

A decorative graphic on the left side of the slide, consisting of a network of light blue lines and circles, resembling a circuit board or a data network.

[CodeDak]

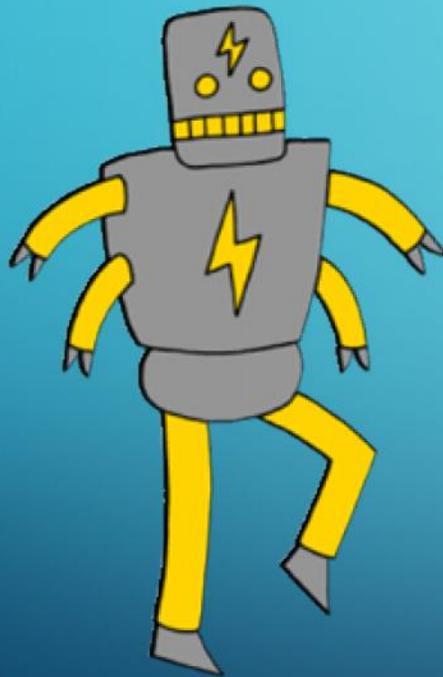
ND LIBRARIES
TEACHING CODE

SUMMER SUMMIT

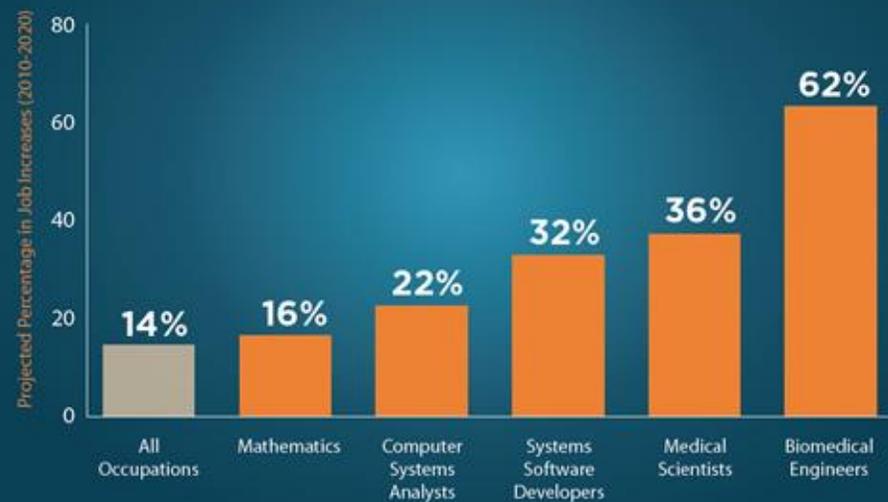
2017



WHY TEACH CODING?

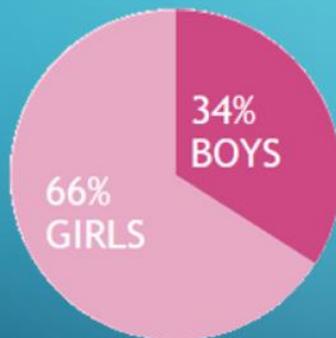


PROJECTED PERCENTAGE INCREASES IN STEM JOBS: 2010-2020

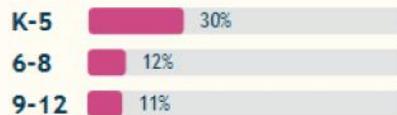


WHY CODE IN LIBRARIES?

Children in an afterschool program,
by gender

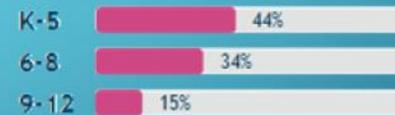


Children in an afterschool program,
by grade



In 2014, 30% of North Dakota's children in grades K-5 participate in an afterschool program, compared to 12% in grades 6-8 and 11% in grades 9-12.

