LA Program

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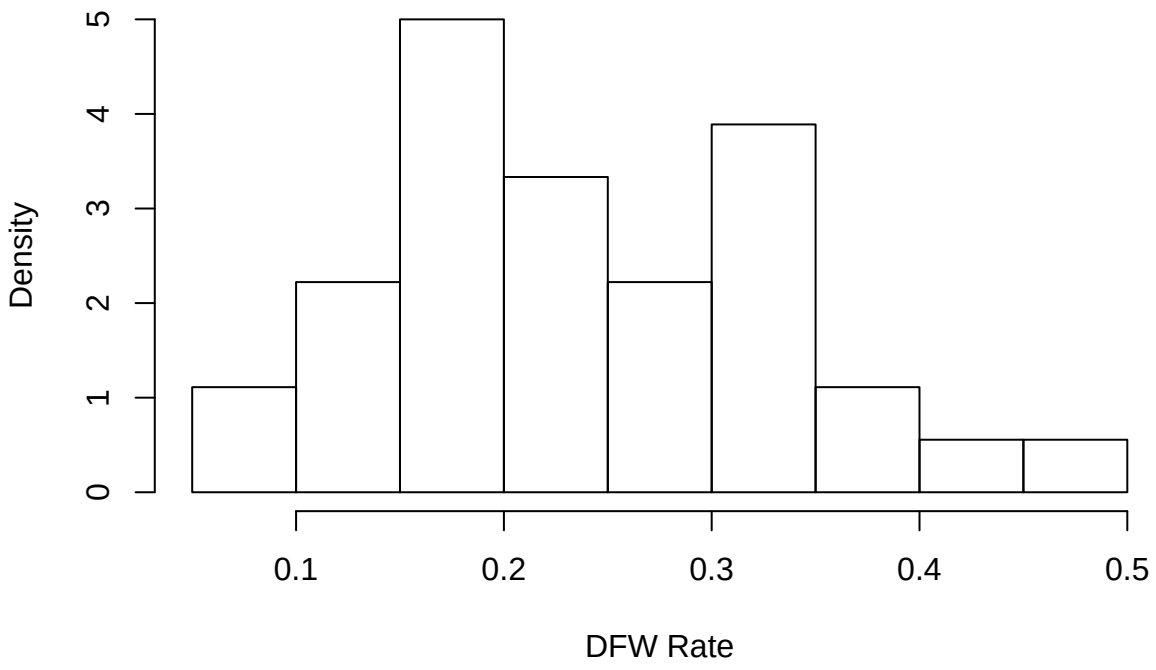
Exploratory Data Analysis

LA	Course	DFW.Count	DFW.Rate
No	Calculus I	124	0.33
Yes	Calculus I	39	0.28
No	Calculus II	26	0.20
Yes	Calculus II	12	0.34
No	College Algebra	784	0.28
Yes	College Algebra	88	0.31
No	College Physics w/Lab II	5	0.16
Yes	College Physics w/Lab II	5	0.16
No	Elementary Calculus	76	0.35
Yes	Elementary Calculus	50	0.47
No	Engineering Mechanics	14	0.27
Yes	Engineering Mechanics	6	0.16
No	Finite Mathematics	23	0.11
Yes	Finite Mathematics	18	0.17
No	Gen'l Biology w/Lab I	477	0.34
Yes	Gen'l Biology w/Lab I	40	0.35
No	General Chemistry I	682	0.37
Yes	General Chemistry I	178	0.39
No	General Chemistry II	138	0.33
Yes	General Chemistry II	152	0.41
No	Intermediate Algebra	464	0.22

LA	Course	DFW.Count	DFW.Rate
Yes	Intermediate Algebra	62	0.29
No	Intro Earth Science	47	0.15
Yes	Intro Earth Science	22	0.16
No	Intro to Computer Science	36	0.22
Yes	Intro to Computer Science	31	0.17
No	Intro. Environmental Science	13	0.09
Yes	Intro. Environmental Science	3	0.08
No	Introduction to Programming	6	0.12
Yes	Introduction to Programming	21	0.13
No	Precalculus	211	0.25
Yes	Precalculus	53	0.22
No	Social Science Statistics	12	0.18
Yes	Social Science Statistics	5	0.16
No	Statistical Methods	674	0.25
Yes	Statistical Methods	23	0.21

Paired T-test for DFW Rate, pairing by Course. Looking for an LA Effect.

