Pizza

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Input data

```
library(readxl)
D1 <- read_xlsx("Data.xlsx")
```

```
## New names:
## * `` -> ...10
```

```
D1 <- as.data.frame(D1)
D1 <- D1[, -(9:10)]
D1 <- D1[, -1]
names(D1)[names(D1)=="edu experience"]="edu"
```

```
library(dplyr)
```

```
##
## Attaching package: 'dplyr'
```

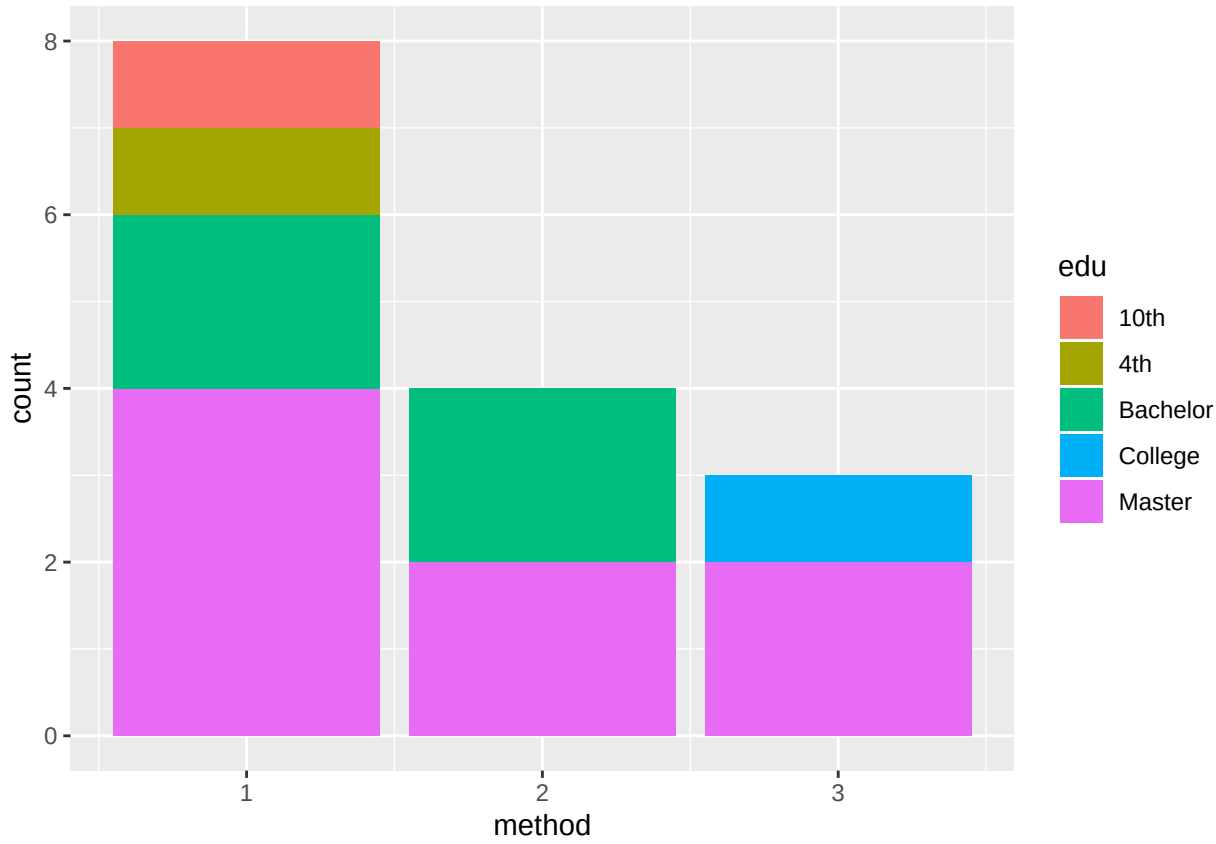
```
## The following objects are masked from 'package:stats':
##
##     filter, lag
```

