

Statistics 101 Homework Short Report for Topic 04 AB

Each of the 92 students were given 20 questions from a bank of 54 questions. Figure 1 and Table 1 give the overall summary of student performance. Table 2 lists the students who did not perform well on this homework. Table 3 and Figure 2 provide summary statistics of the scores per question set and learning outcome.

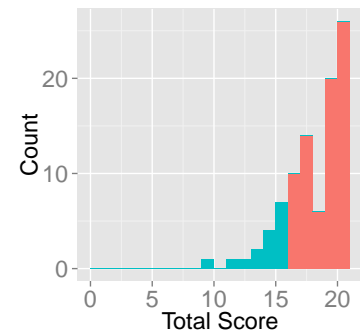


Figure 1: Histogram of scores. Blue data represent scores less than 80 percent.

| Mean | Std.dev | Min | Q1 | Median | Q3 | Max |
|-------|---------|-------|-------|--------|--------|--------|
| 17.66 | 2.37 | 9.00 | 16.00 | 18.50 | 20.00 | 20.00 |
| (88%) | (12%) | (45%) | (80%) | (92%) | (100%) | (100%) |

Table 1: Summary statistics of the scores

| % Correct | | % Correct | | % Correct | | % Correct | |
|-----------|-------|-----------|-------|-----------|-------|-----------|-------|
| adice | 75.00 | jtwalker | 75.00 | capeters | 70.00 | tbeatty | 65.00 |
| akmorton | 75.00 | kives | 75.00 | grantsch | 70.00 | evan | 60.00 |
| cds | 75.00 | nsevers | 75.00 | jwiltz17 | 70.00 | crmwoods | 55.00 |
| jaeleaha | 75.00 | bergeson | 70.00 | jcanders | 65.00 | jng | 45.00 |

Table 2: Students whose correct percentages are less than 80%.

Topic 04 Learning Outcomes:

- Identify various ways to describe the relationship between two categorical variables.
- Describe the connection between the data table and the contingency table for summarizing the relationship between two categorical variables.
- Identify the response and explanatory variables for investigating the relationship between two categorical variables.
- Determine the marginal distributions of the two categorical variables from a contingency table.
- Determine the conditional distributions or conditional proportions of the response variable given the explanatory variable from a contingency table.
- Interpret displays of the relationship between two categorical variables to make generalizations within the context of the problem.
- Determine whether or not there is an association between the response variable and the explanatory variable using a mosaic plot (segmented bar charts) or contingency table.

| LO | Qset | # | Mean | Std.dev | Min | Median | Max |
|----|------|---|-------|---------|--------|--------|--------|
| B | B | 4 | 100 | 0.00 | 100.00 | 100.00 | 100.00 |
| B | D | 4 | 98.91 | 10.43 | 0.00 | 100.00 | 100.00 |

| | | | | | | | |
|---|---|----|-------|-------|------|--------|--------|
| B | C | 4 | 96.74 | 17.86 | 0.00 | 100.00 | 100.00 |
| G | L | 1 | 95.65 | 20.50 | 0.00 | 100.00 | 100.00 |
| D | G | 5 | 95.11 | 19.70 | 0.00 | 100.00 | 100.00 |
| D | F | 5 | 93.48 | 19.91 | 0.00 | 100.00 | 100.00 |
| G | M | 1 | 93.48 | 24.83 | 0.00 | 100.00 | 100.00 |
| E | I | 10 | 89.13 | 26.20 | 0.00 | 100.00 | 100.00 |
| A | A | 2 | 84.78 | 36.12 | 0.00 | 100.00 | 100.00 |
| E | H | 5 | 83.15 | 34.19 | 0.00 | 100.00 | 100.00 |
| C | E | 5 | 82.07 | 34.44 | 0.00 | 100.00 | 100.00 |
| G | K | 1 | 78.26 | 41.47 | 0.00 | 100.00 | 100.00 |
| G | N | 3 | 72.83 | 44.73 | 0.00 | 100.00 | 100.00 |
| F | J | 4 | 70.65 | 45.79 | 0.00 | 100.00 | 100.00 |

Table 3: Summary statistics of the question sets. Rows are sorted by mean scores, which are marked red if less than 80 percent.

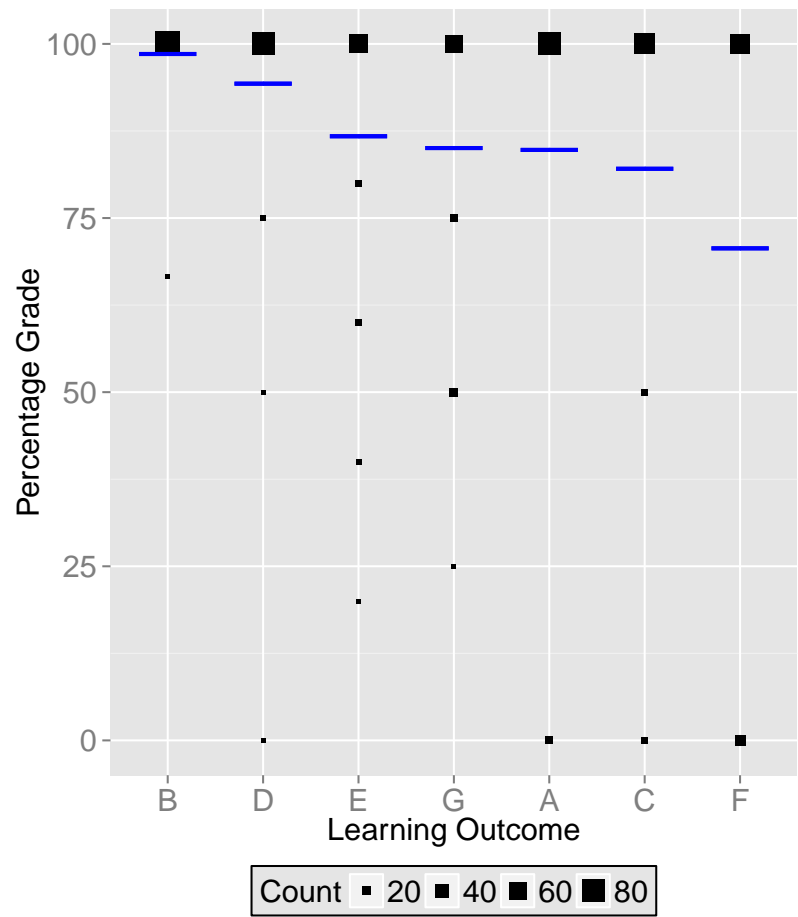


Figure 2: Fluctuation diagram of percentage correct by learning outcome. Mean scores are drawn as blue bars.