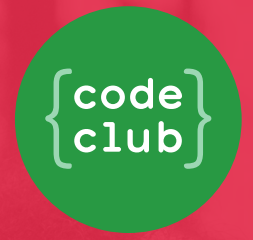
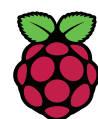


Code Club Annual Survey 2019 Report



Jonathan Dickins

Raspberry Pi Foundation Research No. 14



Raspberry Pi



CoderDojo

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Published in September 2020
by the Raspberry Pi Foundation

www.raspberrypi.org

ISSN 2514-586X

Introduction

Code Club works with a global community of educators and volunteers to help young people around the world to learn about coding and digital making. At the Raspberry Pi Foundation, we support these volunteers to set up and run their clubs, by providing free online resources and projects. Gathering feedback from our volunteers is an important step in helping us to provide better support to clubs and understand the impact that Code Club is having.

In this publication, we will share some of the results from our 2019 annual survey of Code Club educators and volunteers, focusing on five themes:

- The characteristics of Code Clubs
- The characteristics of the educators and volunteers at Code Club
- Geographic differences in how clubs are set up and run
- The ways in which Code Clubs use resources to support participants
- The impact that Code Club is having on the young people taking part

codeclub.org

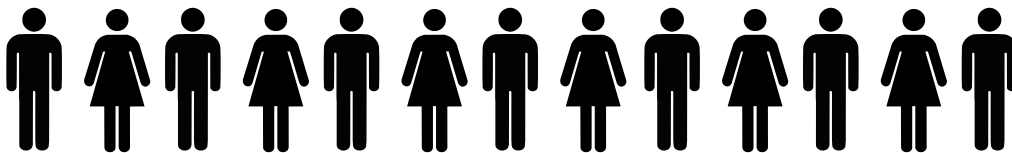
About the survey

The Code Club annual survey was sent to all Code Club-registered educators and volunteers in November 2019. Of the 13,663 people who received the survey, 1583 completed it, giving a response rate of 12%.

The characteristics of Code Clubs

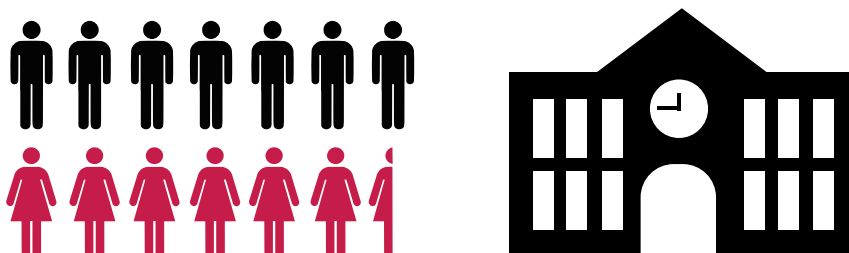
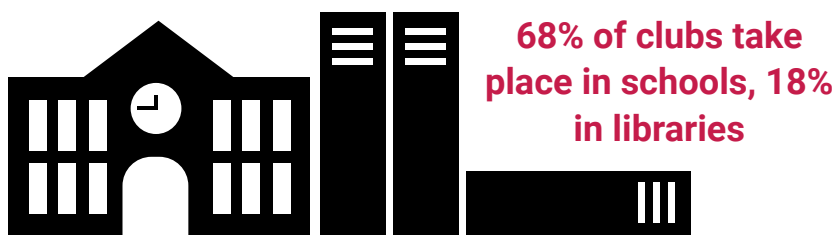
The characteristics of Code Clubs

- We asked Code Club educators and volunteers about the characteristics of their Code Club, and the young people who attend.
- The average Code Club has 13 attendees, but club sizes have ranged from just 1 or 2 attendees to more than 30. The average of responses to this question over the past three years of annual surveys is 14 attendees per club.



13 attendees per Code Club on average

- We found some differences in the size of Code Clubs at different venues, and in their setup. 68% of Code Clubs take place in schools, and school-based Code Clubs have 15 attendees on average. Larger Code Clubs are more likely to take place in universities, and often have more volunteers to support attendees. Smaller Code Clubs tend to be held in libraries, and the average library-based Code Club has 9 attendees.



