

# Open University Data Analysis

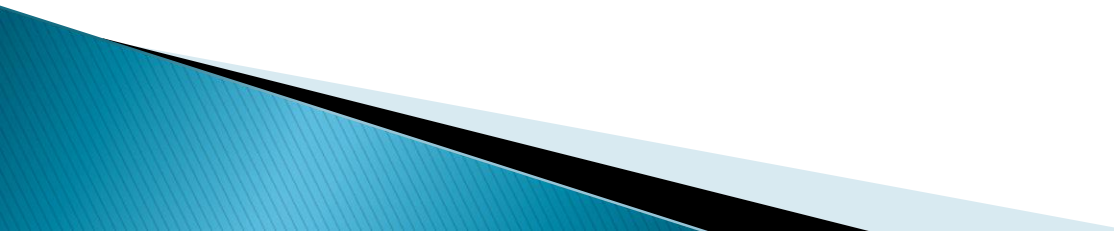
– Shravan Kumar Chandrasekaran



“....a public distance learning and research university, and one of the biggest universities in the UK for undergraduate education...”

– Open University Wikipedia Page

# Open University has two key drivers of success

- 1 Total number of students enrolled during an academic calendar**
  - 2 Rate of course completion in an academic calendar**
- 

Course completion rate can be quickly remedied by actively testing out different teaching methodologies and course content

## Total number of students enrolled

- ▶ External Focus
- ▶ Marketing Effort
- ▶ Longer result–  
timelines

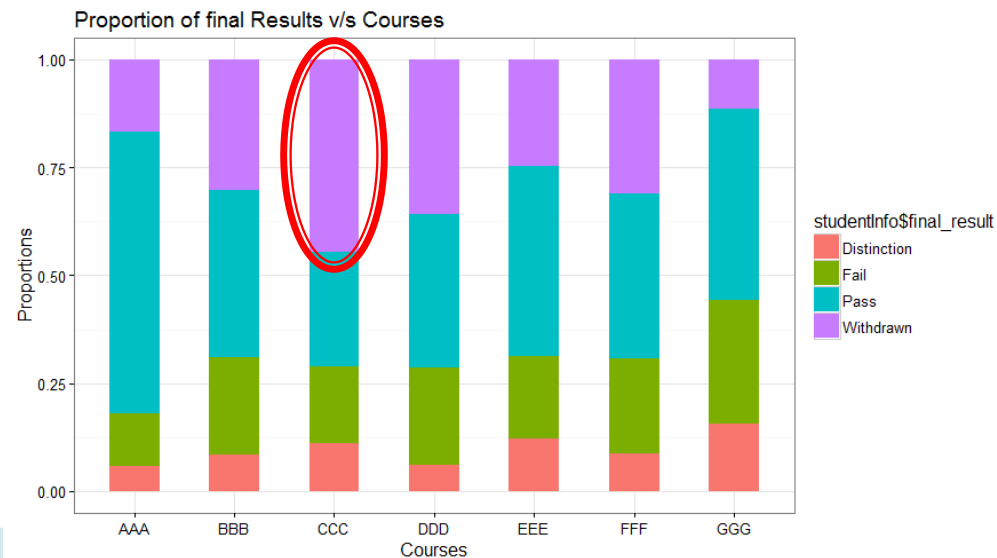
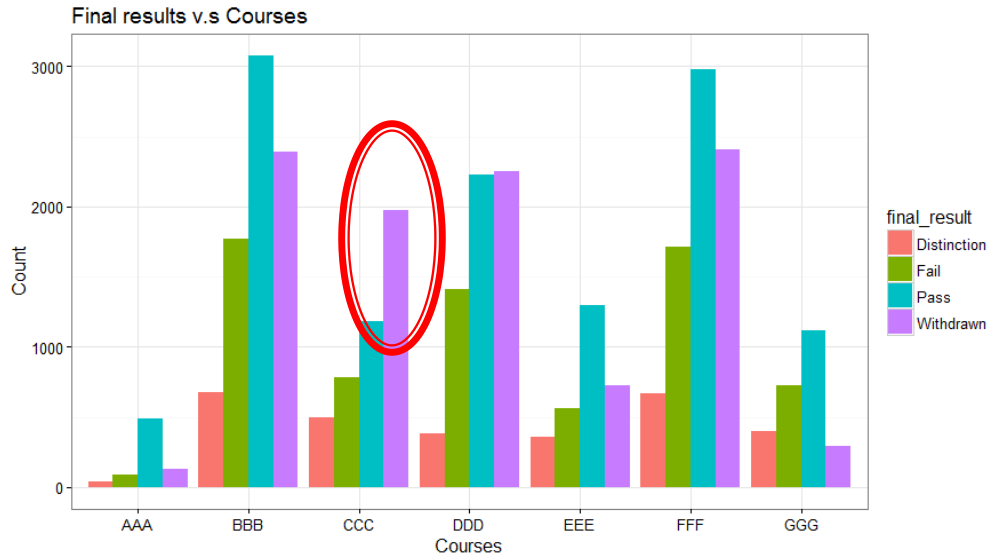
## Course completion rate

- ▶ Internal Focus
- ▶ Governance Effort
- ▶ Shorter result–  
timelines

To rapidly iterate and test out results, one of the more impactful questions to ask would be:

“...How do we increase course completion rate?...”

