Code Club Annual Survey
2018 Report

Jonathan Dickins

Raspberry Pi Foundation Research No.9

Raspberry Pi

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Introduction

Code Club works with a global community of educators and volunteers to give young people around the world the chance to learn about coding and digital making. At the Raspberry Pi Foundation, we aim to 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.

This publication contains the results of our 2018 annual survey of Code Club educators and volunteers. We've gained insight into how clubs around the world operate, which enables us to keep track of how effectively we are supporting clubs, and helps us to understand the impact of Code Club on the young people attending.

Our sincere thanks to all who took the time to complete the survey, and to all those who help to create the impact on young people that we report on here.

codeclub.org

Overview

Our annual survey of Code Club educators and volunteers has revealed a wide diversity between clubs in how they are run, how many young people they reach, and how they use our resources to support their students' learning. These clubs are supported by educators and volunteers of all ages from a variety of backgrounds, the vast majority of whom agree that the young people they reach have improved their skills and confidence by taking part in Code Club.

Key results

- 92% of educators and volunteers agree that the young people at their club have improved their programming skills since starting, and 88% agree that the young people are more confident in their computer skills.
- The average number of attendees at a session is 15, but there are differences between regions in club size.
- We estimate that the proportion of Code Club attendees around the world who are girls is 40%.
- There are broad differences between clubs in how they use our resources, with 39% using a combination of printed and online resources, 39% using online resources only, and 22% working from printed resources only.
- 87% of clubs take place in either a school or library, but there were differences in how these two venue types use our resources. Schools were twice as likely to use only online resources as libraries, and libraries twice as likely to use printed materials.
- Clubs in the UK and North America were different in two ways:
  - Clubs in North America were larger on average than other regions, whereas clubs in the UK are smaller. 50% of UK clubs have ten or fewer attendees, compared to 33% in North America.
  - There was a higher proportion of female educators and volunteers in North America (70%) than in any other region. In the UK, 48% of educators and volunteers were female.

Recommendations

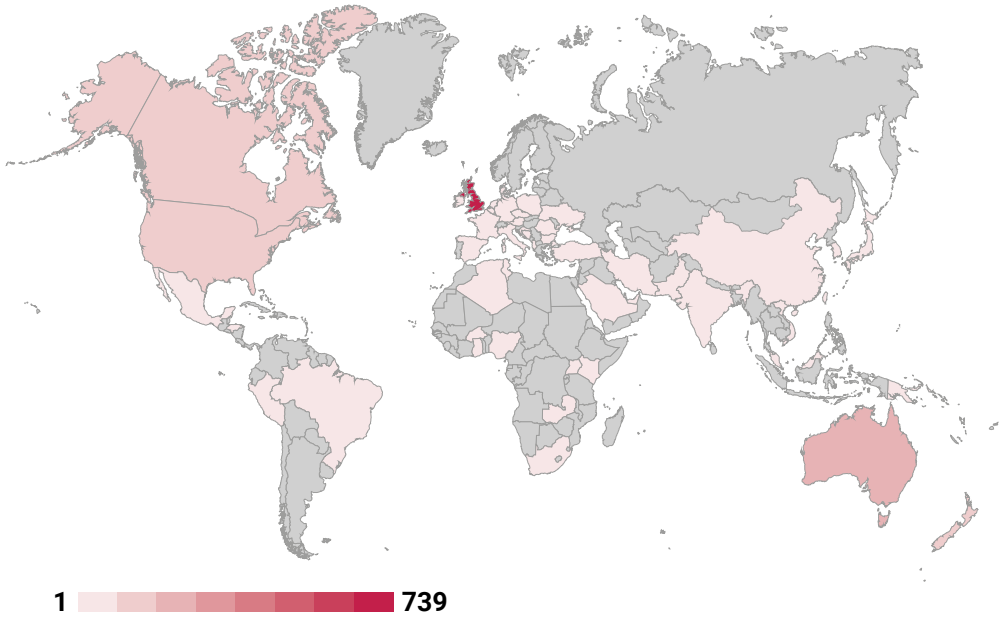
- Investigate the reasons why clubs in the UK tend to be smaller than those in the US.
- Conduct further research into the factors that determine the gender balance at a club.
- Continue to develop online features for our learning resources to more objectively assess learning outcomes and the impact of Code Club on participants.