```
## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

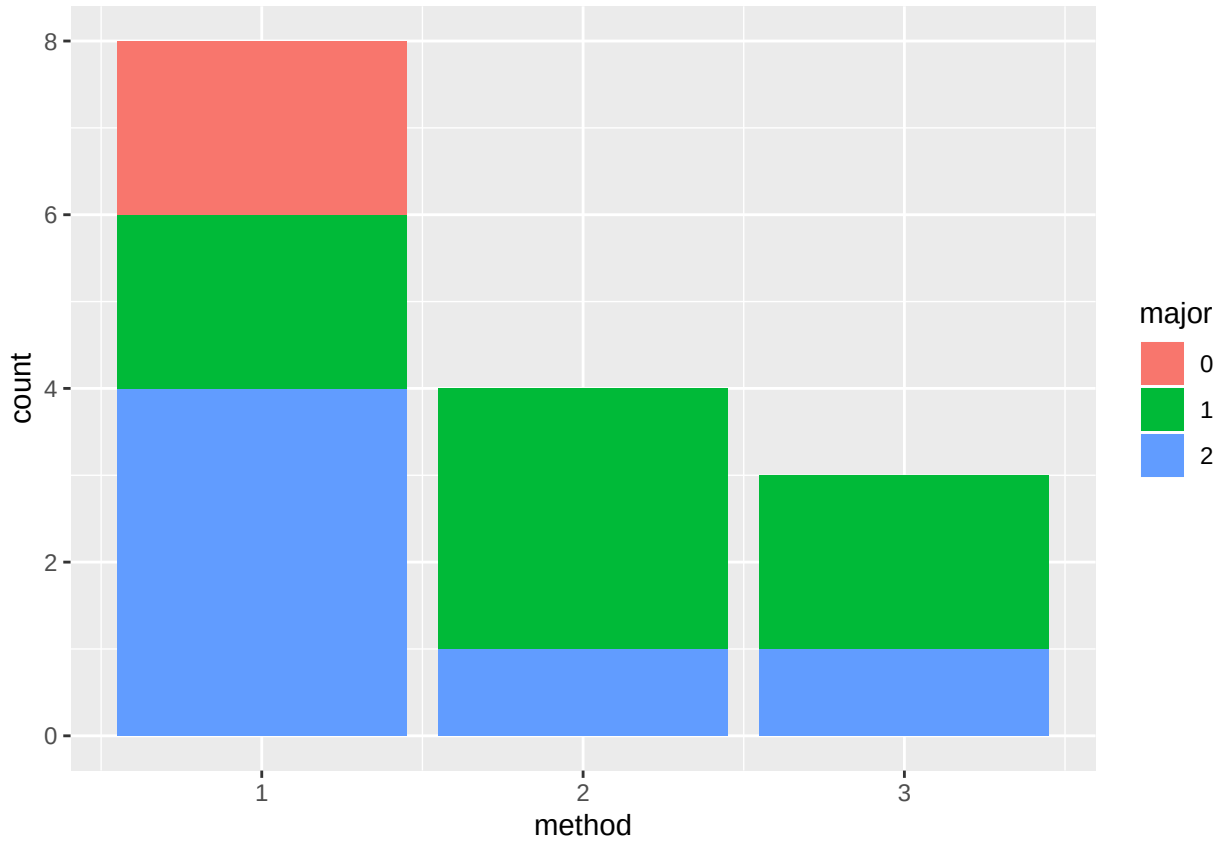
```
library(tidyr)
library(ggplot2)
```

Methods centered (organized by educational experiences)

```
D2 <- dplyr::select(D1, "gender", "age", "nationality", "method","major", "edu")
D2$count <- 1
D2$major <- as.character(D2$major)
D3 <- D2 %>% group_by(method, edu) %>% summarise(sum(count))
names(D3)[names(D3)=="sum(count)"]="count"