Although total number of withdrawals from “BBB” and “FFF” are higher than other courses, large proportion of students from “CCC” are dropping out



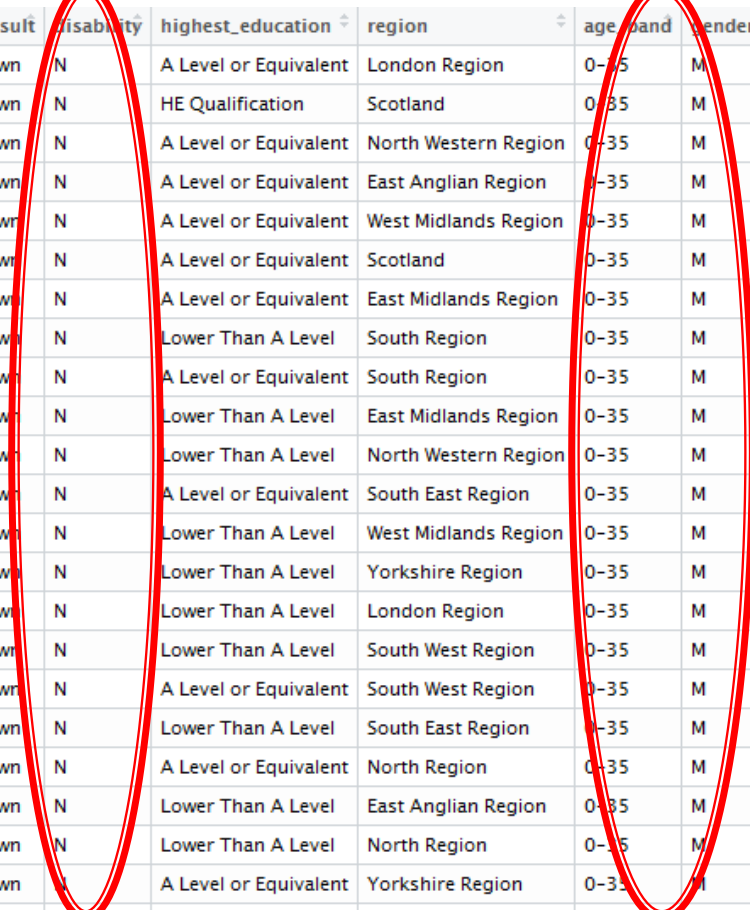
There are two primary reasons driving withdrawal rates for “CCC”

- 1 **People**
- 2 **Course Structure**

People

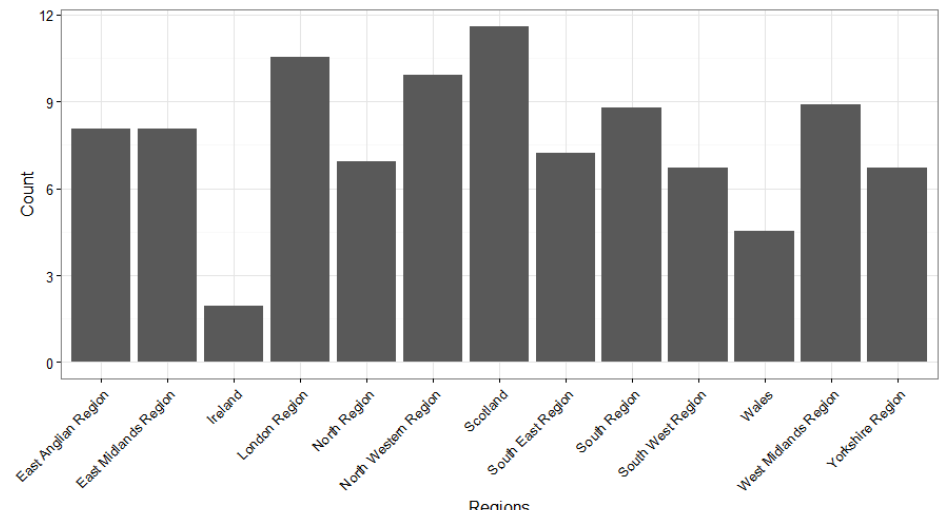
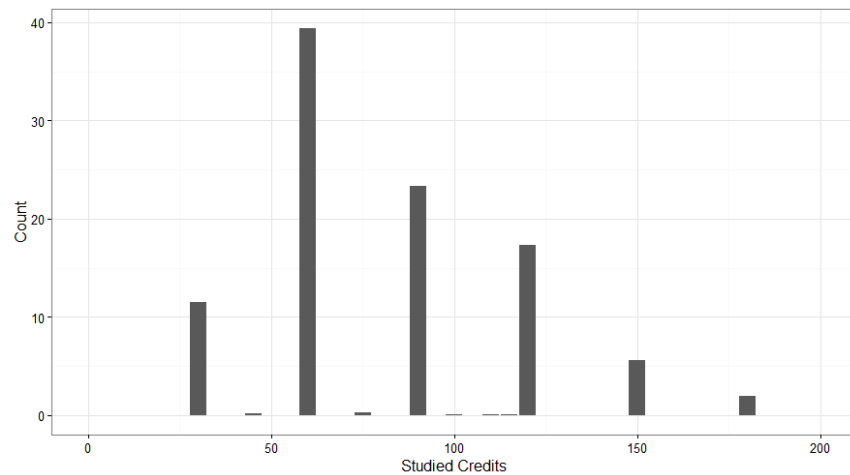


Male students who are not disabled between age of 0–35 contribute vastly to the withdrawal in “CCC”