The sample

In all, 1340 educators and volunteers (out of a total of around 17,000 Code Club educators and volunteers) completed the survey, from clubs across 59 countries. This was a slightly lower response rate than last year, and we will explore new methods for improving how we sample our community in the future.

Headline results
Club characteristics

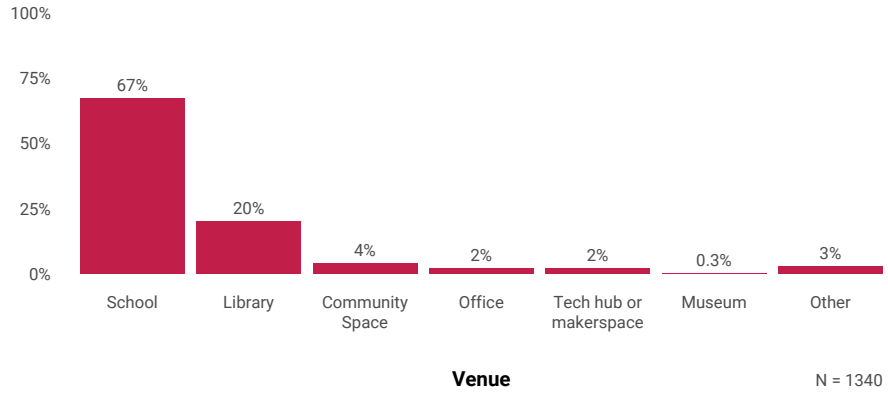
What country is your club based in?



- The top countries by number of responses were:
  - UK[1] (739 responses)
  - Australia (142 responses)
  - Canada (93 responses)
  - United States (71 responses)
  - New Zealand (50 responses)
- There were respondents from 59 countries in total (see appendix for full list).
- The countries listed above were also the five countries with the most clubs at the time of the survey.

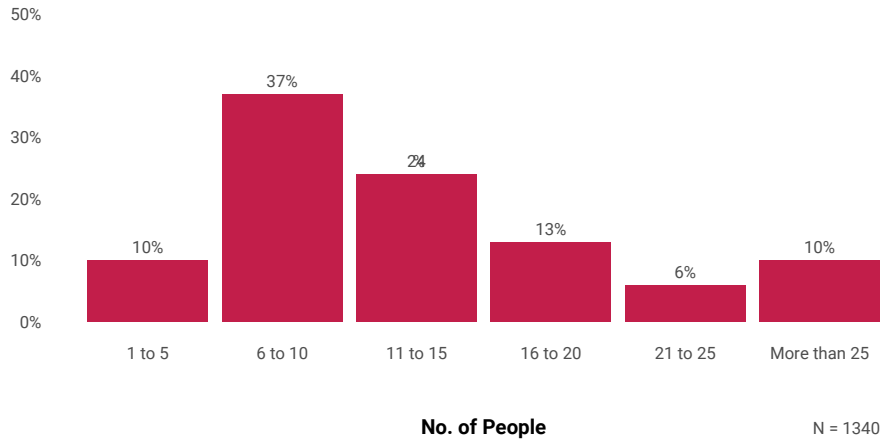
[1] UK includes Jersey and Guernsey

What type of venue is your club held in?



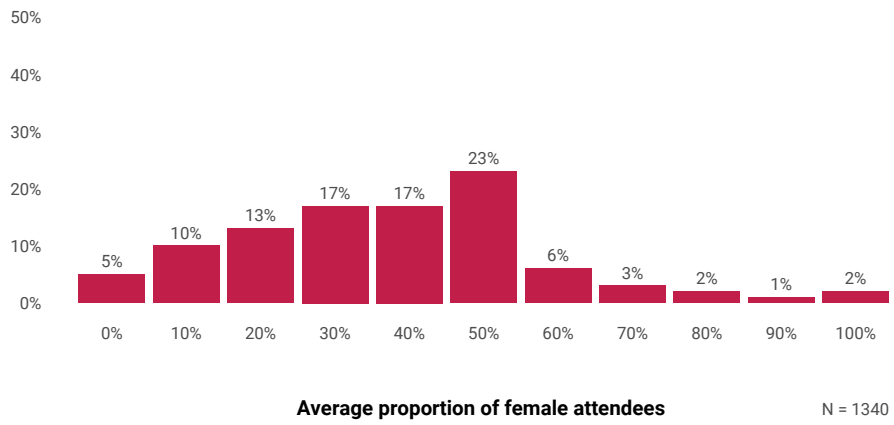
67% of respondents' clubs are hosted in schools, with a further 20% held at libraries.

