Summary Graphs of NUTR630 Intake

Dave Bridges, Liv Anderson and Noura El Habbal

Septembe 3, 2018

Contents


```
library(readr)
filename <- 'https://docs.google.com/spreadsheets/d/e/2PACX-1vSDRxu3Ur53iZVsg5Gg9nArNiKY2-xguRzoeWl-wQ5
data <- read_csv(filename)
```

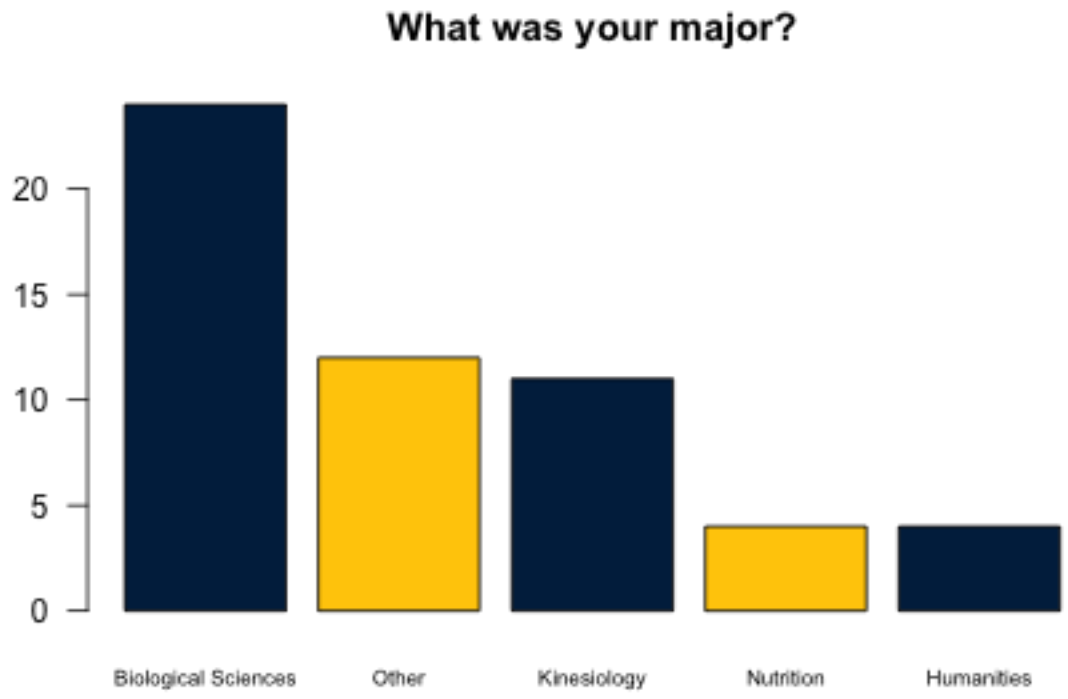
These data can be found in /Users/davebrid/Documents/GitHub/TeachingLectures/Michigan/NUTR630/Evaluation/Pre-Semester Survey/2018 in a file named https://docs.google.com/spreadsheets/d/e/2PACX-1vSDRxu3Ur53iZVsg5Gg9nArNiKY2-SU6dmcBTgb-cQiY/pub?gid=830256665&single=true&output=csv. This script was most recently updated on Wed Sep 5 10:24:41 2018.