p1 <- ggplot(D3, aes(x=method, y=count, fill=edu)) + geom_bar(stat="identity")
p1
```

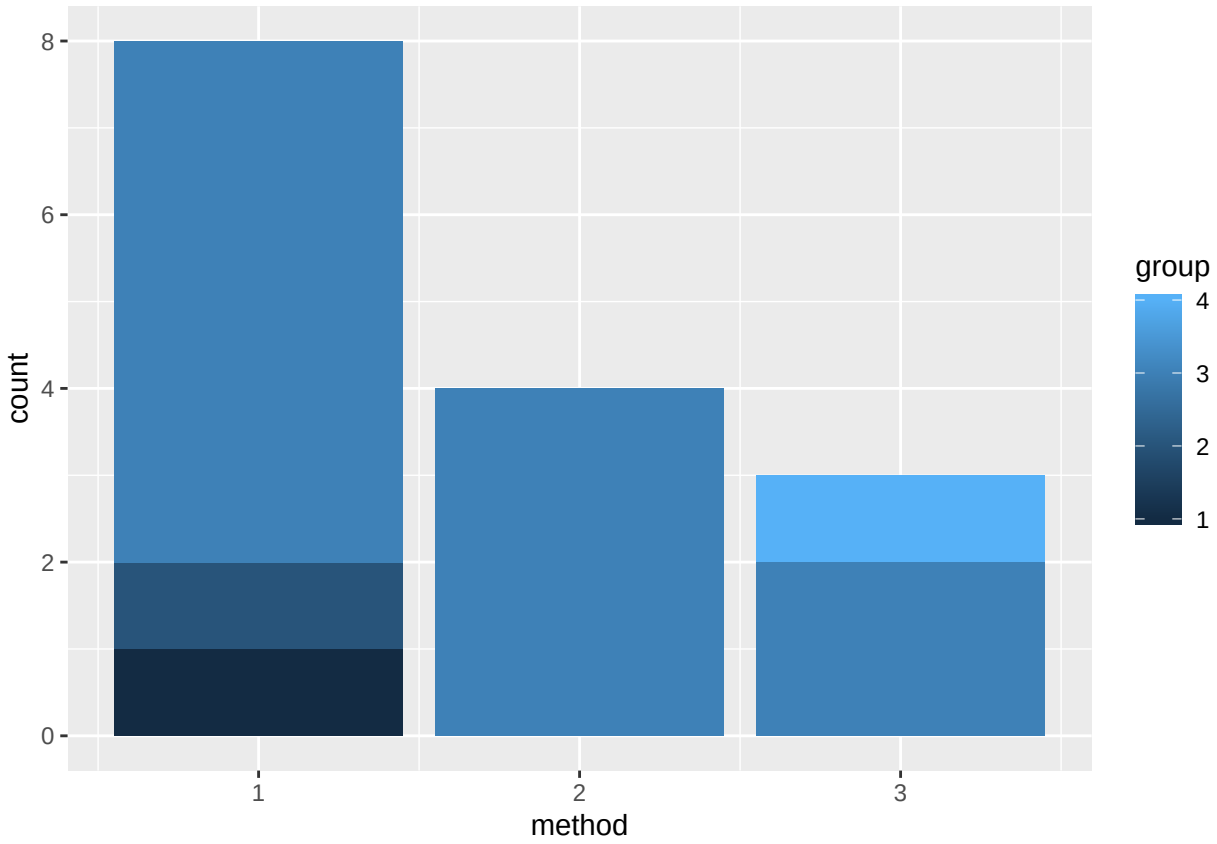



```
D4 <- D2 %>% group_by(method, major) %>% summarise(sum(count))
names(D4)[names(D4)=="sum(count)"]="count"
p2 <- ggplot(D4, aes(x=method, y=count, fill=major)) + geom_bar(stat="identity")
p2
```



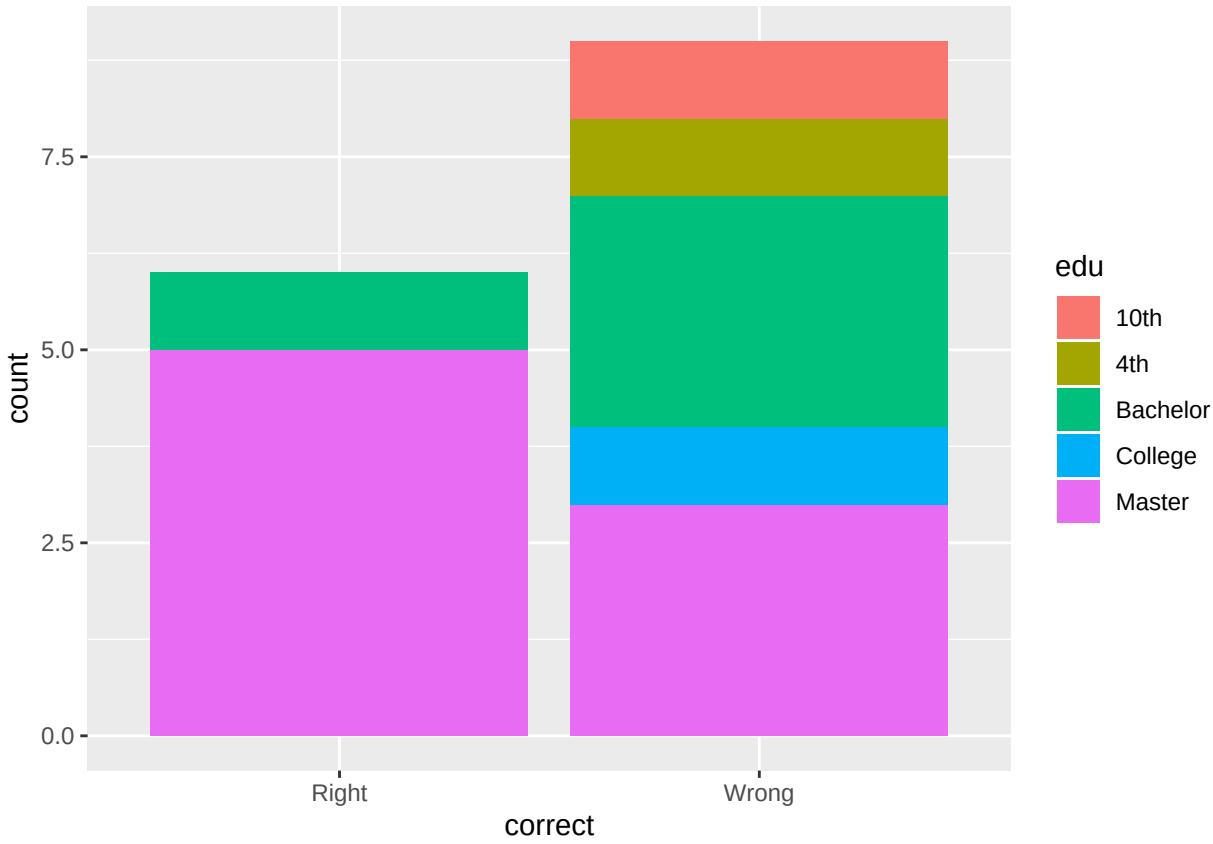
Methods centered (organized by age)

```
D5 <- D2