How many young people typically attend one of your Code Club sessions?



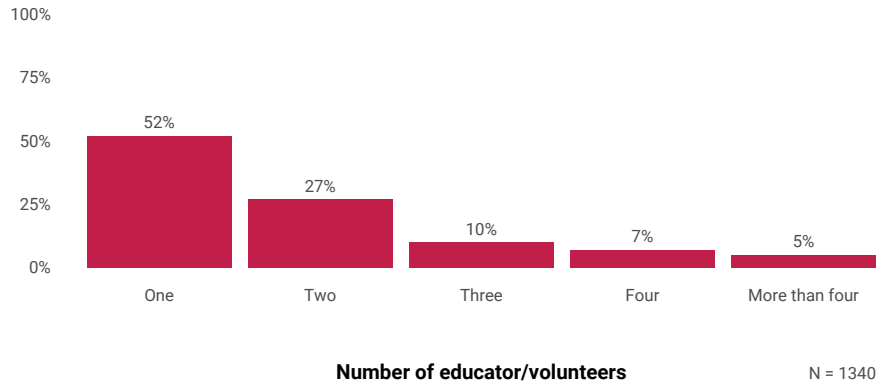
- The mean club size was 15 attendees, with a median figure of 12 attendees.
- Attendee numbers ranged from under 5 to over 30.
- The most common responses were 10 attendees (218 responses) and 15 attendees (151 responses).

Over the last year, roughly what proportion of young people attending your Club were girls?



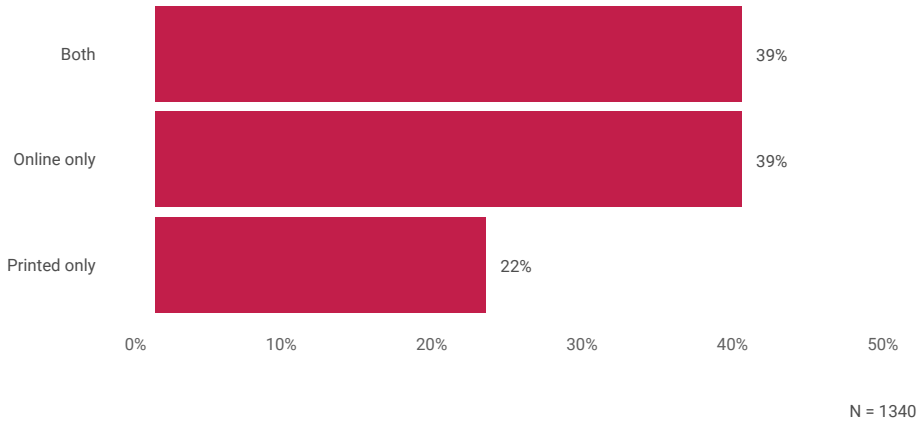
- 15% of respondents said their club had a higher proportion of girls than boys, and around a quarter reported equal proportions of boys and girls.
- Approximately 40% of Code Club attendees around the world are girls.

Including you, how many adults volunteer at your Code Club?



- 51% of educators and volunteers told us they were the only adult at their Code Club.
- 22% were from clubs where three or more adults volunteer.