Analysis

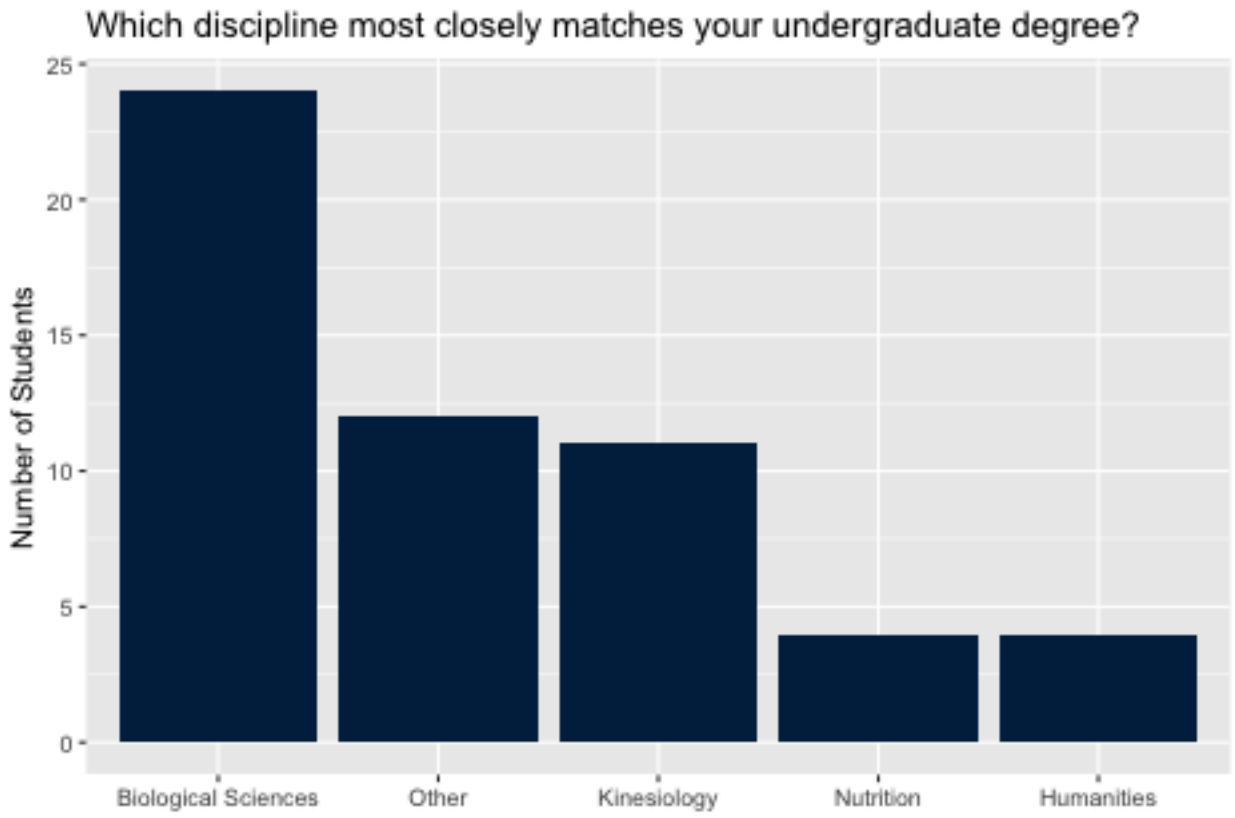
What Majors

```
library(forcats)
#grouped with most common 4

count.majors <-
  data %>%
  mutate(`Which discipline most closely matches your undergraduate degree?` = fct_lump(as.factor(data$`
  mutate(`Which discipline most closely matches your undergraduate degree?` =
           fct_recode(`Which discipline most closely matches your undergraduate degree?`,
                      "Neuroscience" = "Psychology-related (Psychology, Neuroscience, etc.)",
                      "Nutrition" = "Food Quality & Safety",
                      "Nutrition" = "Nutrition & dietetics (minor in biology)",
                      "Nutrition" = "Dietetics",
                      "Nutrition" = "Nutrition and Food Science",
                      "Nutrition" = "Food & Nutritional Sciences",
                      "Biological Sciences" = "Biochemistry",
                      "Humanities" = "English Lit and Commuications, years later I took biochem pre-reqs
  group_by(`Which discipline most closely matches your undergraduate degree?`) %>%
  count() %>%
  arrange(desc(n))
```

```
with(count.majors, barplot(n,
                           las=1,
                           cex.names=0.66,
                           main="What was your major?",
                           col=color.scheme,
                           names.arg=`Which discipline most closely matches your undergraduate degree?`))

library(ggplot2)
```