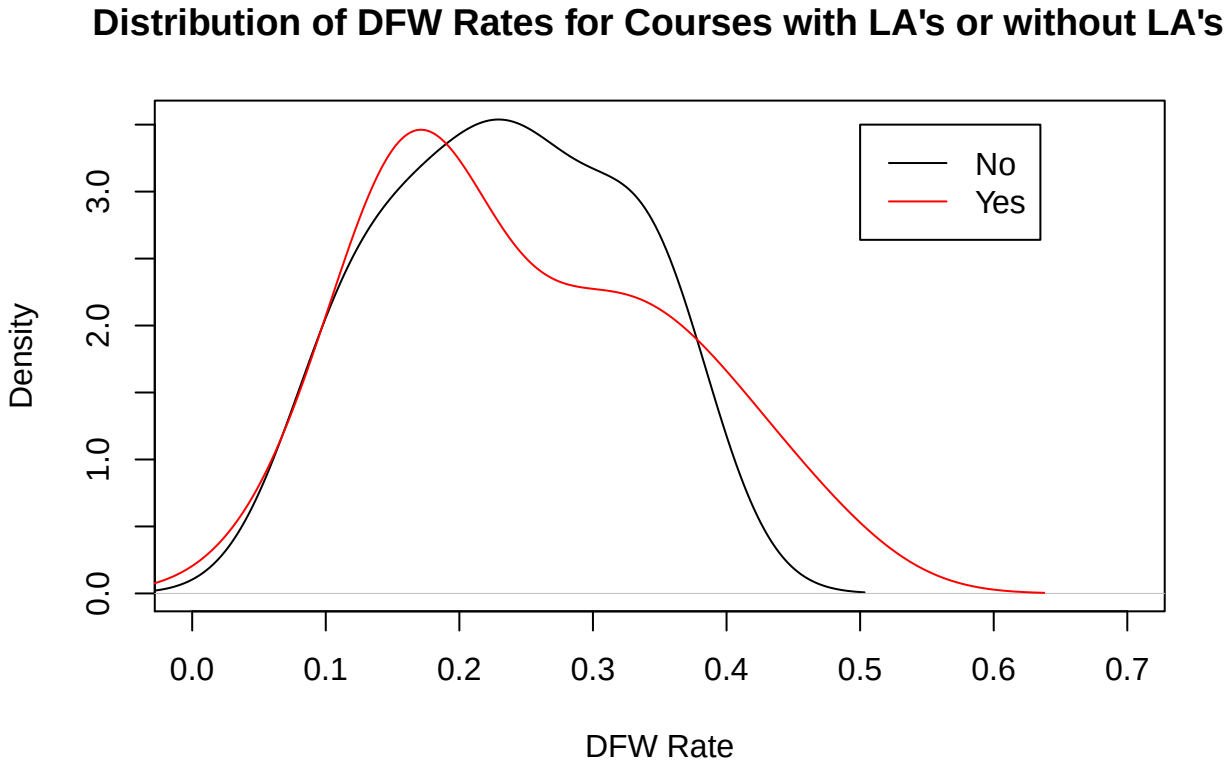
```
##
##  Paired t-test
##
## data:  LA_DFW and NonLA_DFW
## t = 0.8984, df = 17, p-value = 0.1908
## alternative hypothesis: true difference in means is greater than 0
## 95 percent confidence interval:
##  -0.01248453         Inf
## sample estimates:
## mean of the differences
##              0.01333333
```