D5$group <-  ifelse(D5$age<=12, 1, ifelse(D5$age <= 21, 2, ifelse(D5$age <50, 3, 4)))
D5 <- D5 %>% group_by(method, group) %>% summarise(sum(count))
names(D5)[names(D5)=="sum(count)"]="count"
p3 <- ggplot(D5, aes(x=method, y=count, fill=group)) + geom_bar(stat="identity")
p3
```



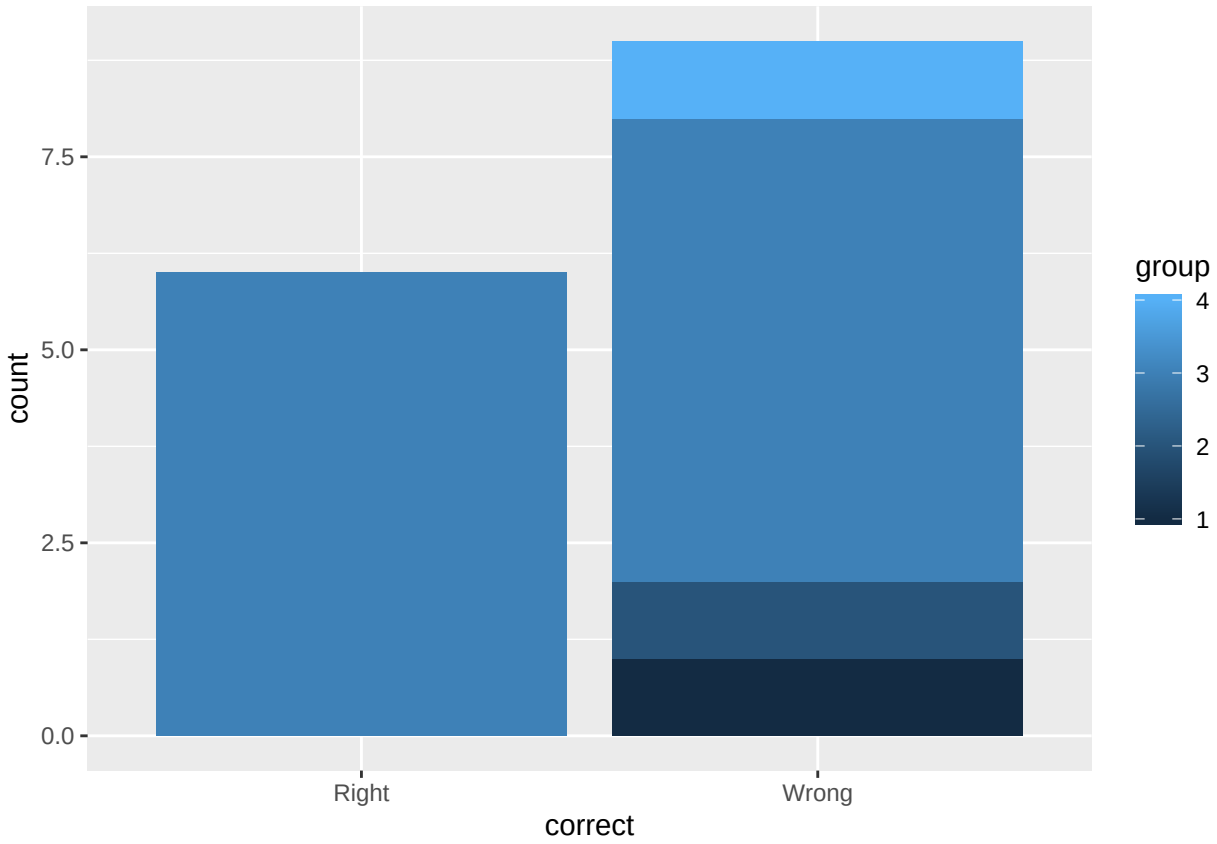
Answer centered (organized by educational experiences)

```
D6 <- D1
D6$count <- 1
D6$correct <- ifelse(D6$answer==16, "Right", "Wrong")