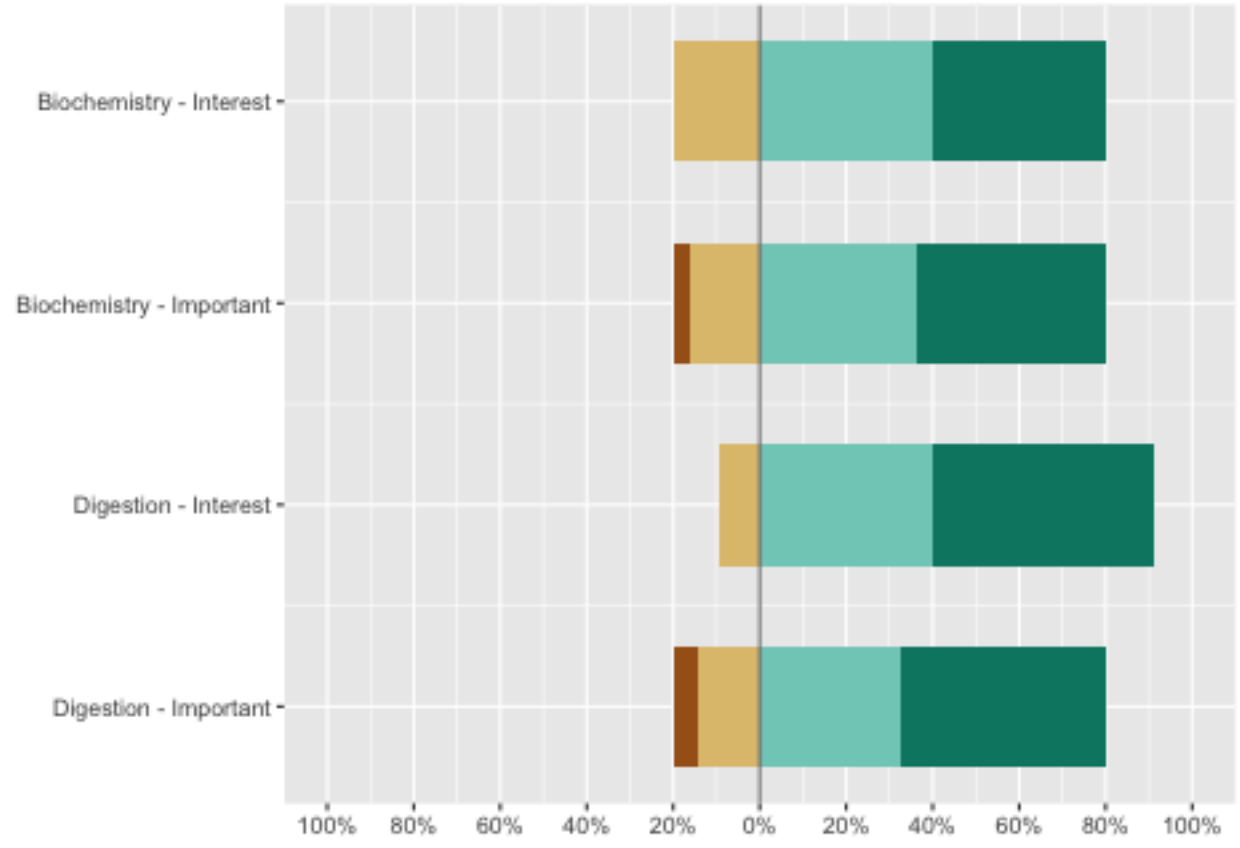

```
ggplot(count.majors,aes(y=n,x=reorder(`Which discipline most closely matches your undergraduate degree?
         geom_bar(stat='identity',fill=color.scheme[1]) +
  labs(y="Number of Students",
       title="Which discipline most closely matches your undergraduate degree?",
       x="")
```



What Topics are Students Interested In?

