

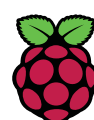
CoderDojo Annual Survey 2019 Report

Jonathan Dickins



CoderDojo

Raspberry Pi Foundation Research No. 13



Raspberry Pi



CoderDojo

CoderDojo Annual Survey 2019 Report

Jonathan Dickins

Raspberry Pi Foundation Research No. 13

Published in May 2020
by the Raspberry Pi Foundation

www.raspberrypi.org

ISSN 2514-586X

Introduction

CoderDojo is a global community of free, open, and local programming clubs for young people. Dojos are clubs where volunteers give 7- to 17-year-olds the opportunity to learn how to create with technology. Dojos are an informal, social environment where young people can create with code, learn new skills, and collaborate to create practical solutions to problems in their local areas and beyond.

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

- The characteristics of CoderDojo volunteers
- The diverse ways in which Dojos are set up and run
- The ways in which Dojos are changing over time
- The use of resources to support participants in Dojos
- The impact that CoderDojo is having on the young people taking part

coderdojo.com

About the survey

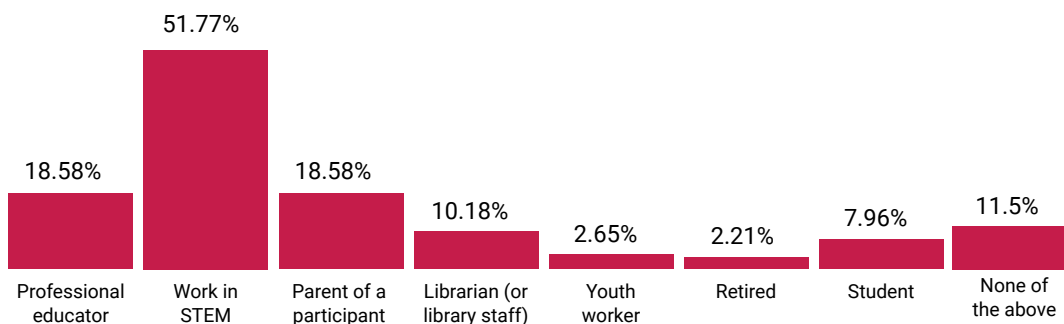
Our annual survey gives all CoderDojo volunteers the opportunity to give feedback and tell us more about themselves and their Dojo. To ensure robust, balanced results, we aimed to sample as broad a range of opinions as possible. To achieve this, we sent a randomly selected sample of Dojos more communications and incentives for completing the survey. Collecting survey responses from these randomly selected Dojos means that we can be more confident that the resulting data is representative of the CoderDojo community as a whole. This in turn means that the conclusions we draw from this data are more reliable. While we use the responses from all respondents (n = 672) to study broad patterns and gather qualitative feedback, all quantitative data shown in this report is from the randomly selected sample (n = 230).

The characteristics of CoderDojo volunteers

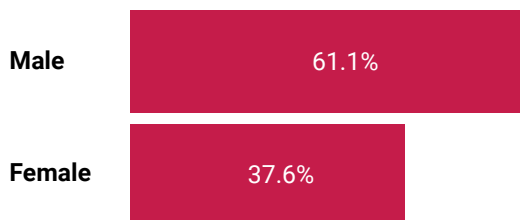
The characteristics of CoderDojo volunteers

- Just over half of volunteers work in STEM (science, technology, engineering, or mathematics) occupations, but professional educators, librarians, and students are also well represented. Many volunteers are also parents of young people who attend.

Which of these best describes your role?



- 61% of volunteers are male, and 38% are female.



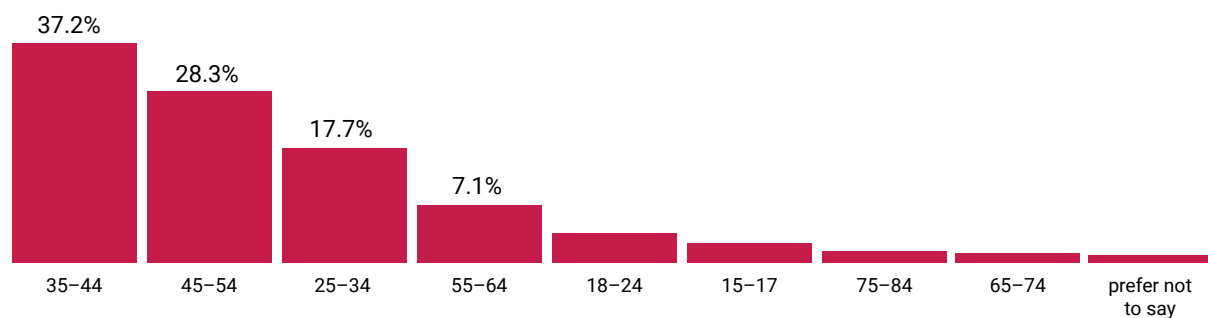
- We found some interesting differences in the backgrounds of volunteers of different genders. While both male and female volunteers are more likely to come from STEM occupations, the backgrounds of female volunteers are more varied; for example, a greater proportion of female volunteers than male volunteers are professional educators or librarians.



