D. Lewis views her success as a result of luck, but thinks that kids can accomplish something similar through proper education.

2. PART B: Which detail from the text best supports the answer to Part A?
    A. "My mom would always read to the family about various world issues. When Hurricane Katrina hit [Alexis was 5 years old], we learned all about that — what a hurricane was" (Paragraph 8)
    B. "Being homeschooled, I had a lot of free time in which I was encouraged to basically go and do and build almost anything I wanted." (Paragraph 8)
    C. "I don't mean to put adults down, but when you've grown up and you've seen the world for a long time, you think it's one way." (Paragraph 9)
    D. "If people aren't told when they're young that they can invent, it's going to be much harder to convince them that they can." (Paragraph 10)

3. What connection does Lewis draw between youth and a person's ability to invent?
    A. Kids have more energy and time to spend thinking of inventions.
    B. Kids have a more optimistic approach to the world and solving its problems.
    C. Kids are able to think outside of the box when they are younger.
    D. Kids are more likely to persevere in the face of obstacles when creating something.

4. How does the introduction's description of other young inventors in paragraphs 1-2 contribute to the text overall?

Discussion Questions

Directions: Brainstorm your answers to the following questions in the space provided. Be prepared to share your original ideas in a class discussion.

1. Do you think a class on creating inventions and innovation should be offered in school? Why or why not?

2. In the context of the text, what is the goal of education? How does Lewis think education can help kids develop inventions? Cite evidence from this text, your own experience, and other literature, art, or history in your answer.

3. In the context of the text, why should we value our youth? Do you agree with Lewis's claim in the text? What are other reasons that kids might make better inventors than adults?