School-based clubs have 15 attendees on average, with 42% female attendees

- 40% of the young people who attend Code Club are female. Code Clubs held in community spaces and tech hubs or makerspaces have a slightly higher proportion of female attendees (46%) than schools (42%) and libraries (37%).



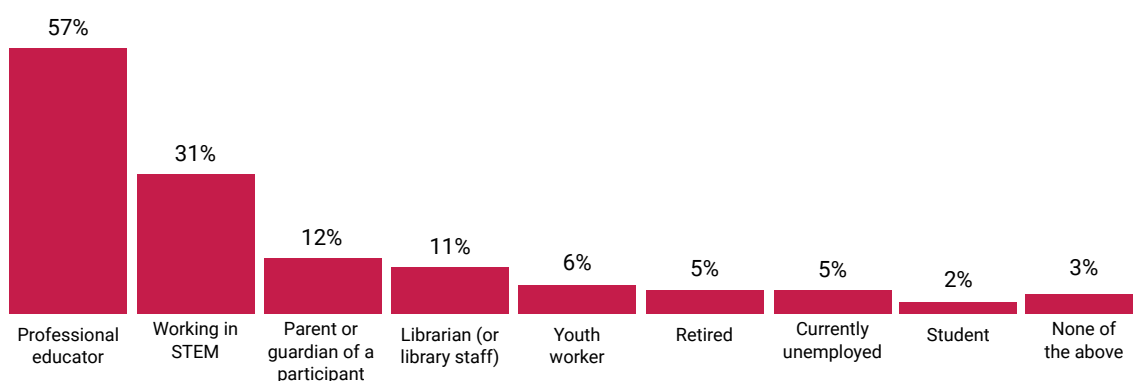
40% of attendees are female

- We also asked whether clubs had attendees or volunteers who are members of underserved groups. 10% of volunteers told us that their club has attendees or volunteers from lower-income backgrounds, 3% told us that their club has attendees or volunteers with lower levels of education, and 4% told us that their club has attendees or volunteers who have a disability.

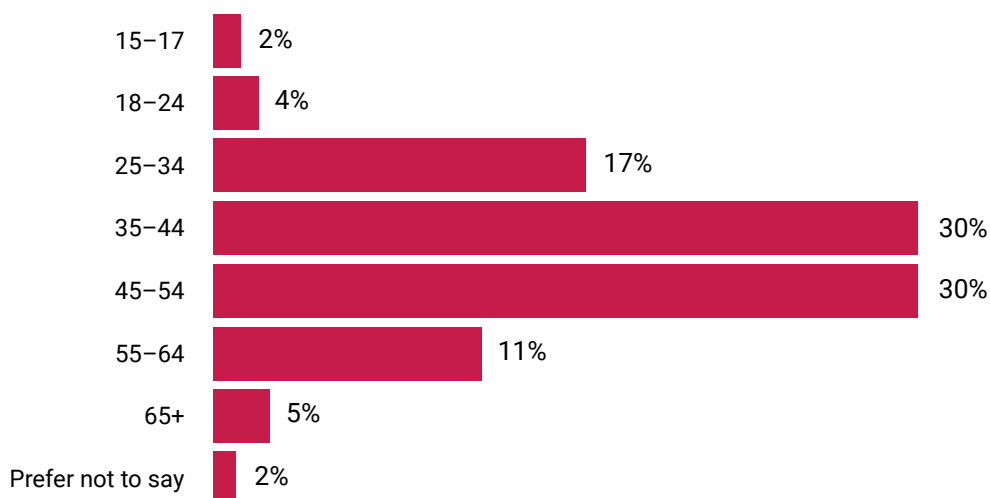
The characteristics of the educators and volunteers at Code Club