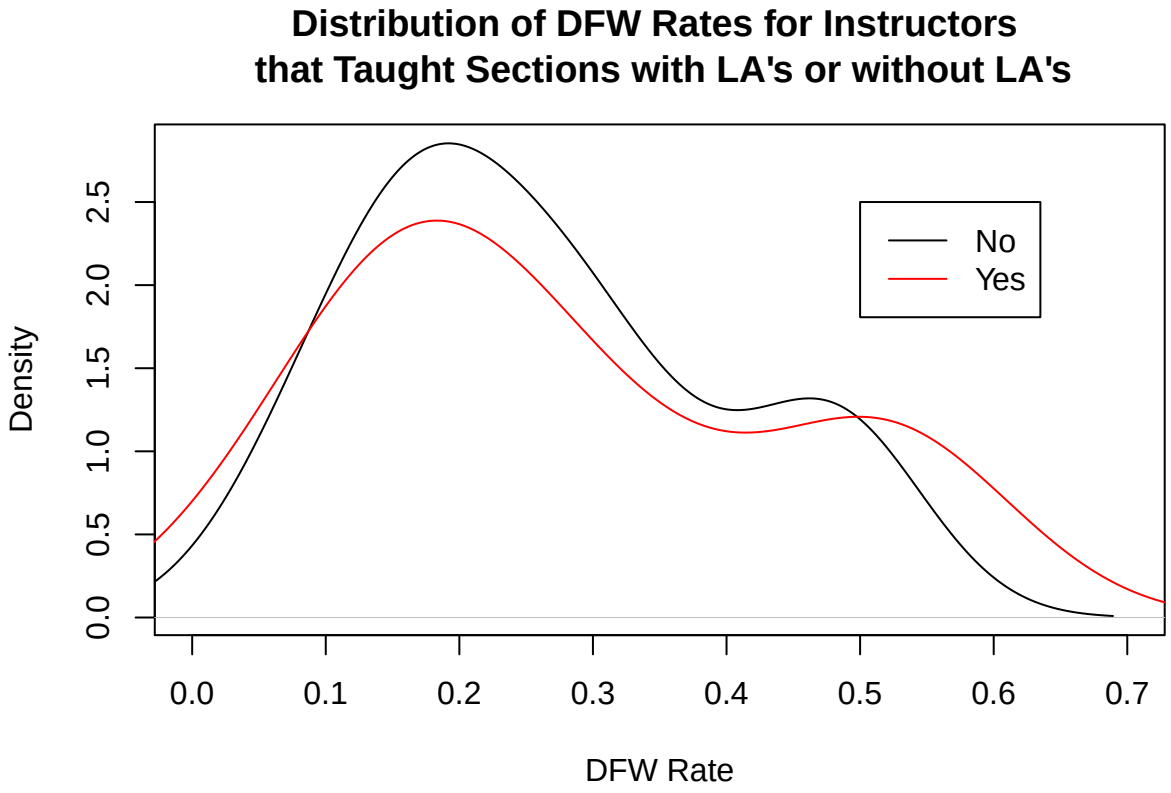


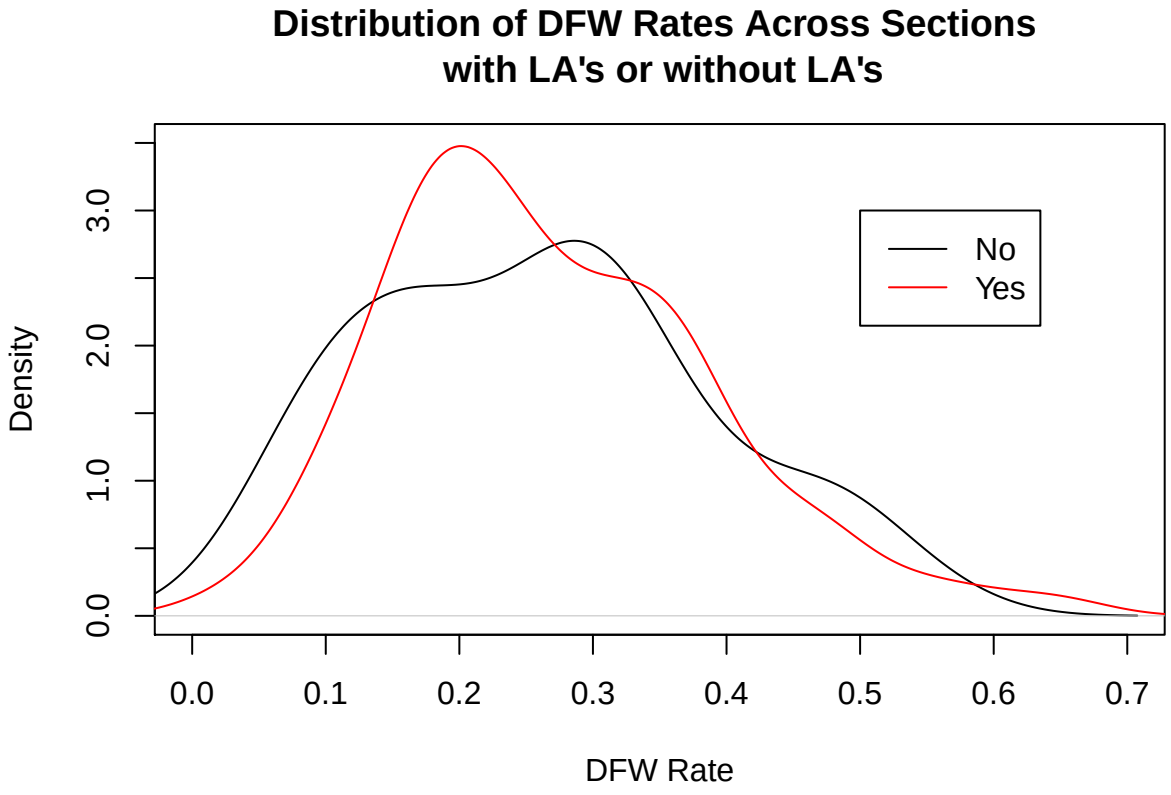

```
## The following objects are masked from dat:
##
##     Avg..DF.RATE, Avg..DFW.RATE, Avg..W.RATE, Course, Course.Name, CRN,
##     DF.Number, DFW, DFW.Cate, Historical.DFW, LA, Students, Term,
##     W.Number
##
##  Shapiro-Wilk normality test
##
## data:  pair_dat$Avg..DFW.RATE
## W = 0.90929, p-value = 0.01428
##
##  Shapiro-Wilk normality test
##
## data:  pair_dat$Avg..DFW.RATE[pair_dat$LA == "Yes"]
## W = 0.91312, p-value = 0.1512
##
##  Shapiro-Wilk normality test
```

```
##
## data:  pair_dat$Avg..DFW.RATE[pair_dat$LA == "No"]
## W = 0.899, p-value = 0.0919

##
##  Wilcoxon signed rank test with continuity correction
##
## data:  Instruct_LA and Instruct_No_LA
## V = 36, p-value = 0.4118
## alternative hypothesis: true location shift is greater than 0
```








```
##      Group.1     Group.2          x
## 1   BSC1010C   Fall 2016 0.35571429
```

```
## 2  CHM1045    Fall 2016 0.35500000
## 3  COP2006    Fall 2016 0.06500000
## 4  MAC1105    Fall 2016 0.28812500
## 5  MAT1033    Fall 2016 0.20882353
## 6  MGF1106    Fall 2016 0.10666667
## 7  STA2023    Fall 2016 0.23357143
## 8  CHM1045    