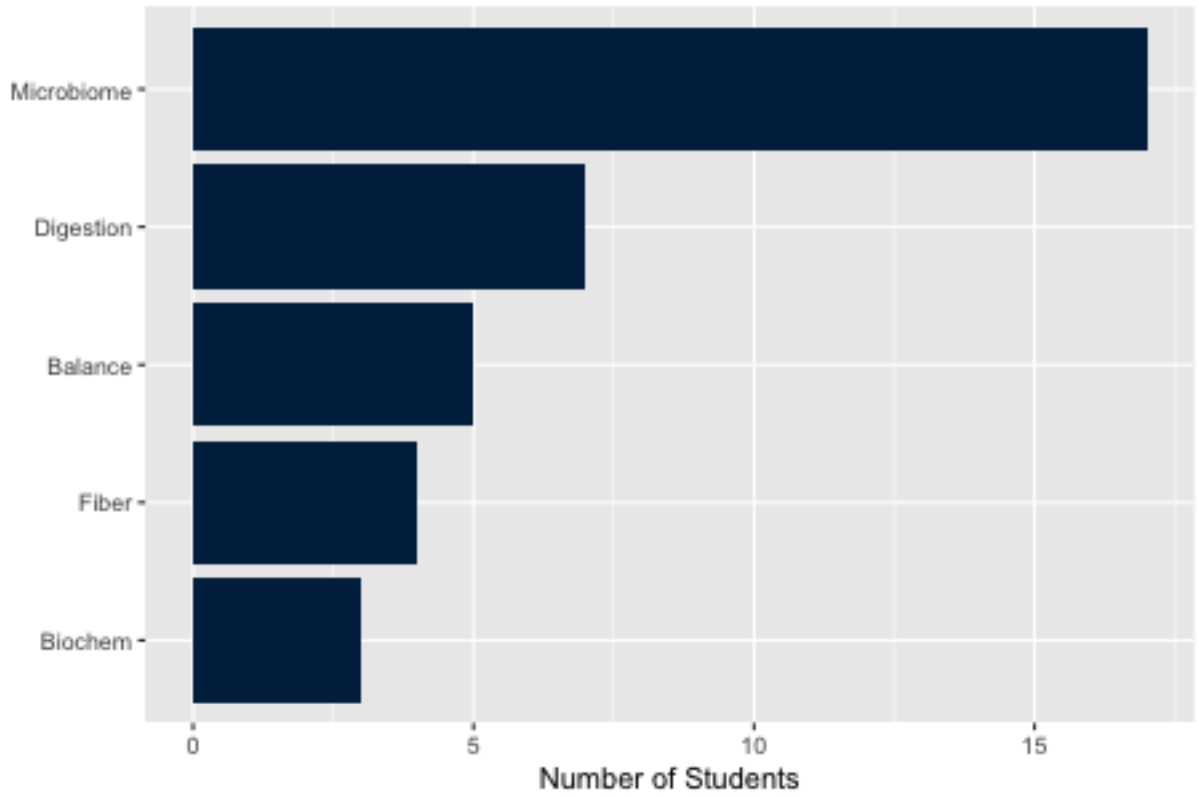
```
library(sjPlot)

student.interest.data <-
  data %>%
  select(starts_with('Please answer these questions about your interests')) %>%
  rename("Biochemistry - Interest" = "Please answer these questions about your interests [Macronutrient
         "Biochemistry - Important" = "Please answer these questions about your interests [Macronutrien
         "Digestion - Interest" = "Please answer these questions about your interests [Comprehensive un
         "Digestion - Important" = "Please answer these questions about your interests [Comprehensive u
  mutate(`Biochemistry - Interest`= fct_recode(`Biochemistry - Interest`,
                                               '1'="Strongly Agree",
                                               '2'="Agree",
                                               '3'="Neutral",
                                               '4'="Disagree",
                                               '5'="Strongly Disagree")) %>%
  mutate(`Biochemistry - Important`= fct_recode(`Biochemistry - Important`,
                                               '1'="Strongly Agree",
                                               '2'="Agree",
                                               '3'="Neutral",
                                               '4'="Disagree",
                                               '5'="Strongly Disagree")) %>%
    mutate(`Digestion - Interest`= fct_recode(`Digestion - Interest`,
```

```
                                                '1'="Strongly Agree",
                                                '2'="Agree",
                                                '3'="Neutral",
                                                '4'="Disagree",
                                                '5'="Strongly Disagree")) %>%
      mutate(`Digestion - Important`= fct_recode(`Digestion - Important`,
                                                '1'="Strongly Agree",
                                                '2'="Agree",
                                                '3'="Neutral",
                                                '4'="Disagree",
                                                '5'="Strongly Disagree")) %>%
  mutate(`Biochemistry - Interest`=as.numeric(as.character(`Biochemistry - Interest`))) %>%
  mutate(`Biochemistry - Important`=as.numeric(as.character(`Biochemistry - Important`))) %>%
  mutate(`Digestion - Interest`=as.numeric(as.character(`Digestion - Interest`))) %>%
  mutate(`Digestion - Important`=as.numeric(as.character(`Digestion - Important`)))

plot_likert(student.interest.data,
            sort.frq=NULL,
            values='hide',
            reverse.colors=TRUE,
            show.legend=FALSE,
            show.n=FALSE)
```