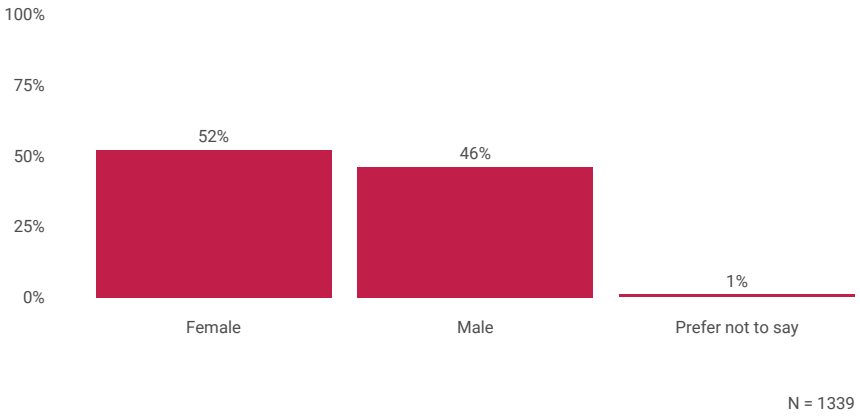
Do you use our resources and projects online or as printed worksheets?



- Code Clubs vary greatly in how they use our resources. While 39% indicated that they use a combination of printed and online resources, 39% use only online resources, and 22% only printed resources.
- There was no option in this question for volunteers to say that they didn't use Code Club resources at all, so some volunteers may have answered the question with resources from other sources in mind.

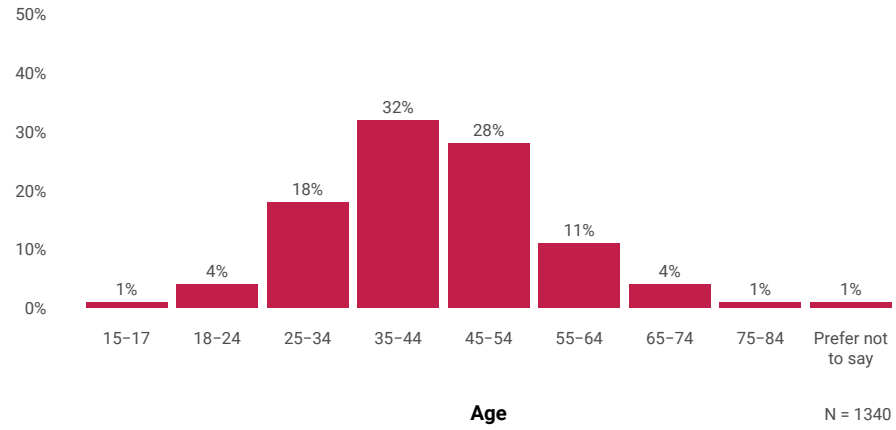
Headline results
Educator/volunteer characteristics

What is your gender?



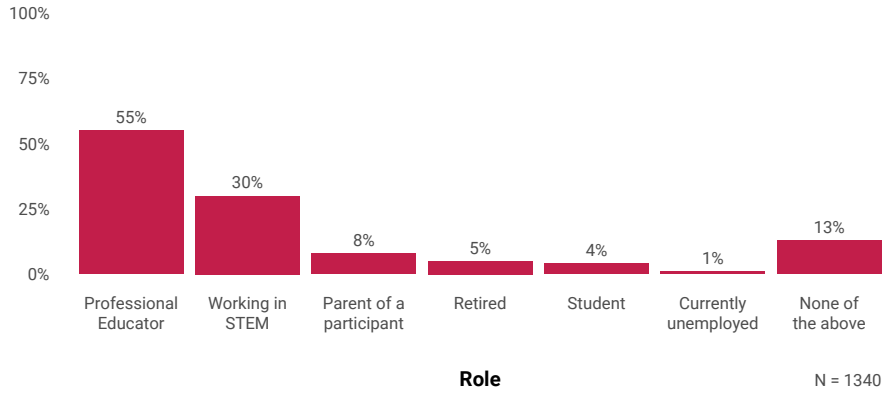
- The gender of educators and volunteers was fairly balanced: 52% of respondents were female and 46% were male.

What is your age?