Fall 2017 0.33571429
## 9  COP1500    Fall 2017 0.25000000
## 10 ESC1000C   Fall 2017 0.18000000
## 11 MAC1105    Fall 2017 0.29866667
## 12 MAC1147    Fall 2017 0.26454545
## 13 MAC2311    Fall 2017 0.33500000
## 14 MAT1033    Fall 2017 0.24529412
## 15 CHM1045    Fall 2018 0.41000000
## 16 CHM1046    Fall 2018 0.43333333
## 17 COP1500    Fall 2018 0.15000000
## 18 COP2006    Fall 2018 0.17000000
## 19 EVR1001C   Fall 2018 0.08666667
## 20 MAC2312    Fall 2018 0.23200000
## 21 STA2122    Fall 2018 0.17666667
## 22 BSC1010C Spring 2017 0.34375000
## 23 CHM1046  Spring 2017 0.34000000
## 24 COP1500  Spring 2017 0.19000000
## 25 COP2006  Spring 2017 0.07000000
## 26 MAC1105  Spring 2017 0.27125000
## 27 MAC1147  Spring 2017 0.22000000
## 28 MAC2233  Spring 2017 0.38833333
## 29 PHY2054C Spring 2017 0.16000000
## 30 CHM1045  Spring 2018 0.40200000
## 31 CHM1046  Spring 2018 0.31000000
## 32 COP1500  Spring 2018 0.19000000
## 33 COP2006  Spring 2018 0.17000000
## 34 EGM3420C Spring 2018 0.22666667
```

```
## 35 ESC1000C Spring 2018 0.12500000
## 36 MAC1147  Spring 2018 0.23600000
## 37 MAC2311  Spring 2018 0.30428571
## 38 MGF1106  Spring 2018 0.17666667
## 39 STA2023  Spring 2018 0.27230769
```