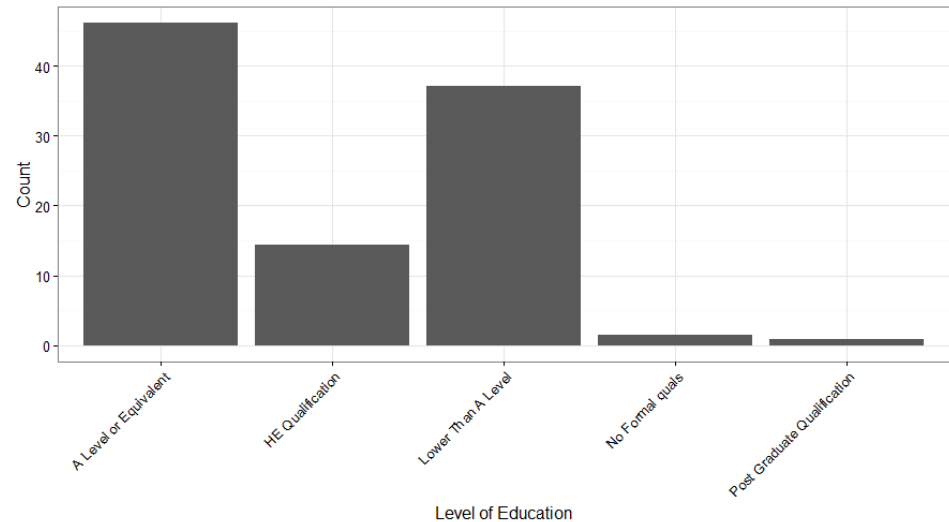
final_result	disability	highest_education	region	age_band	gender	Freq
Withdrawn	N	A Level or Equivalent	London Region	0–35	M	55
Withdrawn	N	HE Qualification	Scotland	0–35	M	47
Withdrawn	N	A Level or Equivalent	North Western Region	0–35	M	46
Withdrawn	N	A Level or Equivalent	East Anglian Region	0–35	M	44
Withdrawn	N	A Level or Equivalent	West Midlands Region	0–35	M	43
Withdrawn	N	A Level or Equivalent	Scotland	0–35	M	41
Withdrawn	N	A Level or Equivalent	East Midlands Region	0–35	M	40
Withdrawn	N	Lower Than A Level	South Region	0–35	M	40
Withdrawn	N	A Level or Equivalent	South Region	0–35	M	36
Withdrawn	N	Lower Than A Level	East Midlands Region	0–35	M	35
Withdrawn	N	Lower Than A Level	North Western Region	0–35	M	35
Withdrawn	N	A Level or Equivalent	South East Region	0–35	M	35
Withdrawn	N	Lower Than A Level	West Midlands Region	0–35	M	35
Withdrawn	N	Lower Than A Level	Yorkshire Region	0–35	M	31
Withdrawn	N	Lower Than A Level	London Region	0–35	M	30
Withdrawn	N	Lower Than A Level	South West Region	0–35	M	30
Withdrawn	N	A Level or Equivalent	South West Region	0–35	M	29
Withdrawn	N	Lower Than A Level	South East Region	0–35	M	28
Withdrawn	N	A Level or Equivalent	North Region	0–35	M	27
Withdrawn	N	Lower Than A Level	East Anglian Region	0–35	M	26
Withdrawn	N	Lower Than A Level	North Region	0–35	M	26
Withdrawn	N	A Level or Equivalent	Yorkshire Region	0–35	M	22

# Deep diving into male students in age group of 0–35 who are not disabled who have withdrawn from “CCC” to better understand demography