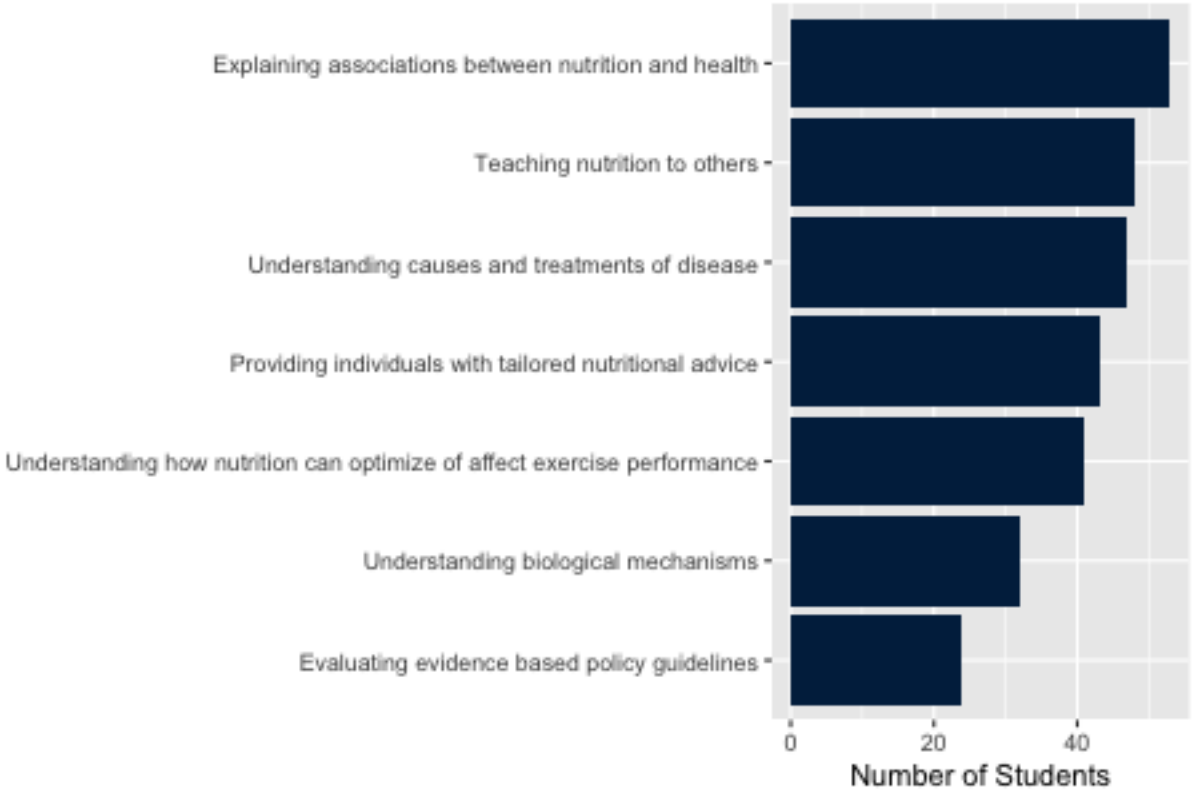
What Topic are you Most Interested In?

```
library(stringr)
topic.interest <-
  data %>%
  select(`After reading the syllabus, which topic are you most excited to learn about?`) %>%
  mutate(Interest = `After reading the syllabus, which topic are you most excited to learn about?`) %>%
  mutate(Microbiome = ifelse(str_detect(Interest, "Microbiome|microbiome"), TRUE, FALSE),
         Fiber = ifelse(str_detect(Interest, "Fiber|fibre"), TRUE, FALSE),
         Balance = ifelse(str_detect(Interest, "balance|Balance"), TRUE, FALSE),
         Digestion = ifelse(str_detect(Interest, "digest|Digest"), TRUE, FALSE),
         Biochem = ifelse(str_detect(Interest, "biochem|Biochem"), TRUE, FALSE)) %>%
  select(Microbiome,Fiber,Balance,Digestion,Biochem) %>%
  gather(key=Interest, value=Response) %>%
  filter(Response==TRUE) %>%
  count(Interest)

ggplot(topic.interest, aes(y=n,x=reorder(Interest,n))) +
  geom_bar(stat='identity',fill=color.scheme[1]) +
  coord_flip() +
  labs(y='Number of Students',
       x="",
       title="")
```