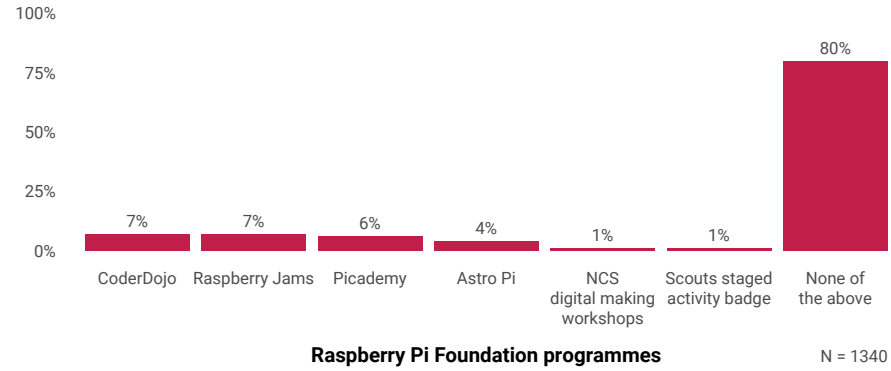
- There was a wide age range among educators and volunteers, but the most common responses were 35-44 (32%), 45-54 (28%), and 25-34 (18%).

Which of the following apply to you?



- Rather than ask educators and volunteers about their occupations specifically, we wanted to know more about their profiles more generally. Respondents could select as many options as they felt applied to them.
- 55% are professional educators, and 30% work in a STEM occupation.

Which other Raspberry Pi Foundation programmes have you taken part in in the last 12 months?

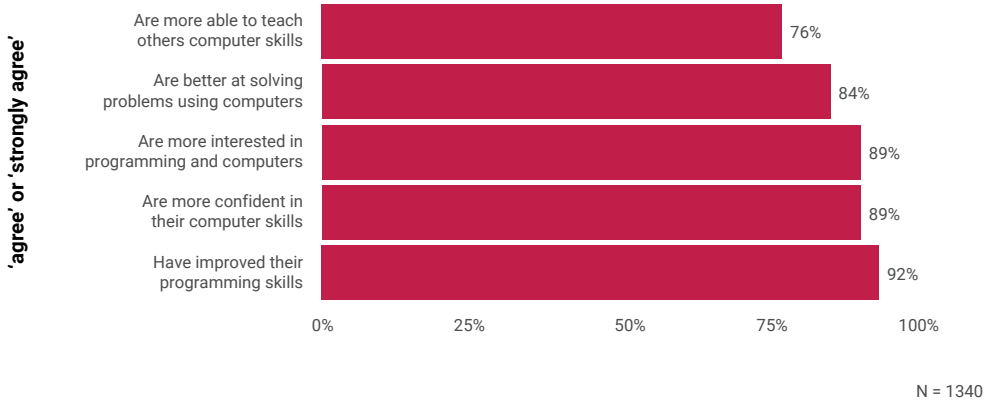


- 19% reported taking part in at least one other Raspberry Pi Foundation programme aside from Code Club, with 4% taking part in more than one additional programme.
- Raspberry Jams (7%), CoderDojo (7%), and Picademy (6%) were our most popular other programmes with Code Club educators and volunteers.

Headline results
Impact and safeguarding

Impact questions

Children come to Code Club to have fun and learn new skills, so we asked educators and volunteers about the skills and abilities young people in their club have improved since starting.



- 92% say that the children who participate in their Code Club have improved their programming skills.
- 89% say participants are more interested in programming and computers.
- 89% say participants are more confident in their computer skills.
- 84% say participants are better at solving problems with computers.
- 76% say participants are more able to teach others computer skills.

Safeguarding

Keeping children safe is paramount for Code Club, and we provide guidance and support based on our safeguarding policy.