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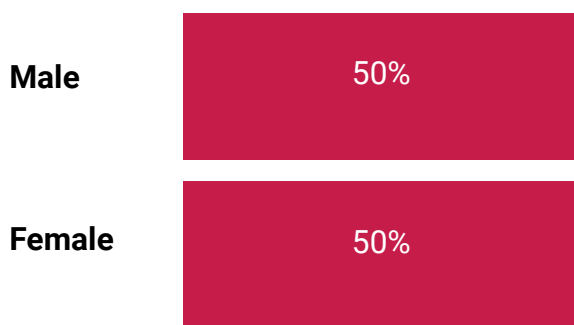
- We asked Code Club educators and volunteers to select the terms that best describe their roles. The majority (57%) are professional educators, often running their club in the school at which they work. 31% work in STEM (science, technology, engineering, or maths) occupations, volunteering at a local club in their spare time. 11% are librarians or library staff, and 12% are parents or guardians of participants.



- There is a wide range of ages among educators and volunteers. 60% of volunteers are between the ages of 35 and 54, 23% of volunteers are between the ages of 15 and 34, and 16% of volunteers are between the ages of 55 and 84. Volunteers aged 15 to 24 are more likely to be youth workers or students themselves. 5% of respondents stated that they are retired.



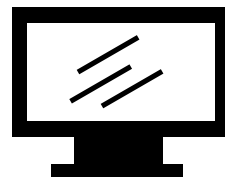
- 50% of Code Club educators/volunteers are female. We found some differences in the backgrounds of male and female volunteers. 40% of male volunteers work in STEM occupations, and 50% are professional educators. Female volunteers are more likely to be professional educators (64%), while 22% work in STEM occupations. Female volunteers are also more likely to be librarians or library staff.



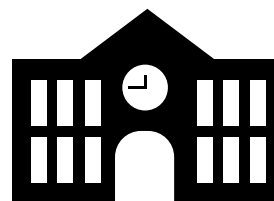
- Just under half of club hosts (47%) run their club by themselves, and at the other end of the scale, 27% of club hosts reported that their club has three or more volunteers including themselves. Club hosts who reported having four or more volunteers in total at their club are more likely to be working in STEM. This could be related to Code Clubs hosted by corporate partners, where a rotation of volunteers run the club. Hosts running clubs by themselves are most likely to be professional educators, running a Code Club for children at their school.



Male educators/volunteers are more likely to come from STEM occupations



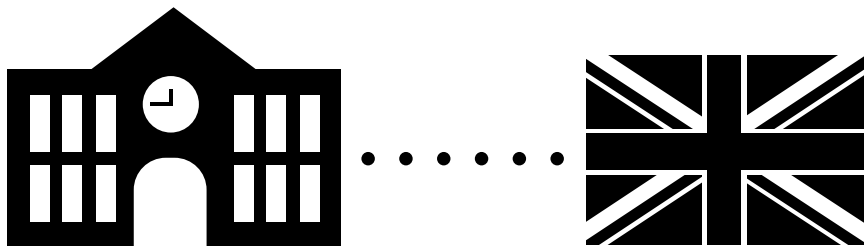
Female educators/volunteers are more likely to be professional educators



Geographic differences in how clubs are set up and run

Geographic differences in how clubs are set up and run

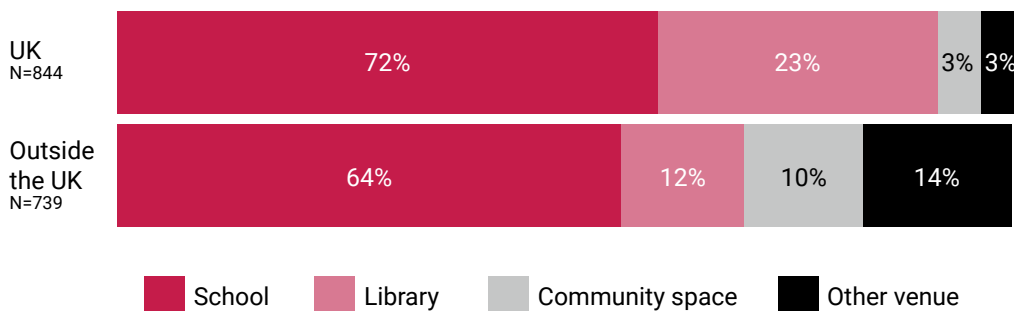
- Code Club volunteers from 69 different countries responded to the survey, in eight different languages, and there are some differences in how educators and volunteers run their clubs in different regions.
- Outside the UK, professional educators make up 65% of those running clubs, compared to 50% in the UK. Clubs outside the UK are also more likely to be run by youth workers (9%, compared to 1% in the UK) or students (8%, compared to 2% in the UK). The proportion of volunteers working in STEM is similar between clubs in the UK and outside the UK (30% and 32% respectively).