**Male volunteers
are more likely than female
volunteers to come from a
STEM background**

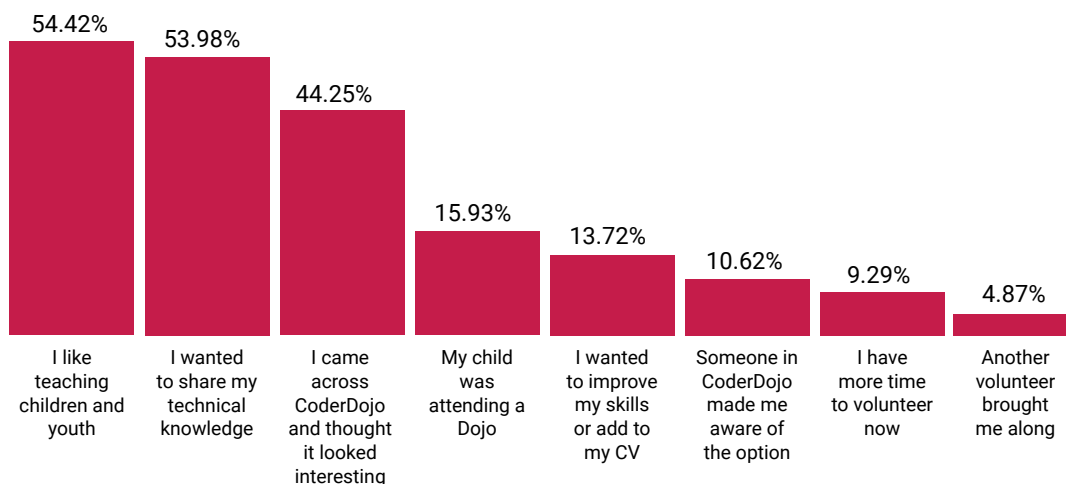


- More than 60% of volunteers are between the ages of 35 and 54, and around a quarter are between the ages of 18 and 34. Volunteers between the ages of 45 and 64 are more likely to be working in STEM occupations, while volunteers between the ages of 15 and 24 are more likely to be youth workers or students.



- There are three prominent motivations for CoderDojo volunteers, which reflect the varied backgrounds of volunteers. 54% volunteer because they like teaching, 54% volunteer because they wanted to share their technical knowledge, and 44% volunteer because they find taking part in CoderDojo interesting.

What motivated you to start volunteering?

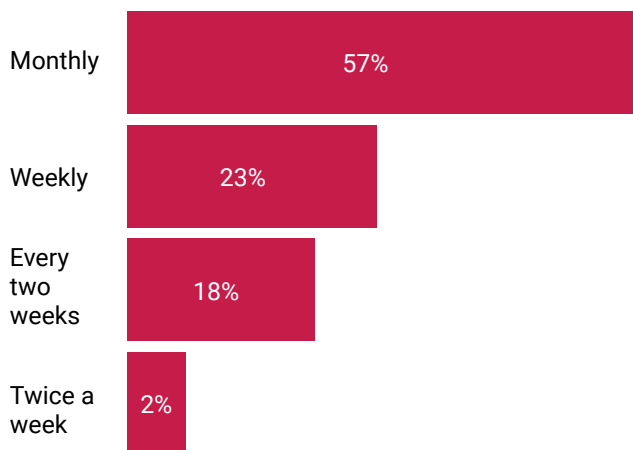


The diverse ways in which Dojos are set up and run

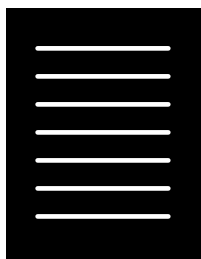
The diverse ways in which Dojos are set up and run

- Just as there is variety in the backgrounds of volunteers, we found differences in how volunteers choose to set up and run their Dojos. The average Dojo meets each month for 2 hours, but many Dojos run weekly or fortnightly, or run longer or shorter sessions. Dojos that run in schools are more likely to meet every week, but across all other venues, it is most common to meet every month.

