

# final\_report\_draft

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## 1 The Carpentries: Programmatic Assessment Report

### 1.1 2017 Year End and 2018 Q1

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### 1.2 Part 1: Workshops over time

#### 1.2.1 Workshops by Carpentry by Year

We began systematically recording data for our workshops in 2012. We can use this data to investigate how have The Carpentries have grown over the years in terms of number of workshops per year and how Data Carpentry has grown in comparison with Software Carpentry. For these analyses, we will consider only Software Carpentry and Data Carpentry workshops held between January 1st, 2012 and March 31st, 2018. Instructor Training events are analyzed in a later portion of this report.

For each of our workshops, we collected the following data:

variable	definition
slug	Unique identifier for each workshop. Takes the form YYYY-MM-DD-sitename.
start	Start date of the workshop. Takes the form YYYY-MM-DD.
attendance	Number of learners at the workshop.
host_name	Institution that hosted the workshop.

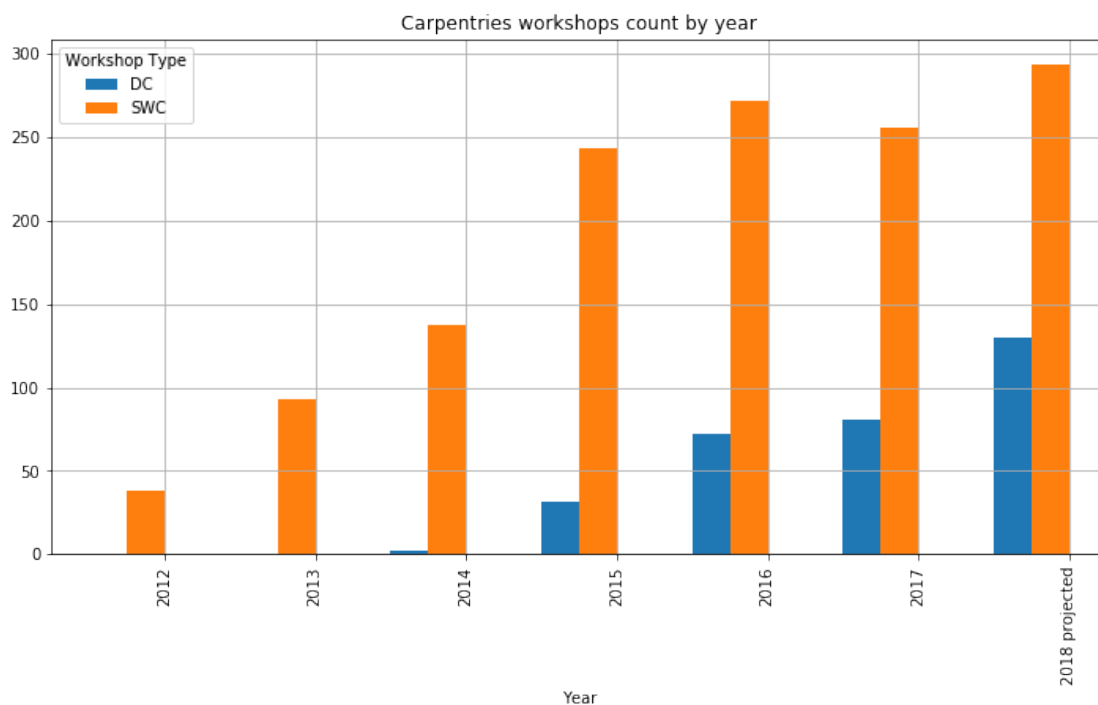
variable	definition
country	The two-letter country code for the country in which the workshop was held.
workshop_type	Whether this is a Software Carpentry (SWC) or Data Carpentry (DC) workshop.

### 1.2.2 The Carpentries workshops by year.

The table and chart below show the total number of Data Carpentry and Software Carpentry workshops held each year, including a projection for 2018 based on actual 2017 Q1 data relative to 2017 full year data.

**Table 1. The Carpentries workshops by year.**

**Figure 1. The Carpentries workshops by year.**



The number of Software Carpentry and Data Carpentry workshops appear to have remained roughly steady for the past several years, after a sharp jump from 2014 to 2015. The year 2015 was the first year in which The Carpentries had staff and a dedicated database to track workshop data, so some of this growth may instead reflect a growth in internal systems.