Children who would participate if
an afterschool program were
available, by grade level

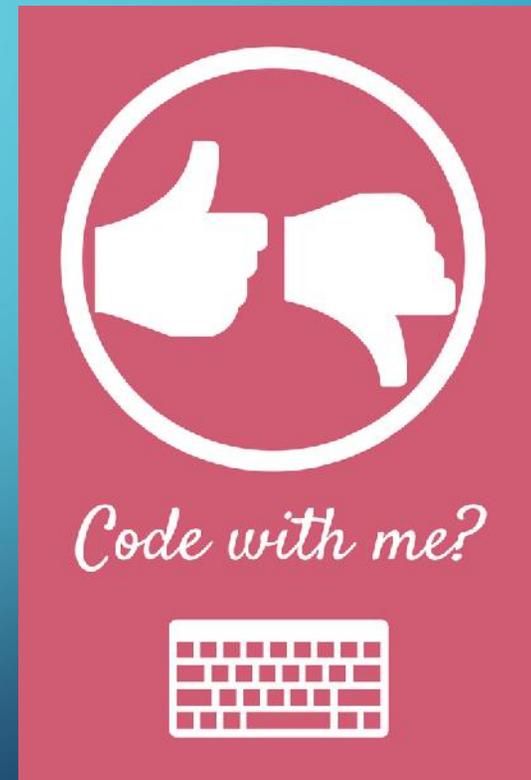


NO REALLY, WHY CODE?



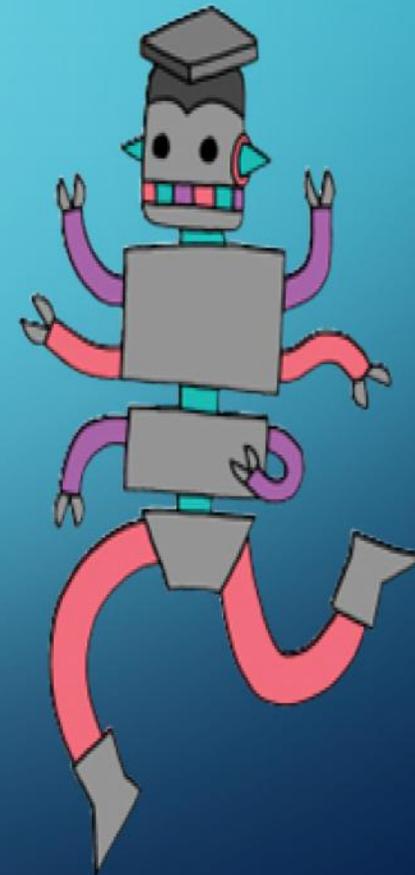
COMMON CODING CLUB CONCERNS

- Can I start a coding club if I don't know how to code?
- How do I fit a coding club into my budget?
- What's step one?



HELP IS ALWAYS AVAILABLE

- Code.org
 - <https://code.org/learn>
- Hello, Ruby
 - <http://www.helloruby.com/>
- CS First
 - <https://www.cs-first.com/en/home>