How regularly does your Dojo meet?



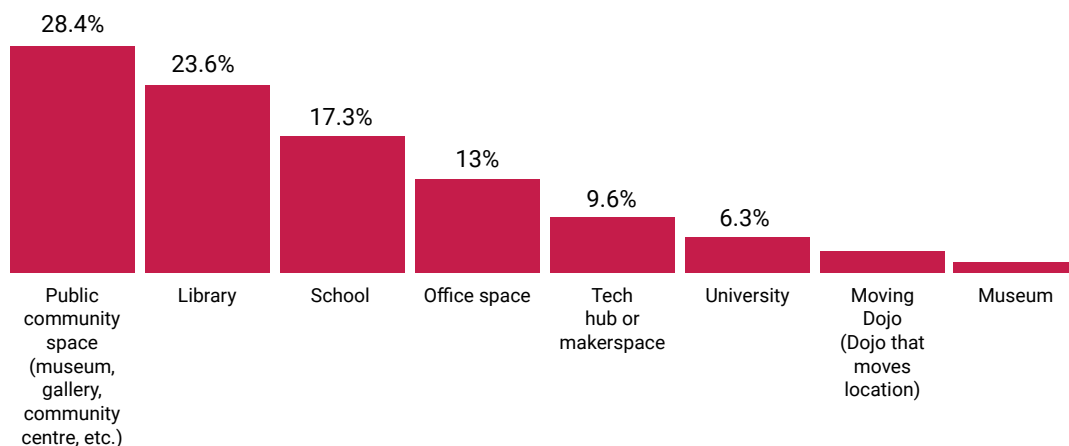
- Overall, public community spaces (e.g. museums, galleries, and community centres) are the most common venue, accounting for 28% of Dojos. Libraries and schools are also popular venues, while some organisations run Dojos in their offices. Female volunteers are most likely to be running their Dojo in a library, whereas male volunteers are most likely to be using a public community space. This could reflect the different backgrounds of volunteers of different genders, as discussed in the previous section.



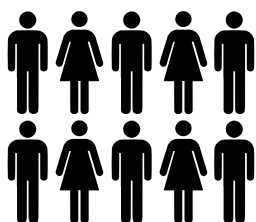
**Dojos in schools
meet more
frequently than those
in other venues**



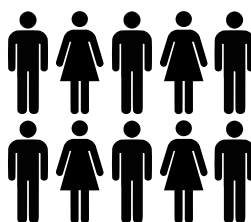
Where is your Dojo hosted?



- The average Dojo has 5 volunteers and 20 young people taking part in any given session, but we found differences in the number of attendees by venue. 6% of Dojos take place at universities, and some of these Dojos are very large, with the average university-based Dojo having 49 attendees. In comparison, Dojos that take place in public community spaces tend to be smaller, with 14 attendees on average.



**The average
Dojo has 20
attendees**



- 33% of the young people taking part in CoderDojo are girls, and we found some interesting patterns in the proportion of girls attending Dojos in different venues. The proportion of female attendees is slightly higher than average at Dojos in schools and libraries — where there is also a greater proportion of female volunteers — and slightly lower than average at Dojos in public community spaces.

