# Calculate critical thinking example 

Environment, Nature

## ASSIGN BUSTER

## Analysis of Qualitative Data <br> - The percentages of students in each age category and display this information visually

## 20-24-16\%

25-29-39\%
30-34-16\%
35-39-12\%
40-44-6\%
45-49-6\%
$50+-4 \%$
The highest percentage fell in the age category 25-29 (39\%) and the lowest 50+ (4\%).

- Let readers know what the modal age category is and explain what problems might arise if you try and provide readers with the mean age of students

The modal age category in this set of data is 25-29 years. This is simply because it is the most frequent occurring value among the age categories. From the set of data, the estimated mean age of the students is around 37 . 5years. From the pie chart above, the percentage of students in the mean age is $12 \%$. Using the mean age would be problematic in the sense that it would be missing out on the $66 \%$ of the students who fall under the mean age and the $18 \%$ who fall above the mean age. As a result, the mean age would cause problems due to the categorical nature of the age variable. The mean age could provide a false picture for the entire distribution of data.

- Prepare/write a narrative (or, more simply put, tell readers a story) about questions 4 and 5 . You could do this by:
- Providing readers with the percentages of how question 4 was answered The question 4 of the questionnaire asked the 50 participants whether they considered that the Master's Degree program will help them develop their careers. As the table above illustrate, the results are not shocking for those taking their time and effort to undertake a rigorous Masters Degree course. \%0\% of them strongly agreed with the statement above. 40\% agreed with the statement while only $4 \%$ disagreed with the statement. No one strongly disagreed with the statement but 6\% of them were undecided. Question 5 asked the participants to briefly state their reasons for responses made in question 4. The participants who fall within the ' strongly agree' and ' agree' categories said that they were seeking a job or to broaden their employment opportunities. For the participants who ' disagreed' with the statement, they stated that they took the course for personal or non-career related reasons. For those who were undecided, one of the participant cited age related reasons while the other one was considering returning to his old job (teaching).
- If you were to analyze a relationship between two variables - say age and years spent studying
- What test(s) could you use?

The simplest test that I could use would be cross-tabulation. Cross tabulation allows the comparison between two variables. Cross tabulation paints a vivid picture of the interrelations between two variables and can be helpful in finding the interactions between them. Cross tabulation aids in the searching
for patterns of interrelationship between variables. In this case, the two variables that would be compared are " age" and " years". Given the nature of the data presented, we can easily come up with the period of years that the Masters students spent pursuing a given program. For example, a Master's student may have taken 1-2 years studying for his/her certificate, 24years for a Diploma course and 3-4 years for a Degree course. In this example, the students may have spent approximately 5-8years studying. From the set of data we can easily come up with categories in terms of years spent in school that would include 1-2yrs, 3-4, and 4-6 and so on. These categories would be compared with the age of the Masters students that would include 20-24 years, 25-29 years up to 50 years and above. A table of data can be created including the variables ' age' and ' the amount of years spent studying using cross tabulation.

- How might you display the relationship graphically?


## Works Cited

Cramer, Duncan. Advanced Quantitative Data Analysis. Maidenhead, Berkshire, England: Open University Press, 2003. Internet resource.