WOLFRAM  PROGRAMMING LAB

 PENCIL
code

App Lab

C O
D E



codecademy

SCRATCH

Made w/ Code

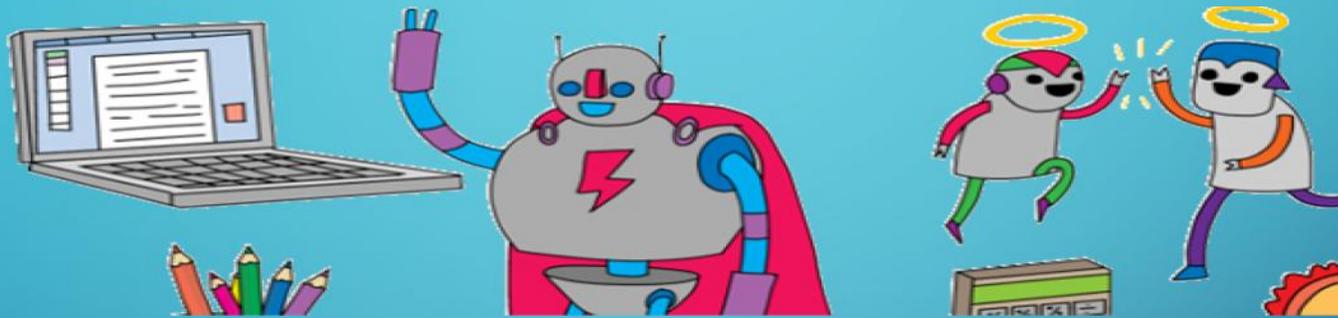
CS First



thimble
moz://a



START SMALL



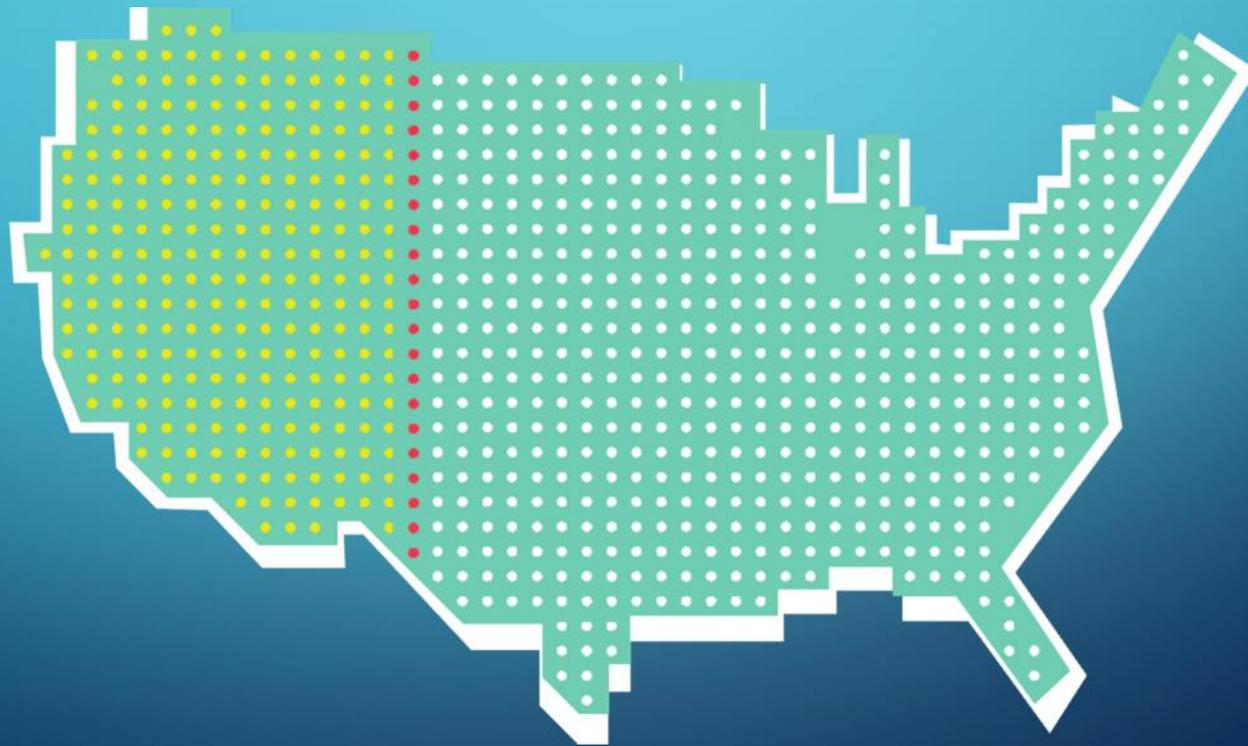
- Advertise the club well in advance
- Have a registration limit
- Seek community partnerships

ONCE THE CLUB IS STARTED

- Make sure to have rules
- Let the kids learn at their own pace
- Have a clear end date for your section

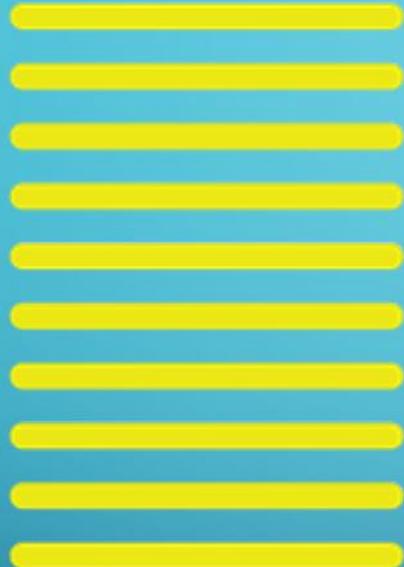


BRIDGING THE GENDER GAP IN COMP SCI



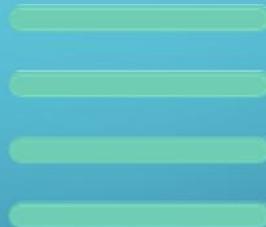
% OF FEMALE STUDENTS INTERESTED / ENROLLED IN COMPUTING PROGRAMS

66%



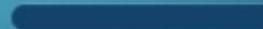
6-12
YEAR OLD GIRLS

32%



13-17
YEAR OLD GIRLS

4%



COLLEGE
FRESHMAN

AGE

In 1984

37%

of all computer
science graduates
were women.