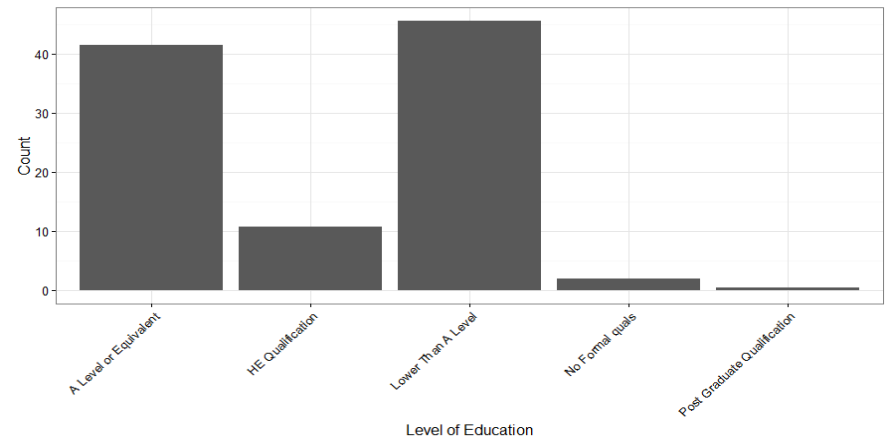
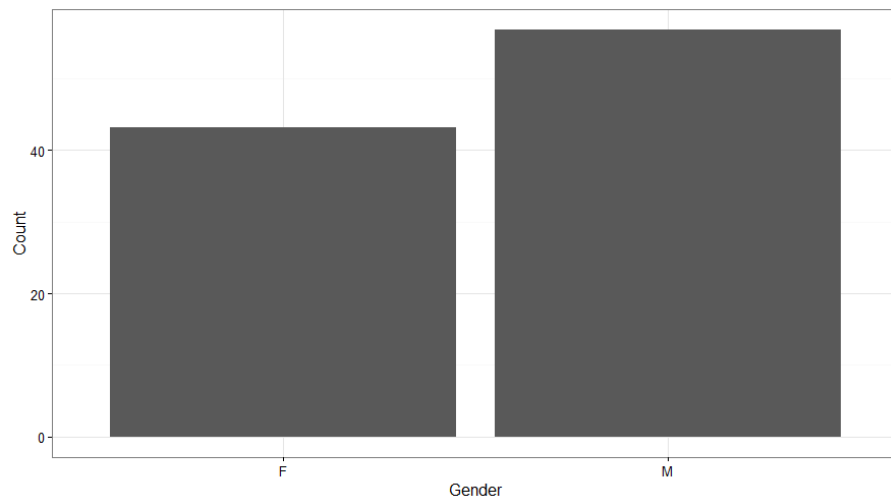
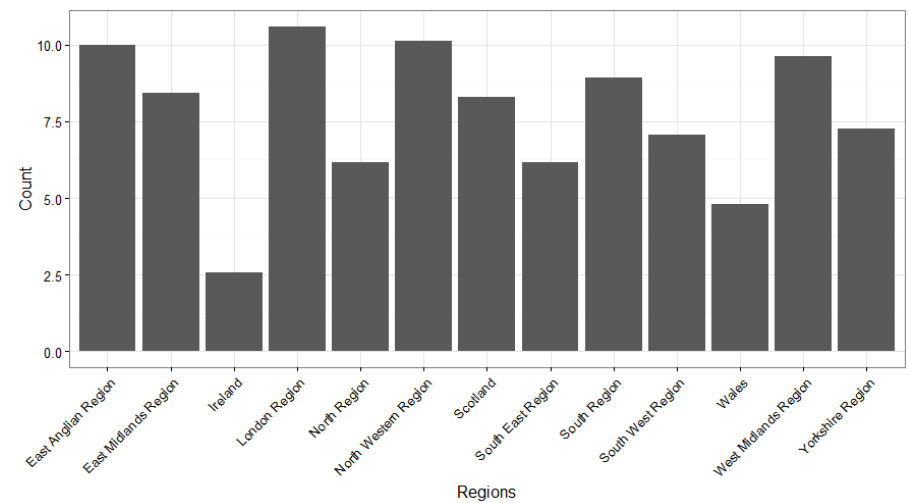
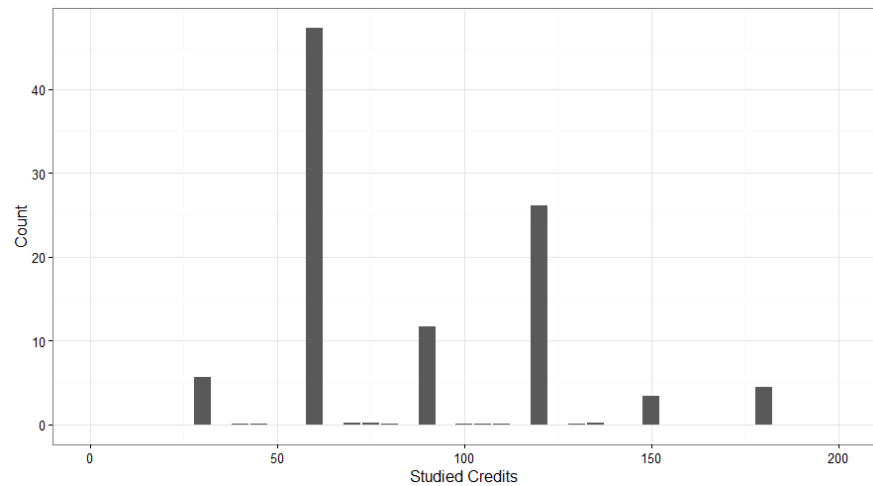
Majority of this population segment

- Have 60 credits
- Are from Scotland
- Have A Level or Equivalent



# Comparing results with the overall population who have withdrawn from courses

final_result	possibility	highest_education	region	age_band	gender	Freq
Withdrawn	N	Lower Than A Level	East Anglian Region	0-35	M	191
Withdrawn	N	Lower Than A Level	North Western Region	0-35	M	177
Withdrawn	N	Lower Than A Level	West Midlands Region	0-35	M	172
Withdrawn	N	A Level or Equivalent	London Region	0-35	M	170
Withdrawn	N	Lower Than A Level	South Region	0-35	M	161
Withdrawn	N	A Level or Equivalent	North Western Region	0-35	M	159
Withdrawn	N	Lower Than A Level	East Midlands Region	0-35	M	152
Withdrawn	N	A Level or Equivalent	East Anglian Region	0-35	M	140
Withdrawn	N	Lower Than A Level	East Anglian Region	0-35	F	139
Withdrawn	N	Lower Than A Level	London Region	0-35	F	137
Withdrawn	N	Lower Than A Level	North Western Region	0-35	F	137
Withdrawn	N	Lower Than A Level	East Midlands Region	0-35	F	136
Withdrawn	N	A Level or Equivalent	West Midlands Region	0-35	M	135
Withdrawn	N	A Level or Equivalent	London Region	0-35	F	134
Withdrawn	N	A Level or Equivalent	South Region	0-35	M	134
Withdrawn	N	A Level or Equivalent	East Midlands Region	0-35	M	132
Withdrawn	N	Lower Than A Level	South West Region	0-35	M	129
Withdrawn	N	Lower Than A Level	West Midlands Region	0-35	F	128
Withdrawn	N	Lower Than A Level	Yorkshire Region	0-35	M	128
Withdrawn	N	Lower Than A Level	London Region	0-35	M	126
Withdrawn	N	A Level or Equivalent	West Midlands Region	0-35	F	121
Withdrawn	N	A Level or Equivalent	Scotland	0-35	M	118
Withdrawn	N	A Level or Equivalent	South Region	0-35	F	117
Withdrawn	N	A Level or Equivalent	North Western Region	0-35	F	114
Withdrawn	N	A Level or Equivalent	North Region	0-35	M	114
Withdrawn	N	A Level or Equivalent	South West Region	0-35	M	112
Withdrawn	N	Lower Than A Level	South Region	0-35	F	110
Withdrawn	N	Lower Than A Level	North Region	0-35	M	110
Withdrawn	N	A Level or Equivalent	East Anglian Region	0-35	F	109
Withdrawn	N	A Level or Equivalent	Yorkshire Region	0-35	M	103
Withdrawn	N	A Level or Equivalent	South East Region	0-35	M	102
Withdrawn	N	A Level or Equivalent	South West Region	0-35	F	100
Withdrawn	N	Lower Than A Level	Yorkshire Region	0-35	F	99
Withdrawn	N	HE Qualification	Scotland	0-35	M	97