D7 <- D6 %>% group_by(correct, edu) %>% summarise(sum(count))
names(D7)[names(D7)=="sum(count)"]="count"
p4 <- ggplot(D7, aes(x=correct, y=count, fill=edu)) + geom_bar(stat="identity")
p4
```



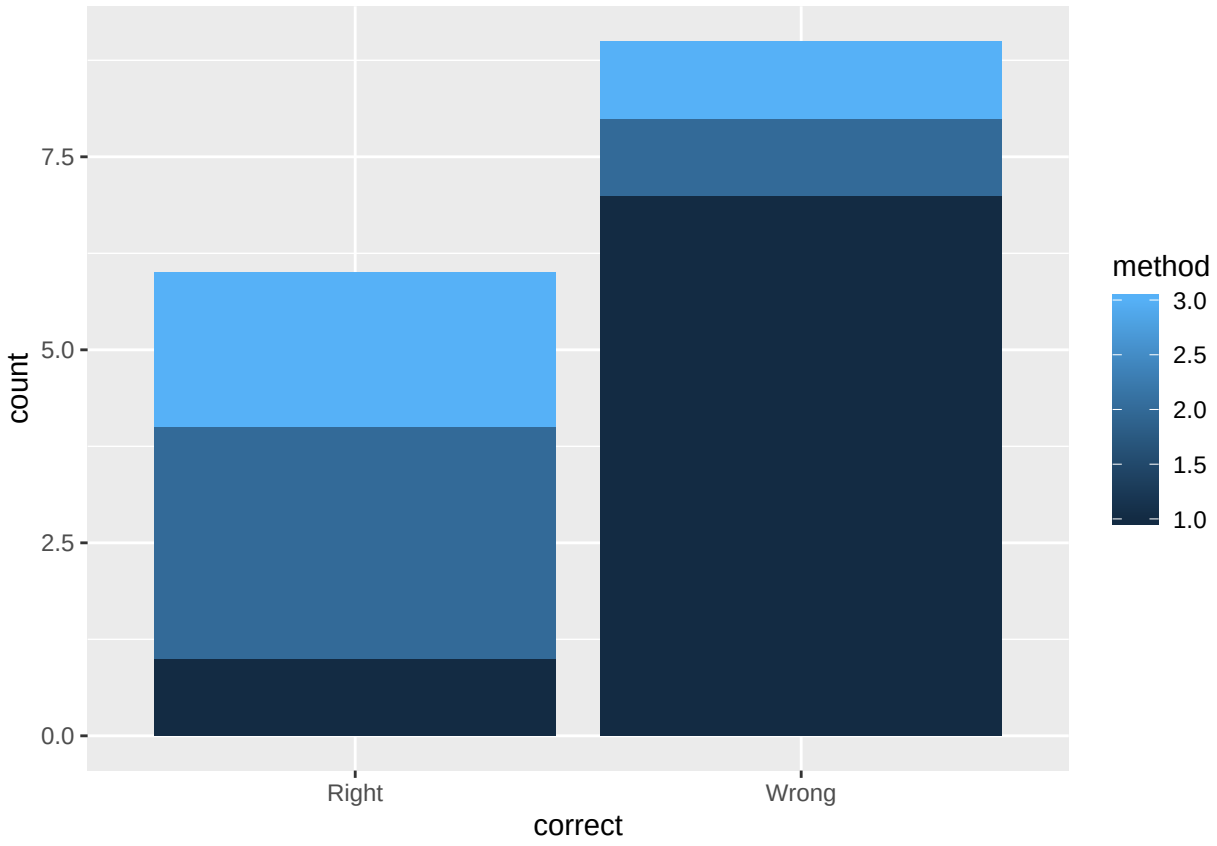
Answer centered (organized by age)

```
D8 <- D6
D8$group <-  ifelse(D8$age<=12, 1, ifelse(D8$age <= 21, 2, ifelse(D8$age <50, 3, 4)))
D8 <- D8 %>% group_by(correct, group) %>% summarise(sum(count))
names(D8)[names(D8)=="sum(count)"]="count"
p5 <- ggplot(D8, aes(x=correct, y=count, fill=group)) + geom_bar(stat="identity")
p5
```



Answer centered (organized by methods)

```
D9 <- D6 %>% group_by(correct, method) %>% summarise(sum(count))
names(D9)[names(D9)=="sum(count)"]="count"
p6 <- ggplot(D9, aes(x=correct, y=count, fill=method)) + geom_bar(stat="identity")
p6
```


7.5
5.0
2.5
0.0
count
Right
Wrong
correct
method
3.0
2.5
2.0
1.5
1.0