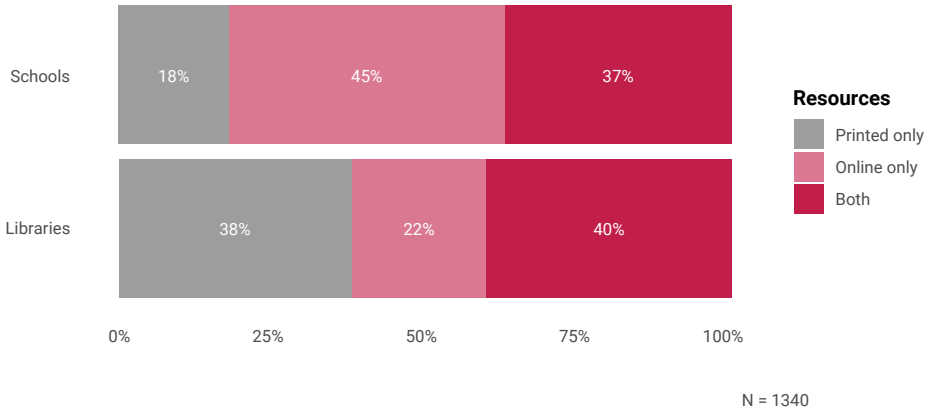
- 98% of educators and volunteers feel they have suitable guidance and support from Code Club to make their club safe for children
- 88% are aware of the Code Club safeguarding policy

Additional analysis

Differences in use of online and printed resources

We wanted to explore differences between the types of clubs that exclusively make use of either printed or online resources. This is important because the learning experiences of children in clubs may be different depending on how they use resources to support their learning.

- Educators and volunteers with clubs based in schools were twice as likely to solely use online materials as clubs based in libraries, where internet connectivity may be less reliable. 22% of library-based Code Clubs exclusively use online resources, compared to 45% of those in schools.

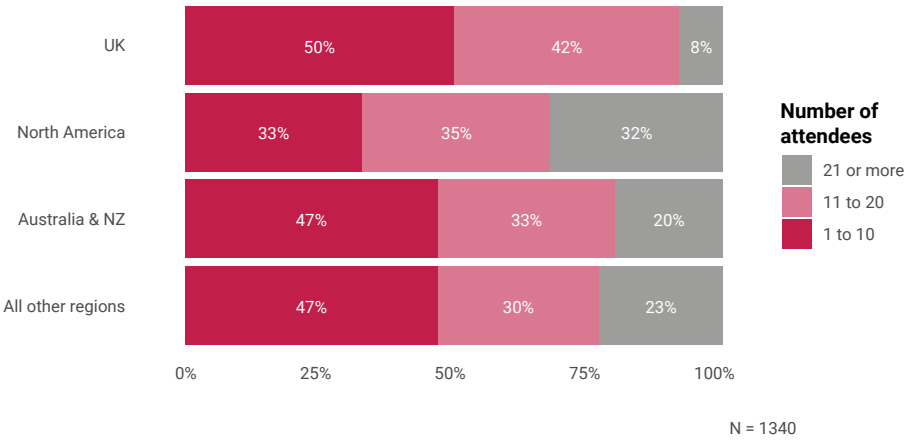


- Code Clubs with more attendees are less likely to use exclusively printed materials, possibly because they are held in larger, more established venues where internet access is more reliable.
  - 25% of clubs with between one and ten attendees exclusively use printed resources, compared to 21% of clubs with between 11 and 20 attendees, and 17% of clubs with 21 or more attendees.
- Clubs in the UK were most likely to use printed resources only, while clubs in North America were least likely.

Regional differences in how Clubs are run

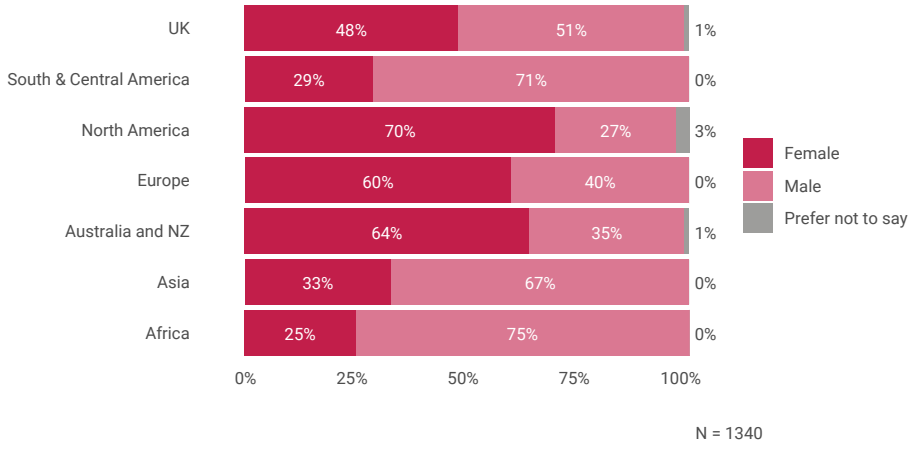
We support clubs around the world to run in whatever way suits them, so understanding differences in how clubs are set up between regions helps us to provide the best support we can.