Majority of this population segment

- Have 60 credits
- Are from London Region
- Have Lower than A Level
- Are male

# Top differences between demographics of withdrawals from “CCC” and overall withdrawals

## CCC Withdrawals

Predominately  
male

Belong from  
Scotland

Have A level or  
equivalent  
qualification

## Overall Withdrawals

Good  
distribution of  
male and female

Belong from  
London Region

Have lower than  
A level  
qualification

# Course Structure

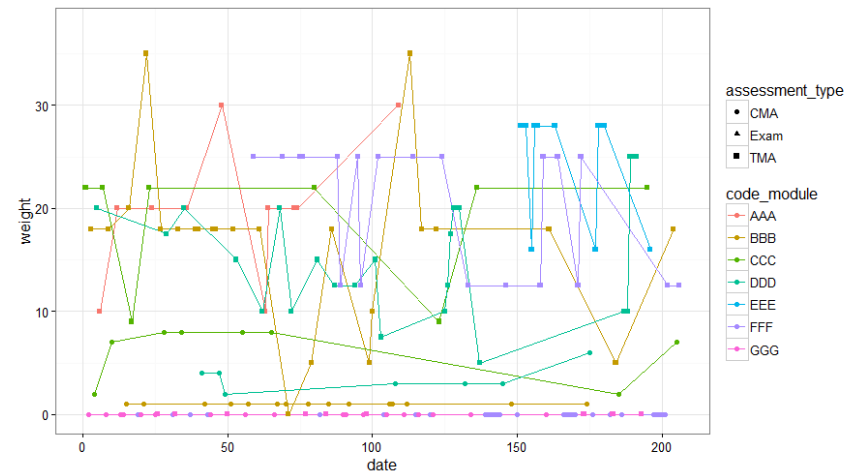
Within course structure, there are three factors driving high withdrawal rates

- ▶ Insufficient support
- ▶ Course material not up to the mark
- ▶ Course load is very high

“CCC” has the highest weightage of CMA type assessments with assessments almost equally distributed throughout the duration of the course

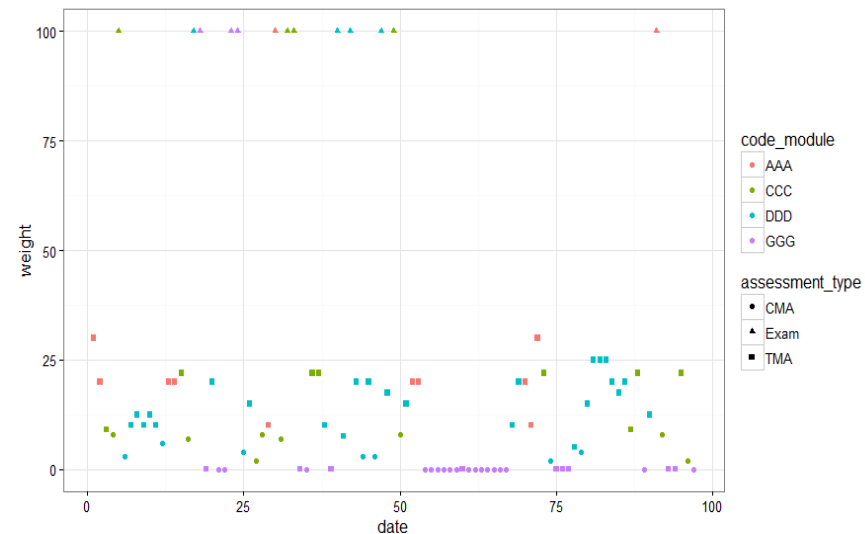
Course modules and average weightage distribution

	code_module	CMA	Exam	TMA
1	AAA	0.000000	100	20.00000
2	BBB	1.000000	100	16.73913
3	CCC	6.250000	100	18.75000
4	DDD	3.571429	100	15.62500
5	EEE	0.000000	100	25.00000
6	FFF	0.000000	100	20.00000
7	GGG	0.000000	100	0.00000