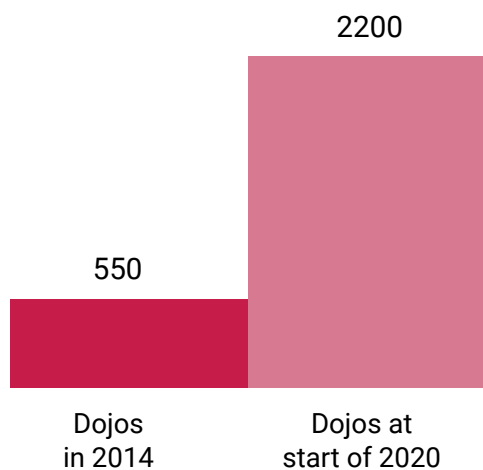
33%

**of CoderDojo
attendees are
female**

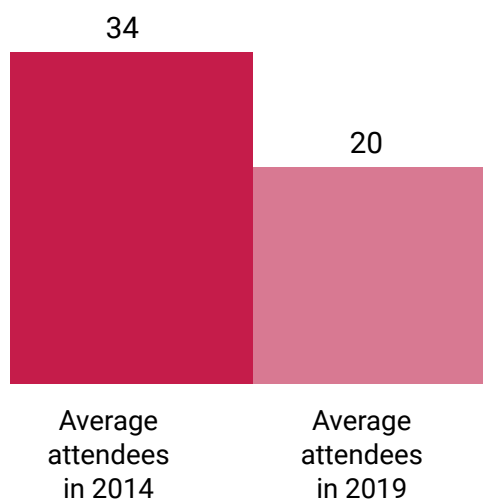
How Dojos are changing over time

How Dojos are changing over time

- We started running annual surveys of CoderDojo volunteers in 2014, so this survey is the sixth we have conducted. While the questions asked have largely changed over time, there were some opportunities to investigate how the average Dojo has evolved since 2014.
- At the end of 2014, there were 550 Dojos running in 56 countries, compared to 2200 running in 112 countries at the start of 2020.



- Dojos in 2014 tended to be larger: Dojos had 34 attendees on average, with that average influenced by a few very large Dojos.



- While many of those Dojos continue to run today, smaller Dojos have become more common, with the average attendance in 2019 standing at 20 young people. Many cities and towns (particularly in Ireland and the UK) now have multiple Dojos, so the fact that average attendance per Dojo has decreased in recent years could reflect people choosing to go to smaller Dojos that are more local to them.
- The proportion of girls taking part has also increased. While in 2014, 30% of attendees were girls, this proportion decreased to 25% in 2015, according to volunteers. Since then, we've recorded small increases in the proportion of female attendees, in 2016, 2017, and 2018. We continue to focus on increasing the number of girls taking part in CoderDojo.

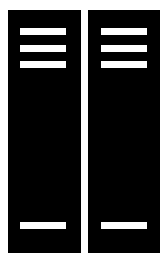
Female attendees in 2014

30%

Female attendees in 2019

33%

- The profile of volunteers has also changed. In 2014, the largest category of CoderDojo volunteers was technology professionals (60%), followed by parents (12%) and students (7%). Since 2014, the proportion of volunteers who are professional educators and librarians has grown most rapidly. Professional educators now make up 19% of volunteers, and librarians make up 10%. These changes have also reflected changes in venue – in 2014, libraries made up 11% of all Dojos, compared to 24% of Dojos in 2019.



Libraries made up 11% of CoderDojo venues in 2014, compared to 24% in 2019



- Interestingly, while the proportion of volunteers who are professional educators has risen, the proportion of Dojos taking place in schools has decreased (from 24% in 2014 to 17% in 2019). Since joining forces with the Raspberry Pi Foundation in 2017, CoderDojo has suggested that volunteers looking to start Dojos in their school should instead consider starting a Code Club. School-based Code Clubs typically run on weekdays after school and are open only to the school's pupils. On the other hand, professional educators are advised to choose public venues when starting Dojos, which typically run at weekends and are open to young people from the local area.

How Dojos use resources to support participants

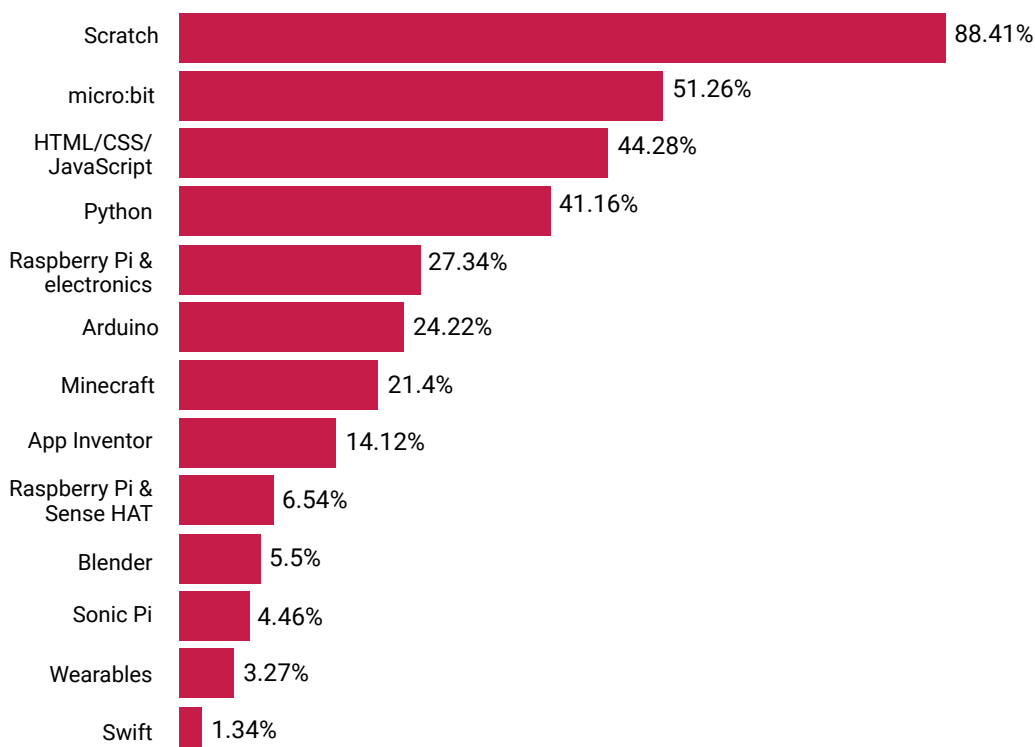
How Dojos use resources to support participants