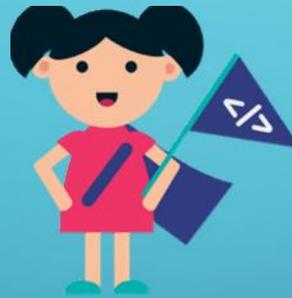
Now that
number is just

18%

Made w/ Code

Intel® She Will Connect

H	E	L	>	0
R	U	B	Y	



**GIRLS
WILL
CODE**

dot | diva

girls who
CODE

GOING BEYOND CODE





Sphero! The friendly
robot ball.

<http://www.sphero.com/>



Kano – Build your own
computer!

<https://kano.me>



Codeybot – The
programmable, talking,
dancing wedge on wheels

<http://www.codeybot.com/>



Dash and Dot may look cute,
but they play the xylophone
and fire a catapult

<https://www.makewonder.com>



Behold! The Finch.

<http://www.finchrobot.com/>



Ozobots – Draw lines with markers and program robots

<http://ozobot.com/>

WeDo 2.0 – LEGO power (with LEGO parts!)

<https://education.lego.com/en-us/elementary/shop/wedo-2>



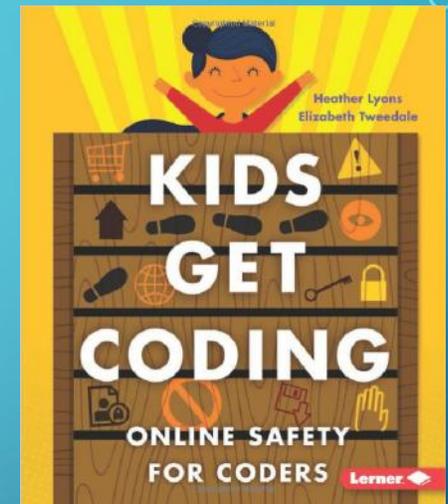
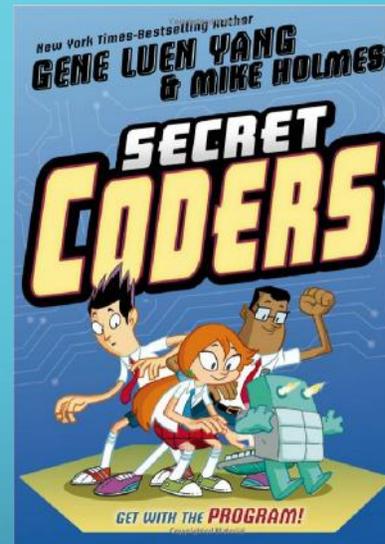
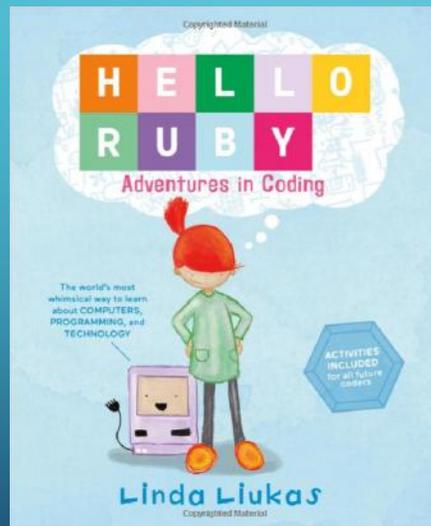
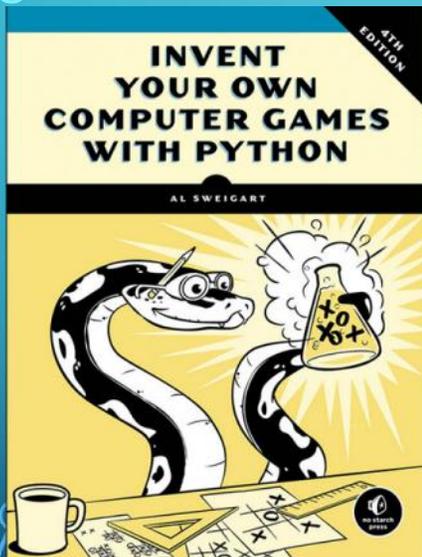