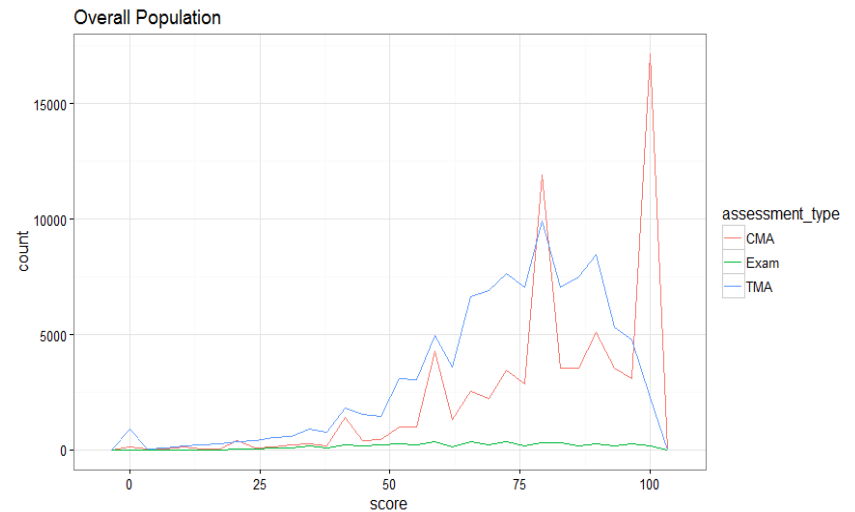
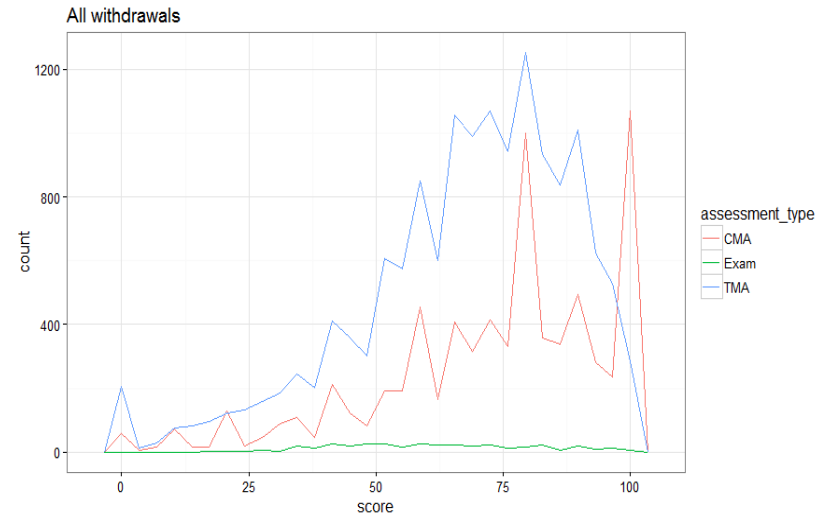
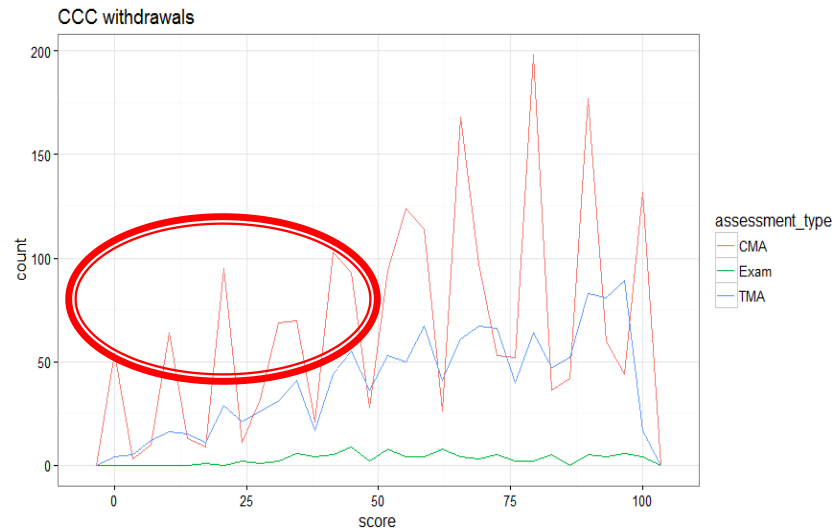
Course modules and average weightage distribution

	code_module	CMA	Exam	TMA
1	AAA	0	2	10
2	BBB	15	4	23
3	CCC	8	4	8
4	DDD	7	4	24
5	EEE	0	3	12
6	FFF	28	4	20
7	GGG	18	3	9



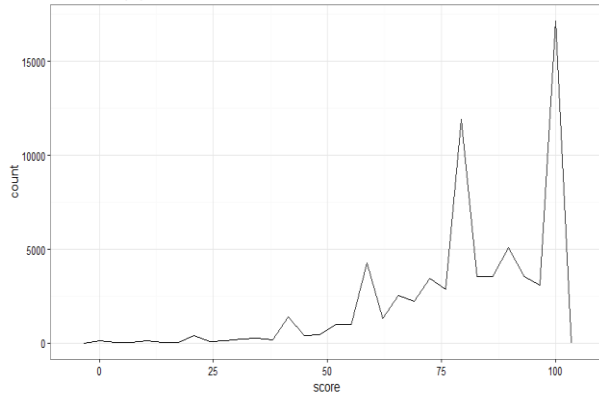


# CMA scores of students who withdrew from CCC is markedly lower than CMA scores of students who withdrew from other courses

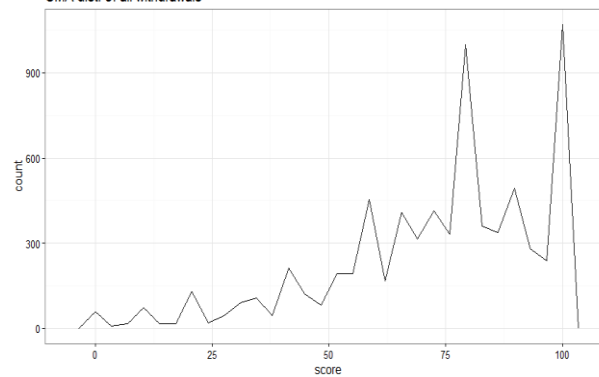


# Further deep dive of CMA scores of “CCC” with all withdrawal population, lowest withdrawal population and overall population strongly indicates poor course structure