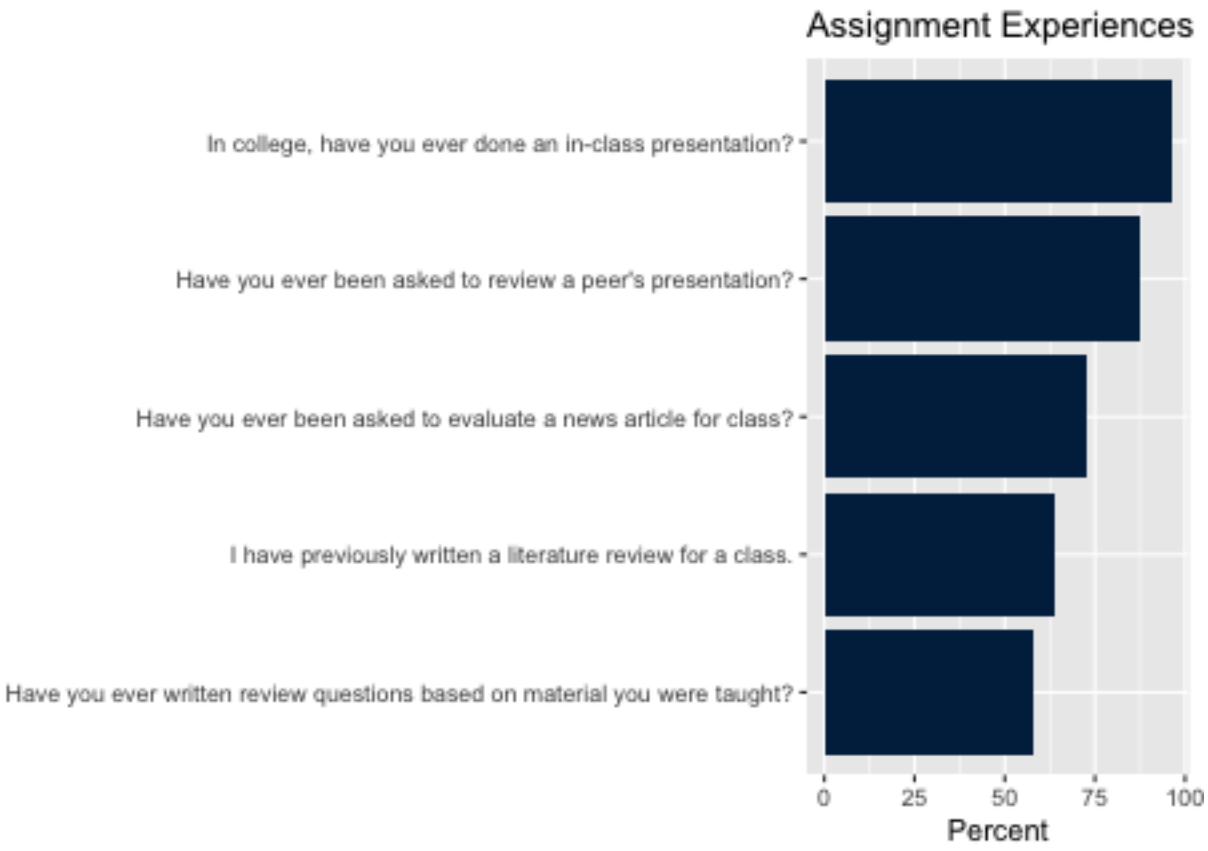
Applications of Course Content

```
library(stringr)
application.data <-
  data %>%
  select(`What applications of this course content are you interested in?  Select all that apply.`) %>%
  rename(Applications = `What applications of this course content are you interested in?  Select all tha

application.results = str_split(application.data$Applications, pattern=', ', simplify =F) %>% unlist()

application.summary <-
  as.data.frame(application.results) %>%
  rename(Results = application.results) %>%
  count(Results) %>%
  arrange(n)

ggplot(application.summary, aes(y=n,x=reorder(Results,n))) +
  geom_bar(stat='identity',fill=color.scheme[1]) +
  coord_flip() +
  labs(y='Number of Students',
       x="",
       title="")
```



Student Experience Data

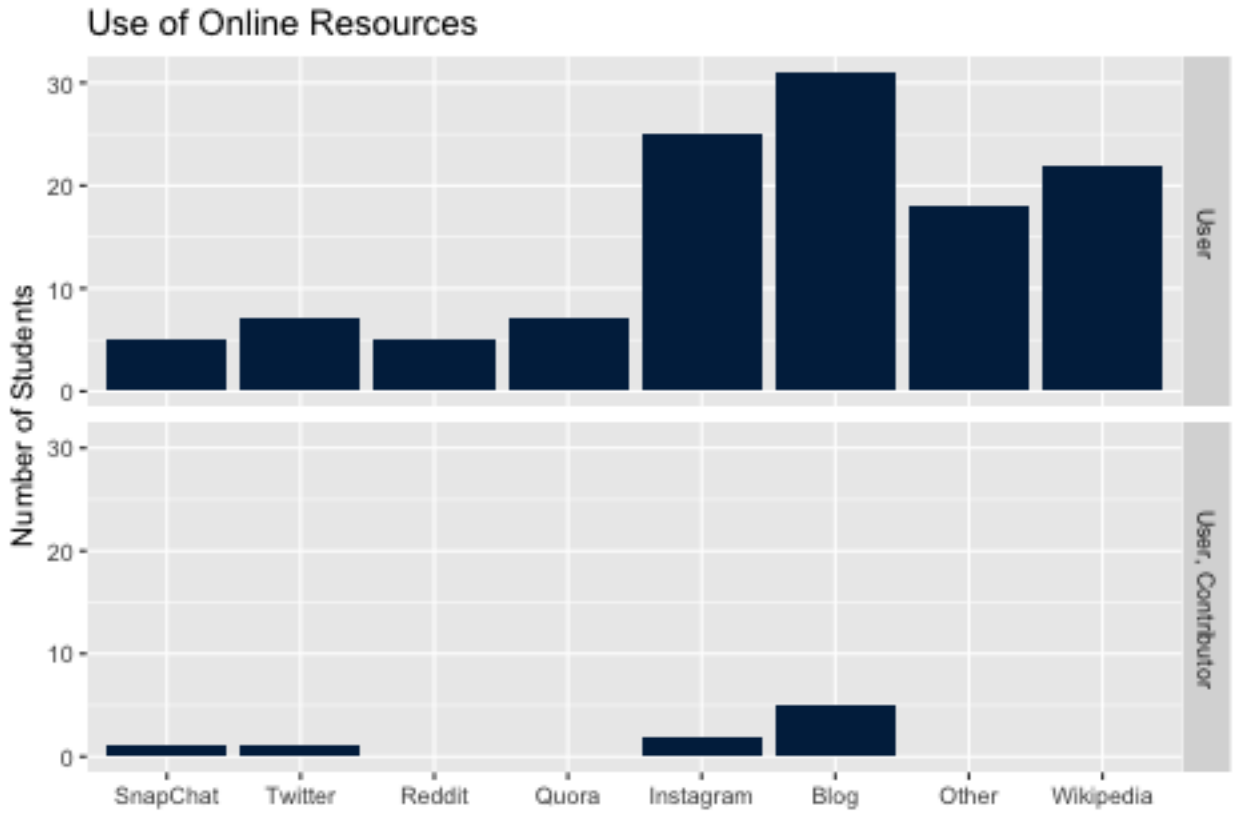
```
student.exp.data <-
  data %>%
  select(`I have previously written a literature review for a class.`,
`In college, have you ever done an in-class presentation?`,`Have you ever been asked to review a peer's

countYes = function(v){length(v[v=="Yes"])}
student.exp.data.summary <- sapply(student.exp.data,countYes)
student.exp.data.summary <- as_tibble(student.exp.data.summary)
student.exp.data.summary$Question <- rownames(student.exp.data.summary)

ggplot(student.exp.data.summary, aes(x=reorder(Question,value),y=value/dim(student.exp.data)[1]*100)) +
  geom_bar(stat='identity',fill=color.scheme[1]) + coord_flip() +
  labs(x="",y="Percent",title="Assignment Experiences")
```