Cubelets – Magnetic cubes with brains

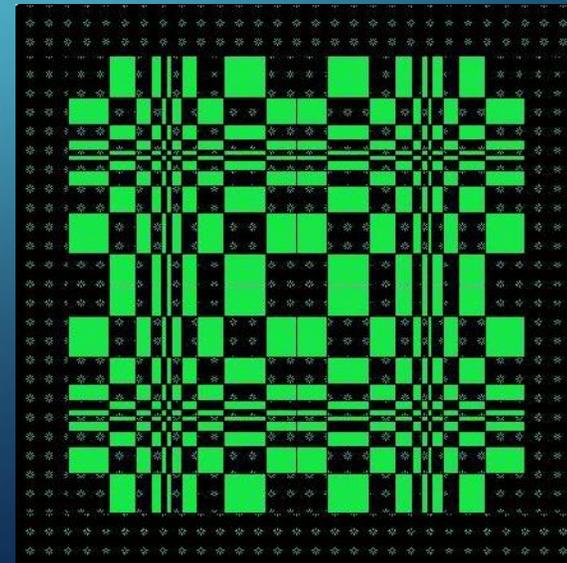
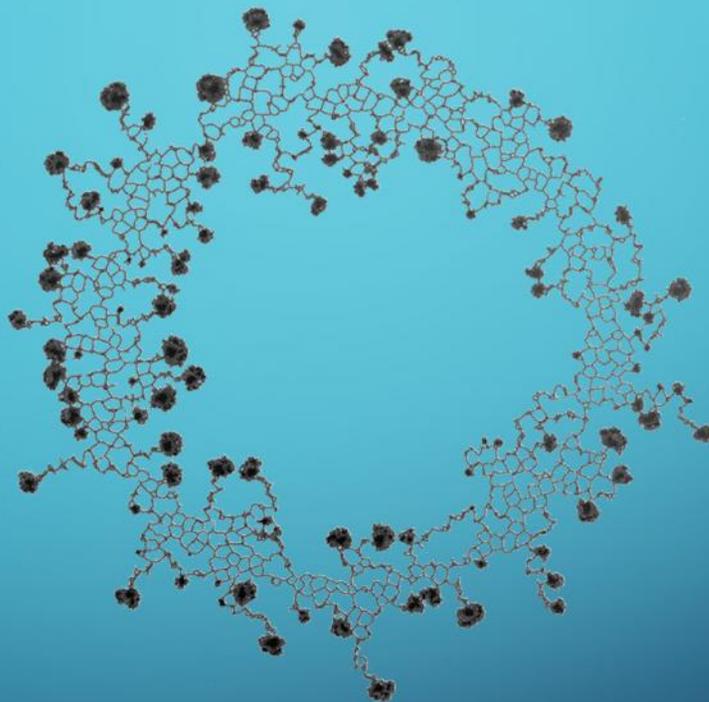
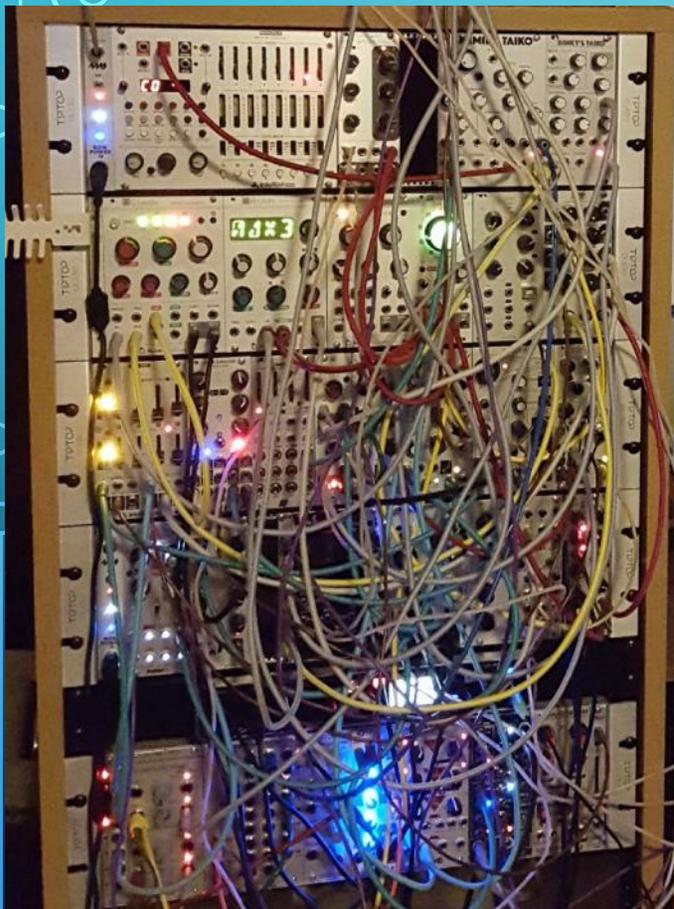
<http://www.modrobotics.com/cubelets/>