- Generally, clubs in North America tended to have more attendees, and clubs in the UK tended to have fewer.
  - Educators and volunteers at clubs in the UK (739 respondents) indicated that the mean number of attendees was 12.
  - Across North America[2] (164 respondents), the mean was 20 attendees, and it was 15 for Australia and New Zealand (192 respondents)
  - Across all other regions together, the mean number of attendees was 17.
  - In the UK, only 8% reported that their club usually had 21 or more attendees, compared to 32% in North America.



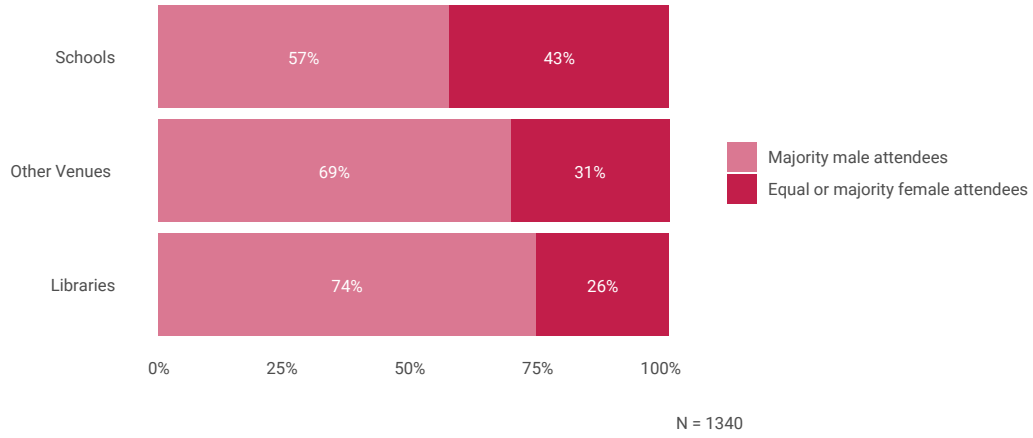
[2] USA and Canada

- There were also gender differences between educators and volunteers at clubs in different regions, although across the sample gender was fairly balanced.
  - In North America, Australia and New Zealand, and Europe (not including the UK), 60% or more of educators and volunteers were female.
  - In the UK, there were roughly equal numbers of male and female volunteers.
  - Across Asia (57 respondents), South and Central America (41 respondents), and Africa (24 respondents), volunteers and educators were predominantly male.
  - These gender differences may be partly explained by differences in venue across regions. For instance, schools are more likely to have a female educator or volunteer than other venues, and there are a higher proportion of clubs in schools in North America (81%) and Australia and New Zealand (72%) than in Africa (58%), Asia (46%), and South and Central America (58%).



Differences in clubs by gender balance of attendees

- Code Clubs are inclusive places to learn about coding, and we're committed to improving representation among girls at clubs. We've looked into the differences between clubs that have higher and lower proportions of girls, and found that clubs with higher female attendance are more likely to take place in schools.
- We asked educators and volunteers to estimate the approximate proportion of female attendees at an average session. We then combined responses into two categories: clubs with majority male attendees (those who answered between 0-40%, 829 responses) and clubs with equal/majority female attendees (those who answered 50-100%, 511 responses).
- There were only small differences in the gender balance of educators and volunteers at clubs with majority male attendees and clubs with equal/majority female attendees. 51% of educators and volunteers who reported volunteering at a majority male club were female, compared to 54% at those who reported volunteering at an equal/majority female club.
- We found that 76% of equal/majority female clubs took place in schools, compared to 62% in the majority male clubs, with more of the majority male clubs taking place in libraries (24% versus 14% for equal/female majority clubs).