Clubs in the UK are more likely to be run by professional educators in schools

- In the UK, 72% of clubs are held in schools, and a further 23% are held in libraries, meaning that 19 out of every 20 clubs are held in one of these two venues. Outside the UK, the venues selected are more varied: 64% of clubs are held in schools, with a further 12% held in libraries, and 10% in community spaces. “Other venues” in this question included offices, universities, and makerspaces.

Differences in venues between clubs in the UK and outside the UK



- There are also differences in the proportion of girls attending clubs in different regions. In the UK, 39% of Code Club attendees are girls, whereas in the USA and Canada, the proportion of girls taking part is higher (48% in the USA, and 47% in Canada). In India, educators and volunteers reported that 52% of attendees are girls.

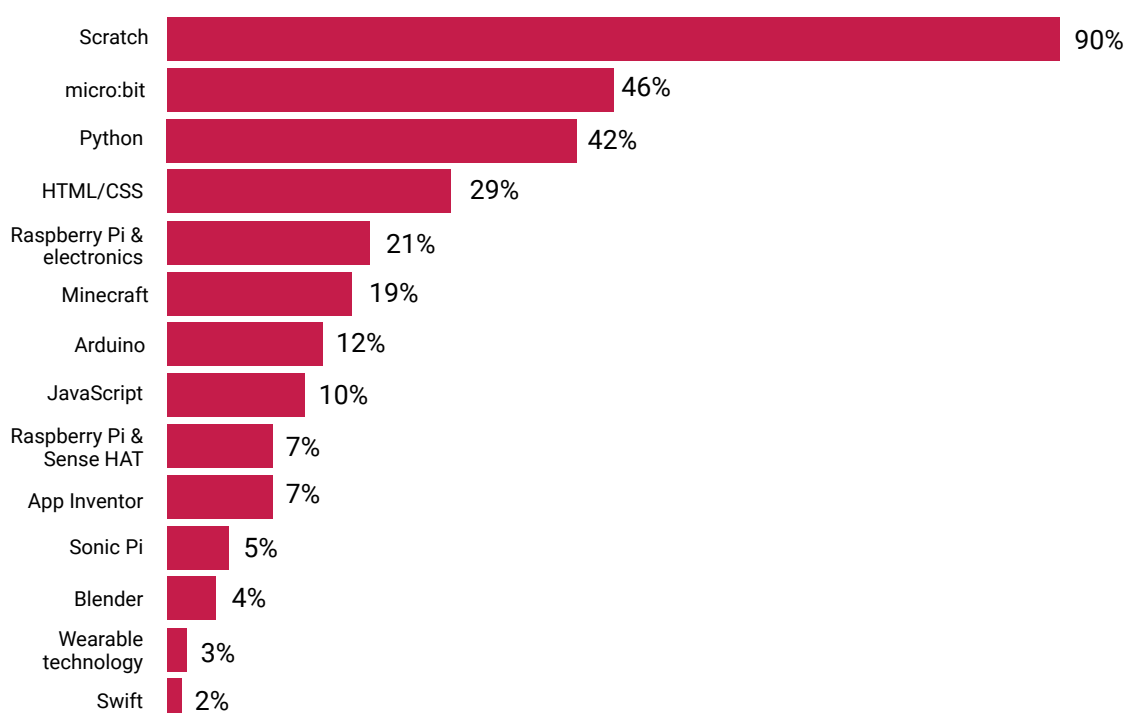
The ways in which Code Clubs use resources to support participants

The ways in which Code Clubs use resources to support participants

- At Code Club, young people typically work through resources to learn new skills. The Raspberry Pi Foundation provides resources in 26 languages across a variety of topics and tools, but club hosts are free to use any resources they wish to support the young people in their club.
- In 2019, 91% of volunteers told us that they use resources provided by Code Club or the Raspberry Pi Foundation, with 79% using resources specific to Code Club and 43% accessing projects via the Raspberry Pi Foundation's Projects site. In terms of format, 45% of clubs use a combination of printed and online resources, while 42% use only online resources, and 13% use only printed resources.