Online Resources

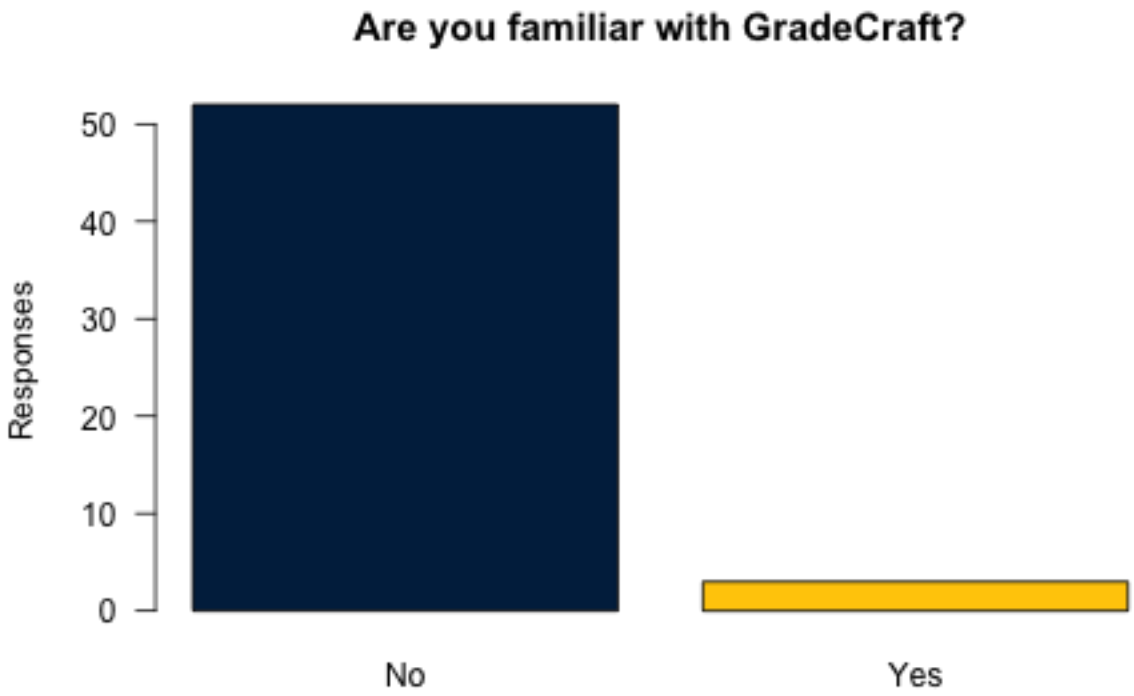
```
online.data <-
  data %>%
  select(starts_with("Which of the following online resources do you use for learning about nutrition?
colnames(online.data) <- gsub(".*\\[|\\]", "", colnames(online.data))

online.data.summary <-
```

```
  gather(online.data,key="Tool",value="Use") %>%
  group_by(Tool) %>%
  count(Use) %>%
  na.omit

ggplot(filter(online.data.summary, Use != "Contributor"), aes(y=n,x=reorder(Tool,n))) +
  geom_bar(stat='identity',fill=color.scheme[1]) +
  facet_grid(Use~.) +
  labs(y="Number of Students",x="",title="Use of Online Resources")
```