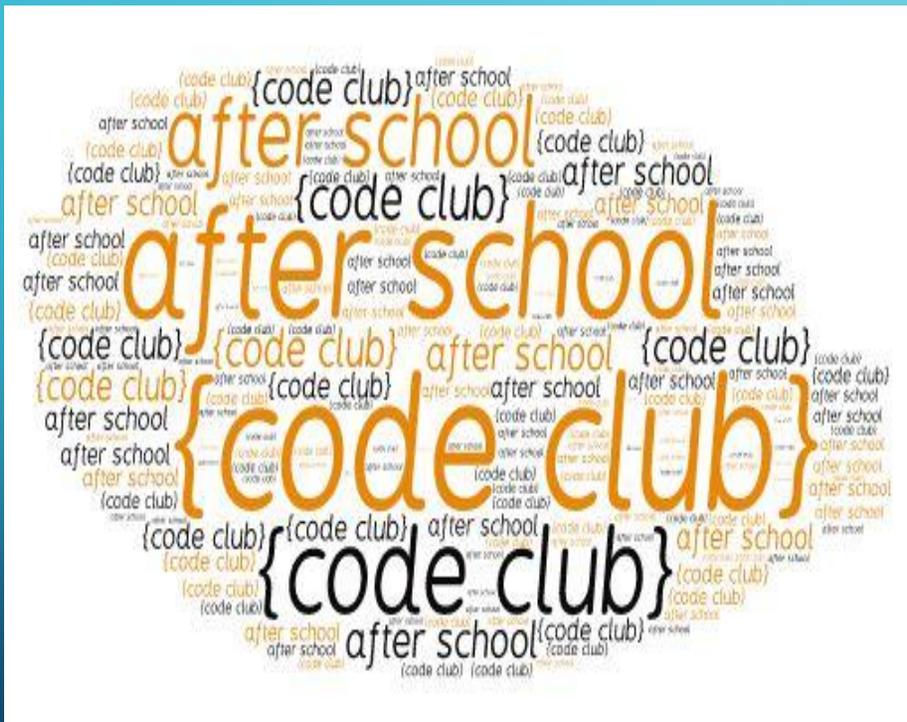
CODEY BOOKS!



PUTTING THE "A" IN STEM!



FINAL THOUGHTS



- It will get easier
- Share information among yourselves
- The State Library is here to help
- Keep the State Library updated!



*North Dakota
State Library*

QUESTIONS?

SOURCES

- Drawings of robots on slides 2, 6, 8, and 9 are from Code Club International, as are the images on slides 5 and 26: <https://www.codeclubworld.org/>
- Charts on slide 3 are from the Afterschool Alliance: <http://www.afterschoolalliance.org/>
- Photos on slides 4 and 14 are from the Dot Diva image bank: <http://dotdiva.org/educators/resources.html>
- Charts on slides 10, 11, and 12 are from Girls Who Code: <https://girlswhocode.com/about-us/>
- The algorithmic art mistake in the center of slide 25 is from Inconvergent: <http://inconvergent.net/>
- Additional statistics are from Code.org <https://code.org/promote/nd> and the Bureau of Labor Statistics: <https://www.bls.gov/>
- Additional resources are available from Intel MakeHers: <https://www.intel.com/content/www/us/en/technology-in-education/making-her-future-report.html>