The data shown here may not account for unreported self-organized workshops. Although The Carpentries attempts to collect data on all workshops run under "The Carpentries" brand, sometimes institutions may run a workshop without reporting it back to The Carpentries staff. Thus, if there has been a shift from more centrally-organized to more self-organized workshops, this may cause an underestimate of our workshop growth. We are working to improve data collection to have more accurate reflections of our scope of work.

This may also reflect a shift to sites running a variation of Carpentries lessons, rather than official full Carpentries workshops. While we've known anecdotally that this happens often, we have not systematically collected any data on when or how Carpentries lessons are used in other contexts.

### 1.2.3 Workshops by Carpentry by Year and Country

The table and chart below show a count of the number of Carpentry workshops (SWC or DC) that took place in each country each year from 2012 through 2017. This data can help us to see geographic trends in our community and in particular, in which geographic regions The Carpentry community is growing.

Projections for 2018 are not included here as many countries do not have enough of a history for us to base projections on. Projections for countries with a longer history or more activity are shown below.

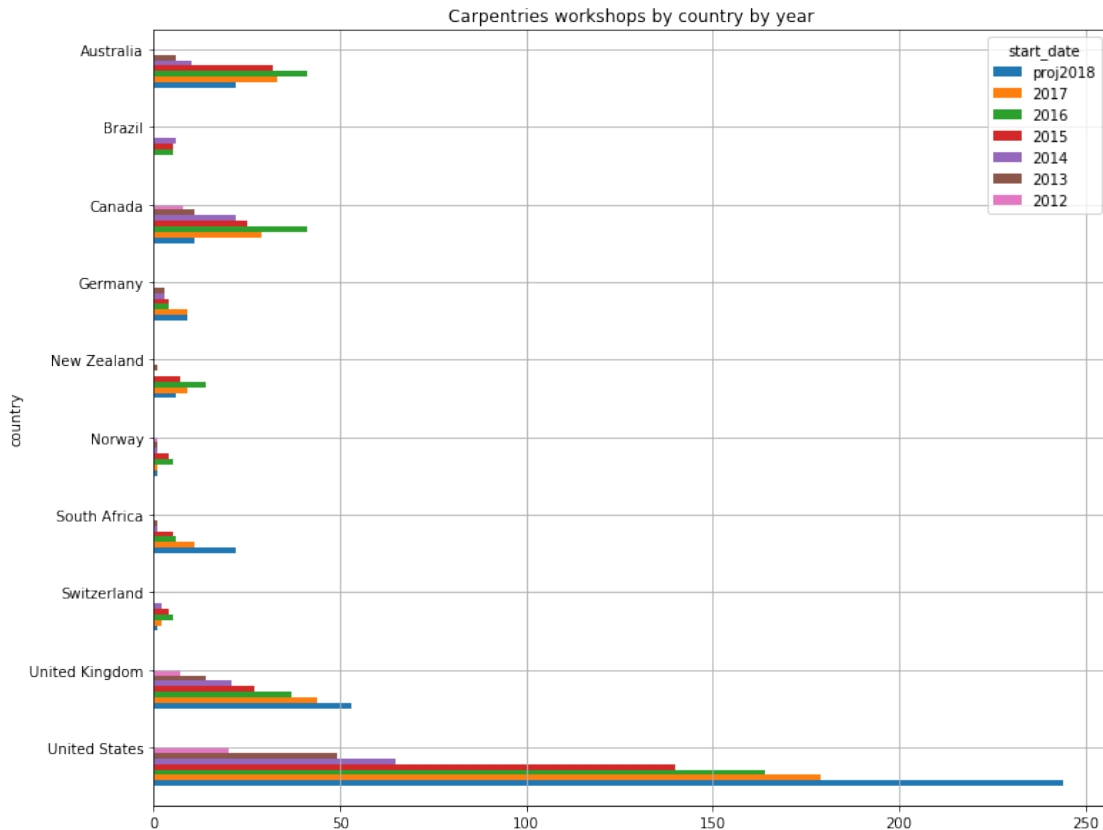
In many countries, we have seen a steady increase in the number of workshops run. In several countries though (Australia, New Zealand, Canada), we have seen a decline in the number of workshops run. This may be due to the reasons cited above, including unreported self-organized workshops or an increase in variations on Carpentries workshops. In either case this is a motivation for The Carpentries to improve data collection and methods to understand our scope of work beyond our centrally coordinated workshops.