GradeCraft Familiarity

```
gradecraft <-
  data %>%
  group_by(`Are you familiar with GradeCraft?`) %>%
  count()

with(gradecraft, barplot(n,
                         las=1,
                         ylab="Responses",
                         main="Are you familiar with GradeCraft?",
                         col=color.scheme,
                         names.arg=`Are you familiar with GradeCraft?`))
```



Only 3 out of 55 students were familiar with GradeCraft.

Session Information

```
sessionInfo()
```

```
## R version 3.5.0 (2018-04-23)
## Platform: x86_64-apple-darwin15.6.0 (64-bit)
## Running under: macOS High Sierra 10.13.6
##
## Matrix products: default
## BLAS: /Library/Frameworks/R.framework/Versions/3.5/Resources/lib/libRblas.0.dylib
## LAPACK: /Library/Frameworks/R.framework/Versions/3.5/Resources/lib/libRlapack.dylib
##
## locale:
## [1] en_US.UTF-8/en_US.UTF-8/en_US.UTF-8/C/en_US.UTF-8/en_US.UTF-8
##
## attached base packages:
## [1] stats     graphics  grDevices utils     datasets  methods   base
##
## other attached packages:
## [1] stringr_1.3.1  sjPlot_2.6.0   ggplot2_3.0.0  bindrcpp_0.2.2
## [5] forcats_0.3.0  readr_1.1.1    dplyr_0.7.6    tidyr_0.8.1
## [9] knitr_1.20
```

```
##
## loaded via a namespace (and not attached):
##  [1] splines_3.5.0      carData_3.0-1      modelr_0.1.2
##  [4] assertthat_0.2.0   stats4_3.5.0       coin_1.2-2
##  [7] yaml_2.2.0         pillar_1.3.0       backports_1.1.2
## [10] lattice_0.20-35    glue_1.3.0         digest_0.6.16
## [13] RColorBrewer_1.1-2 glmmTMB_0.2.2.0    snakecase_0.9.2
## [16] minqa_1.2.4        colorspace_1.3-2   sandwich_2.5-0
## [19] psych_1.8.4        htmltools_0.3.6    Matrix_1.2-14
## [22] survey_3.33-2      plyr_1.8.4         pkgconfig_2.0.2
## [25] broom_0.5.0        haven_1.1.2        purrr_0.2.5
## [28] xtable_1.8-2       mvtnorm_1.0-8      scales_1.0.0
## [31] stringdist_0.9.5.1 lme4_1.1-18-1      emmeans_1.2.3
## [34] tibble_1.4.2       effects_4.0-3      bayesplot_1.6.0
## [37] sjlabelled_1.0.13  TH.data_1.0-9      withr_2.1.2
## [40] TMB_1.7.14         nnet_7.3-12        lazyeval_0.2.1
## [43] mnormt_1.5-5       survival_2.42-6    magrittr_1.5
## [46] crayon_1.3.4       estimability_1.3   evaluate_0.11
## [49] nlme_3.1-137       MASS_7.3-50        foreign_0.8-71
## [52] tools_3.5.0        data.table_1.11.4  hms_0.4.2
## [55] multcomp_1.4-8     munsell_0.5.0      prediction_0.3.6
## [58] ggeffects_0.5.0    compiler_3.5.0     rlang_0.2.2
## [61] grid_3.5.0         nloptr_1.0.4       ggridges_0.5.0
## [64] labeling_0.3       rmarkdown_1.10     gtable_0.2.0
## [67] codetools_0.2-15   sjstats_0.17.0     curl_3.2
## [70] reshape2_1.4.3     sjmisc_2.7.4       R6_2.2.2
## [73] zoo_1.8-3          pwr_1.2-2          bindr_0.1.1
## [76] rprojroot_1.3-2    modeltools_0.2-22  stringi_1.2.4
## [79] parallel_3.5.0     Rcpp_0.12.18       tidyselect_0.2.4
## [82] coda_0.19-1
```