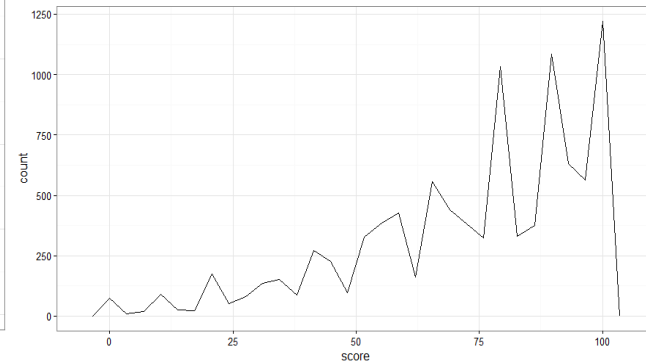
CMA dist. of population



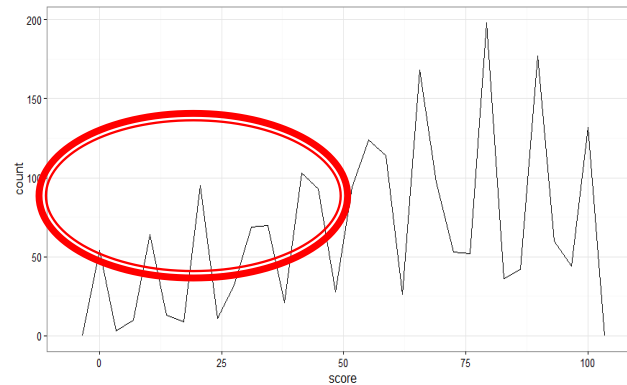
CMA dist. of all withdrawals



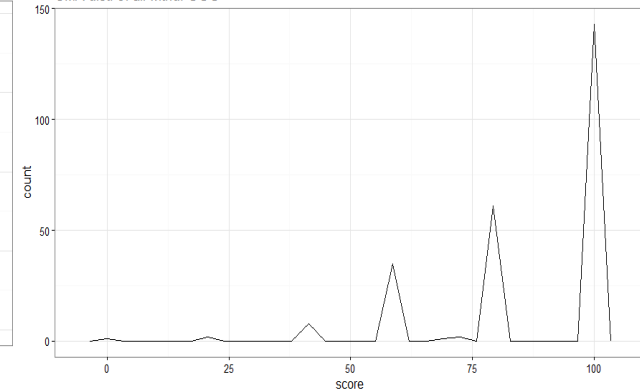
CMA dist. of all CCC



CMA dist. of all withd. CCC

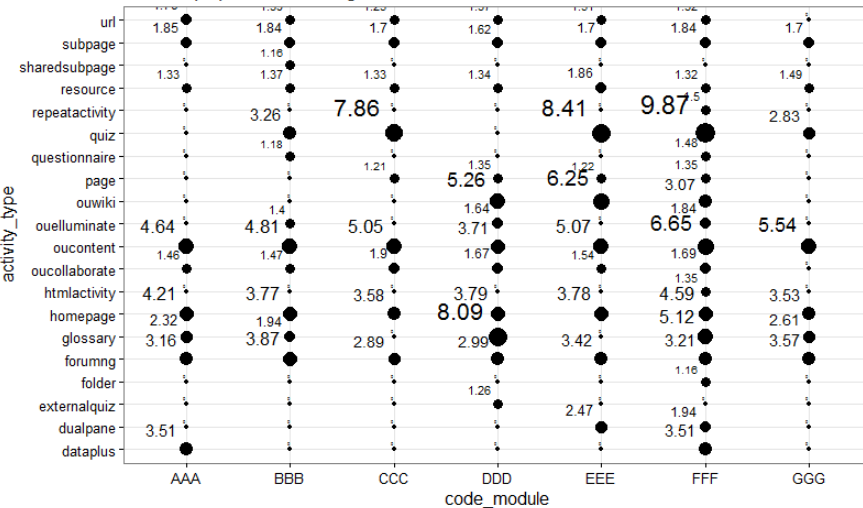


CMA dist. of all withd. GGG

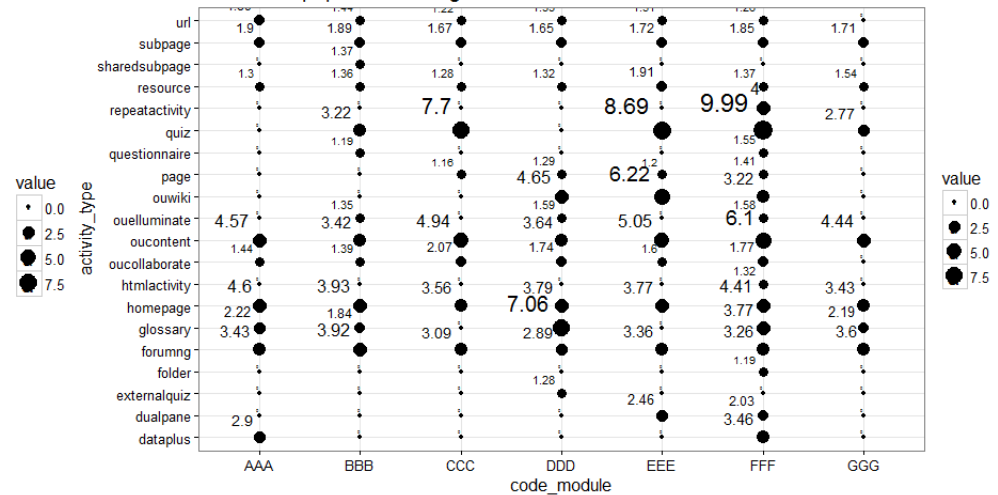


Average clicks of students who have withdrawn from “CCC” is not dramatically lower/higher than population indicating that the students are engaging with the online content