Decreases in the number of workshops run in some countries may also be accounted for by shifts in our instructor community. Carpentries activity is sustained by our instructors. Some instructors may move to new geographies or to new career phases. Without a larger community in place, these geographies may not have had the capacity to sustain their activity. This is a motivation for The Carpentries to build strong and sustainable communities, with systems that account for individual turnover.

**Table 2. The Carpentries workshops by year and country.** The table below is a summary of all Carpentries workshops with the year and country they were held in.

1.2.4 Table 3. All countries having hosted at least 10 workshops from 2012 through 2018 (projected)

1.2.5 Figure 3. All countries having hosted at least 10 workshops from 2012 through 2018 (projected)



### 1.2.6 Which countries had their first workshop in 2017?

Four countries, all in Africa, had their first workshop in 2017. This is representative of the significant growth we've seen in this part of the world. (Include information about new workshop administrators and task force in Africa)

## 1.3 Attendance at workshops

### 1.3.1 Workshops missing attendance

After running a workshop, The Carpentries staff asks hosts or instructors to submit attendance data to us. In some cases, this is detailed account of the number registered and the number attended each day. In other cases, this is a best estimate by the host or instructors.

In some cases, the hosts or instructors do not report back on attendance data. From 2012 through 2018 Q1, 122 of 1323 (about 9%) workshops were missing attendance. While this is not a large percentage of total workshops, it is indication for The Carpentries to understand why

attendance data may not have been shared. It could be because the hosts or instructors were uncomfortable sharing low numbers, because the hosts or instructors didn't have clear systems to collect and share attendance numbers, or other reasons. The Carpentries should better understand these reasons in order to address them.

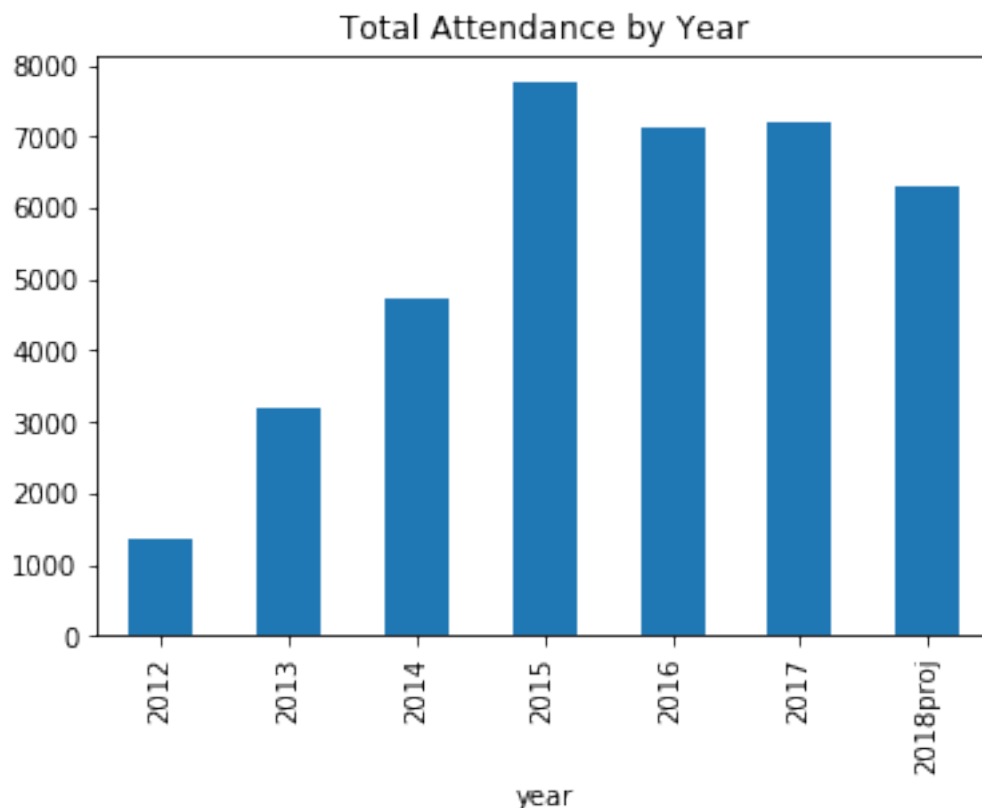
For the analyses below, workshops missing attendance are excluded from the analyses. Because low attendance is a possible factor in not having reported attendance, replacing missing attendance data with means would not be an accurate reflection of our numbers.