How has Code Club benefited you and the young people in your club?

We asked educators and volunteers to tell us in more detail about how Code Club has helped them and the young people they reach. Feedback was very positive about the improved skills and confidence that Code Club has given young people, and many told us about how engaged and excited their students were to learn new skills.

Volunteer comments

"Personally it has helped to maintain my interest and skills in computing in retirement. For the young people in the club it has provided an opportunity to explore a far wider range of computing activities than those provided in mainstream primary school in an environment of self-directed learning." Bob (UK)

"Students are more confident in their computer and programming skills, they have improved their skills a lot. They have learned how to learn, how to solve problems and how to work in teams." Ivana (Croatia)

"More scientific thinking and identification of cause/effect relationships and variables. Increased leadership, especially in girls who are strong coders. Students are learning perseverance and problem solving skills. I love the amazing creativity with projects. They have shown me how to do things!" Ashleigh (Canada)

"We started with the basics and in my Code Club most of the students, especially girls, are from rural areas and with the help of the Code Club, I gave them the opportunity to learn in depth about computers and programming... today they are confidently programming and it's really great!" Kunal (India)

Conclusion

As a volunteer-led initiative, it is important that we focus on improving by listening to the feedback and experiences of our educators and volunteers. This survey has increased our understanding of how clubs are run around the world by a diverse range of people, and given insight into how Code Club is having an impact on the young people those educators and volunteers reach.

We asked questions about the impact of Code Club on the young people in the UK for the first time, and were pleased that a high proportion of educators and volunteers in the UK and around the world agree that Code Club has increased the problem-solving abilities, confidence in computer skills, and programming skills of young people.

We've learned about the range of experiences educators and volunteers bring to Code Club, and the many different ways they choose to run their clubs. Although many are professional educators, others are people working in STEM, students, parents of participants, and those who are retired. They range in age from under 17 to over 75, and make use of a variety of venues to run their clubs, though the majority of clubs take place in schools and libraries.

We've learned more about how clubs in different venues operate, noting that clubs based in schools (which account for 67% of survey responses) are more likely to have a higher proportion of girls attending than clubs in other venues. School-based clubs also use learning resources differently from those in other venues, being much more likely to use only online resources to support learning.

Regional differences in the gender balance of educators and volunteers have also been identified: whilst gender was fairly balanced across our entire sample, in some regions more educators and volunteers are female, while in others more are male.

We've also identified some areas where we will take action. We'd like to understand the local factors that contribute to clubs in different regions being of different sizes on average, particularly in North America, and there is work for us to do in understanding the factors that contribute to differences in gender balance between clubs. There are many clubs that use printed resources only, so we will continue to communicate the benefits of using our resources online where possible and develop new features to support learning via our online projects, with accreditation and assessment two areas of particular focus.

Our thanks again to all the educators and volunteers who took the time to complete the survey, and for the time they give in bringing the power of computing and digital making to children around the world.

Appendix

Countries of respondents

Club country	Total responses
United Kingdom	736
Australia	142
Canada	93
United States	71
New Zealand	50
Ukraine	41
Croatia	37
Brazil	29
France	15
India	13
Republic of Korea	12
Nigeria	9
Mexico	8
Bangladesh	7
Ireland	6
Malaysia	5
Spain	5
Ghana	3
Iran	3
Italy	3
United Arab Emirates	3
Zambia	3
Belgium	2
Bosnia and Herzegovina	2
Hong Kong	2
Japan	2
Jersey	2
Pakistan	2
Poland	2
Saudi Arabia	2

Club country	Total responses
South Africa	2
Albania	1
Algeria	1
Austria	1
Bahrain	1
Bulgaria	1
Burkina Faso	1
China	1
Cocos (Keeling) Islands	1
Cyprus	1
Czech Republic	1
Denmark	1
El Salvador	1
Gambia	1
Germany	1
Guernsey	1
Honduras	1
Kenya	1
Luxembourg	1
Netherlands	1
Papua New Guinea	1
Peru	1
Qatar	1
Romania	1
Sint Maarten	1
Tunisia	1
Turkey	1
Uganda	1
Vietnam	1

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