- 47% of volunteers also use other online resources, and 32% reported making their own resources. Common reasons for volunteers making their own resources rather than using existing ones included volunteers enjoying making their own resources, and not being able to find resources on the topics they wanted.



- Projects involving Scratch have consistently been the most popular type of project for young people to work on at Code Club, with 90% of volunteers telling us that they had used Scratch in their club. Since we started surveying volunteers in 2017, the popularity of Scratch has been consistent, but usage of other tools and projects has increased. In 2017, 46% of UK-based clubs used only Scratch, but in 2019, this number had decreased to 19%, meaning that the average club in the UK has also introduced other languages or tools to support learning of new skills, or further development of those learnt through using Scratch.

90%

**Clubs that have
used Scratch**

19%

**Clubs that use
only Scratch**

- This decrease in the proportion of clubs using only Scratch reflects increased usage of other projects and programming languages between 2017 and 2019. 28% of UK-based clubs had worked with Python in 2017, whereas 49% had done so in 2019, and there were also increases in working with micro:bit (from 32% in 2017 to 56% in 2019) and HTML/CSS (from 21% in 2017 to 32% in 2019). Scratch remains the most popular language at Code Club by some distance, but clubs are increasingly focusing on a broader range of projects and helping participants to develop a more diverse set of skills.

The impact that Code Club is having

The impact that Code Club is having

94%

of volunteers agree that the young people at their Code Club have improved programming skills

92%

of volunteers agree that the young people at their Code Club have improved confidence in their computer skills

92%

of volunteers agree that the young people at their Code Club are more interested in programming and computers

What is the best thing about Code Club?

“It enables pupils to tinker, make, adapt, and explore both physical computing and coding in a fun and relaxed way.”

Sarah, UK

“The best thing about Code Club is the feeling that you’re really making a difference, preparing students for advanced computing and bolstering their learning across the curriculum.”

Paul, UK

“I love seeing the satisfaction on the students’ faces when they have had success. Code Club encourages the kids to take risks and know that making mistakes is good. Code Club has helped the students improve their problem-solving skills and persistence.”

Cath, Australia

“Giving the opportunity to children who live under the poverty line to express their creativity and to learn new things that they only dreamed to learn about. Seeing the smiley faces is the best reward that you can gain from running a Code Club.”

Nadia, Iraq

“The kids are the best thing about Code Club. They are so creative and thirsty for knowledge that I am always amazed by the great questions and creative ideas they have. Being a part of that ‘aha’ moment when a kid just starts to get it is a wonderful feeling.”

Lawrence, USA

- We asked educators and volunteers to tell us about the impact that taking part in Code Club is having on the young people that they reach. Across all categories, feedback was generally positive, but in particular, the most widely reported impact of Code Club was improving programming skills, increasing interest in programming, and improving confidence in computer skills.
- 94% of volunteers agreed that since taking part in Code Club, the young people that they reach have improved their programming skills. 92% reported that the young people that they reach have improved confidence in their computer skills, and 92% reported that the young people that they reach are more interested in programming and computers.
- Educators and volunteers were also positive about the impact of Code Club on the ability of attendees to solve problems with computers (88% agreed that attendees had improved their skills in this regard), and 83% agreed that attendees are more able to teach others computer skills.
- We also asked educators and volunteers what the best thing is about Code Club. Many volunteers mentioned the variety and quality of resources that Code Club provides, the opportunity for learners to develop coding skills in a fun environment, and the student-directed learning of computing skills.