### 1.3.2 Total attendance by year: Table view

This table shows the total number of learners at Carpentries workshops each year.

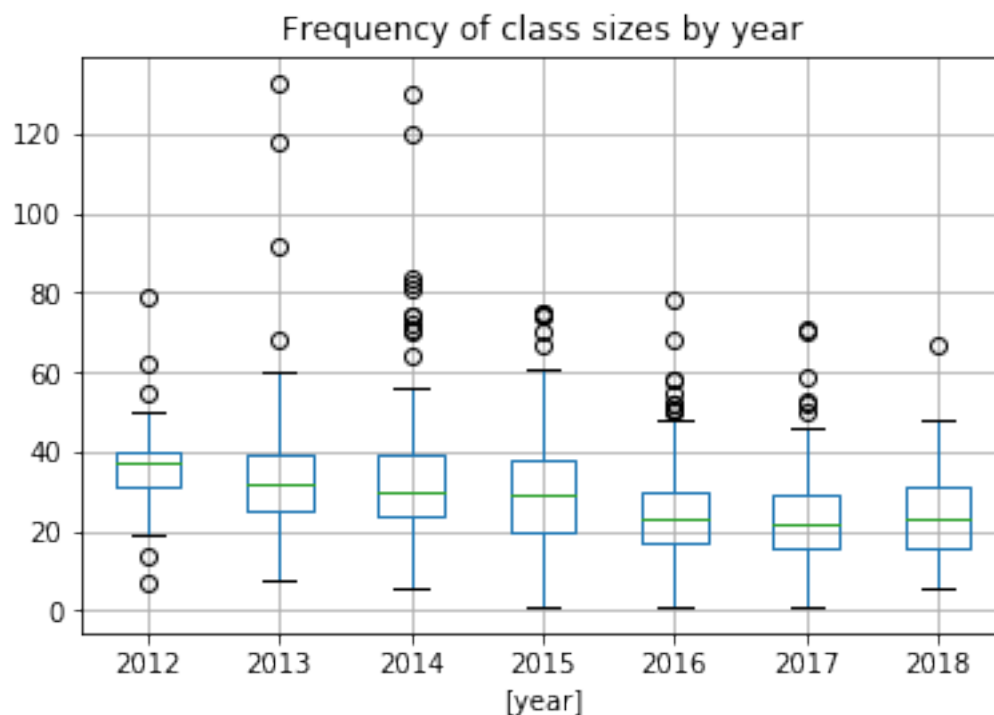
Based on the number of learners in the first quarter of 2017, we anticipate a drop in the number of learners we will see in 2018. This may be connected to class sizes getting smaller. While we anticipate running more workshops in 2018, we may see a trend towards smaller, more intimate settings.

### 1.3.3 Total attendance by year: Chart view



### 1.3.4 Box plot showing frequency of class sizes

This box plot shows the range of our class sizes, and demonstrates a trend towards smaller classes in the past few years.



### 1.3.5 Binned attendance by year

This table shows by year, how many workshops had 1-10 learners, 11-20 learners, and so on.

## 1.4 Instructor Training

This table lists all instructor training events the Carpentries has held since 2012. The "count\_badged" column is a total of all individuals from that event with at least one badge. We are not distinguishing between Software Carpentry and Data Carpentry badges.

### 1.4.1 Number of instructor training events by country

This table shows how many training events took place in each country. Inperson events are noted as taking place in a specific country. All online events are noted as online, even if the trainees came entirely from one country.

### 1.4.2 Binned completion rates for instructor training events by year

This shows the count of events by completion rates. For example, six events in 2016 had a completion rate under 25%. The counts are binned by quartiles, separating out events with 100% completion rates (two events total).

### 1.4.3 Attendance and number badged by year

**Total attendance by year** This table shows the total number of trainees at instructor training events each year by country.

**Total badged by year** This table shows the total number of trainees who were awarded badges at instructor training events each year by country.

**Percent of trainees badged per year** This is calculated from the above two tables. Note the country data shows the country the event was held in, not the country the trainee is based in. The year is the year the event was held, not the year the badge was issued.

### 1.4.4 Comparison: Inperson vs Online Training Events

The table and char below show the number of training events we have held each year, separated by online and inperson events.

Number of events per year