- Dojos are a place for young people to focus on projects that are important to them, and using resources to learn and develop new skills is something that all Dojos encourage. It's clear that individual Dojos use a wide variety of resources and formats, often using projects developed by the Raspberry Pi Foundation alongside other resources, across a range of topics, both online and in print.



- While just under 70% of Dojos use at least some resources provided by the Raspberry Pi Foundation, the majority use a mixture of resources, including projects that they source online or create themselves. 51% of volunteers create their own resources, and 46% use online resources from other organisations.

What kinds of projects or resources do you use?



- We took the opportunity to ask why volunteers chose to create their own resources rather than using those available online. By far the most popular reason for volunteers creating their own resources was that they enjoyed doing so, with 68% selecting this response. 29% did so because they couldn't find resources available on their topic of choice, and 29% did so because they couldn't find resources in their language. Projects from the Raspberry Pi Foundation are currently available in 26 languages, and we are continuing our efforts to provide translations of our content and support Dojos to use relevant, localised resources.



50%

**of Dojos use a
mixture of online
and printed resources**



34%

**use online
resources only**

- We found that Dojos in different venues tend to make use of different formats of resources. Dojos running in libraries were more likely to have a reliable internet connection, and were less likely to use solely printed resources, whereas internet connection was sometimes less reliable in other venues such as public community spaces, and Dojos in these venues were more likely to use only printed resources.

The impact that CoderDojo is having

The impact that CoderDojo is having

92%

of volunteers agree that the young people in their Dojo have improved their programming skills

90%

of volunteers agree that the young people in their Dojo have improved confidence in their computer skills

87%

of volunteers agree that the young people in their Dojo are more interested in programming and computers

What is the best thing about CoderDojo?

"CoderDojo is helping kids to get out of their comfort zone and to start thinking about solving problems."

Adrian

"It helps kids develop a can-do attitude and demystify the technology while learning to go forward with other kids."

Amraoua

"Seeing kids' enthusiasm for what they're doing; when they come bursting in, dying to tell you the 'eureka' idea they've had for a project they want to try."

Fraser

"CoderDojo is one of the best things to happen to young people in Africa by letting the next generation of leaders be their own problem-solvers through programming and technology."

Joshua

"Seeing the excitement in the kids when they figure out something new."

Felicity

- We asked volunteers to tell us about the impact that taking part in CoderDojo is having on the young people that they reach. Generally, volunteers were most positive about the impact of CoderDojo on young people's programming skills, their computer skills more generally, and their confidence in using these skills.
- 92% of volunteers agree that since taking part in CoderDojo, the young people that they reach have improved their programming skills, and 90% reported that the young people that they reach have improved confidence in their computer skills.
- Many Dojos give attendees the opportunity to mentor others as they develop their own skills. The main role of a mentor is to help attendees through the basics of coding, and to assist them in their own self-led learning when they create their own projects. Reflecting this, 73% of volunteers told us that attendees at their Dojo are more able to teach others computer skills.
- We also asked volunteers what the best thing is about CoderDojo. Common themes that emerged were the fun and informal atmosphere, the open-ended nature of Dojos that means attendees can develop their own projects, and the problem-solving skills that are developed as attendees work on their projects.