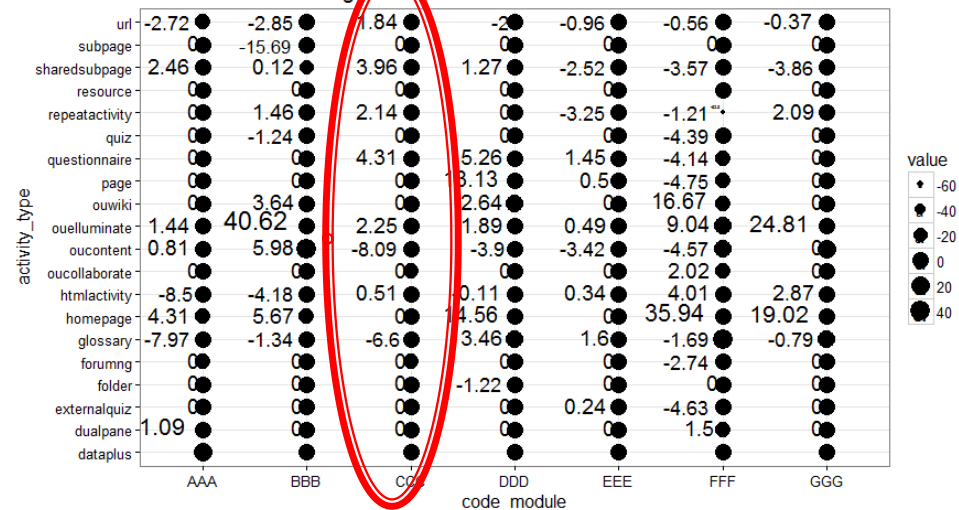
Overall population average sum of clicks



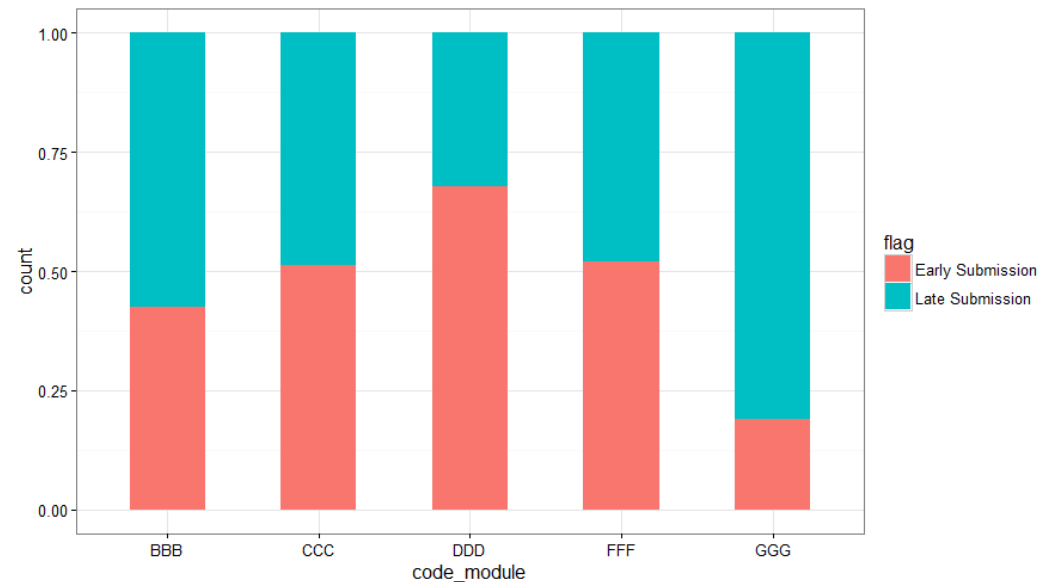
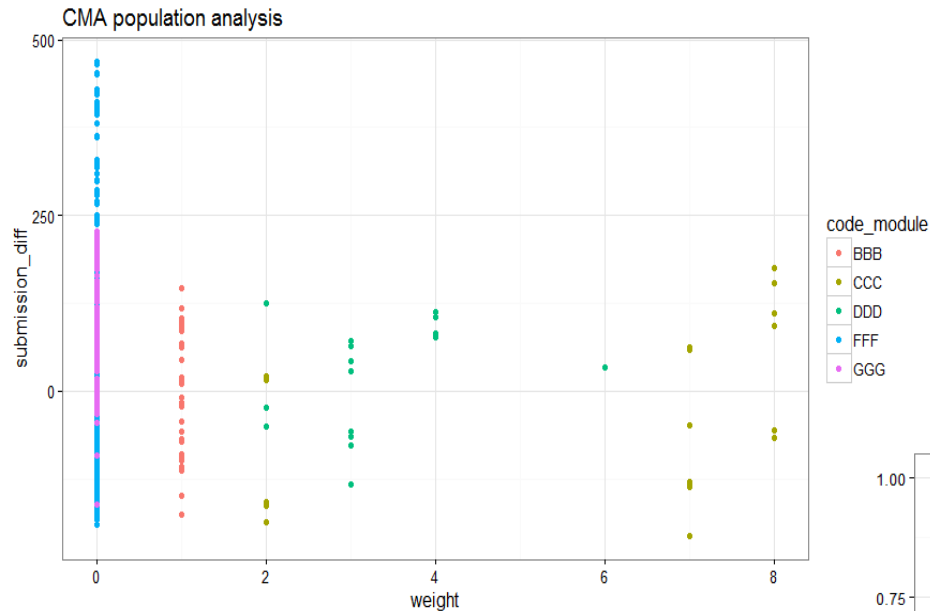
Withdrawal population average sum of clicks



% Difference of average sum of clicks



The CMA assessment submission delta of overall population is very similar to students who have withdrawn from “CCC” indicating that students are attempting the assessments and not slacking



# Observations

- “CCC” has highest withdrawal rate
- People who withdraw from “CCC” on average have at least an A level equivalent qualification
- Among people who withdraw from courses, men between 0–35 from Scotland who have taken “CCC” are highly likely to withdraw
- CMA assessments from “CCC” are weighted highest among courses, and are distributed evenly throughout the duration of course
- CMA assessments scores of “CCC” are among the lowest among peer courses

# Recommendations

Set-up following three experiments and test if withdrawal rates are reducing

- Reduce weightage of CMA assessments of “CCC”
- Reduce number of CMA assessments and increase TMA assessments in “CCC”
- Reduce number of CMA assessments in “CCC”