A Pilot Study On The Students' Knowledge In Research Publication Ethics: A Statistical Approach

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Objective

The aim of this study is to investigate and compare graduate and undergraduate students' knowledge regarding research publication ethics, and to develop and standardize an instrument (test) to get a sense of baseline knowledge people have about ethics.

Introduction

Publication ethics is a constant concern for academic and students alike as being as author has important academic, social, and financial implications. Anecdotal evidence suggests that 10% to 15% of all researchers are involved in some form of misconduct or inappropriate research practices at some point in their careers. However, there are no clear guidelines for either undergraduate or graduate students about publication ethics (Jahanfar et al., 2017).

This pilot study is a part of a bigger study of "Global Research Ethics." For this study, I was not able to get access to the Chemistry students. I thought that there would be difference in graduate and undergraduate students' knowledge of research publication ethics.

Progress

The current status of this project is as follows:

- Developed instrument to assess the ethical knowledge of the students
- Collected data to investigate the validity of the questionnaire and the difference of knowledge between graduate and undergraduate students
- Analyzed the data

Method

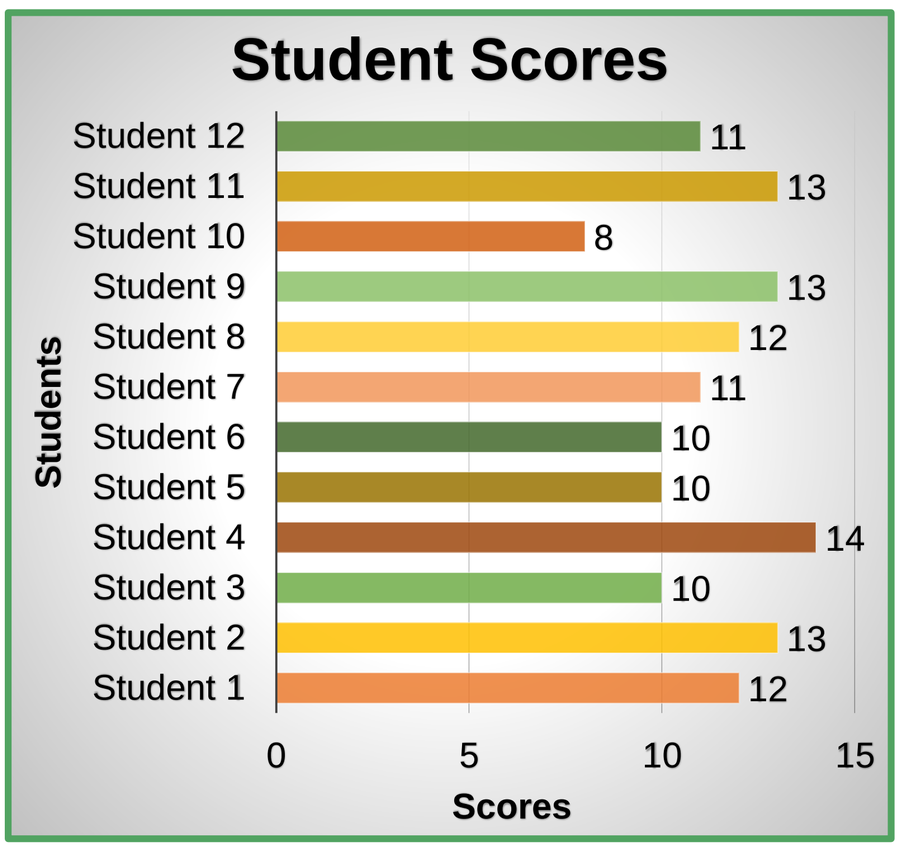
A cross-sectional, questionnaire-based (MCQ) study was conducted with 12 students from English and Technical Communication and History departments. The reliability, difficulty and discrimination index of the questions and the probability of difference of knowledge were calculated by the following formulas (Mukherjee & Lahiri, 2015):

- Difficulty Index (p)= c / n
- Discrimination Index (DI)= PU - PL
- Kuder-Richardson 20 (KR 20)= [n/n-1] * [1-(Σp*q)/Var]
- T-test= Calculating the mean score of graduate and undergraduate students, standard deviation, tails (2) and type (3)

Analysis was done on Ms-Excel by scoring the items dichotomously, i.e., the correct answers and the incorrect answers were coded 1 and 0 respectively.

No difference between graduate and undergraduate students' knowledge of research publication ethics

6 Graduate Students (1 to 6)
6 Undergraduate Students (7 to 12)
23 Questions



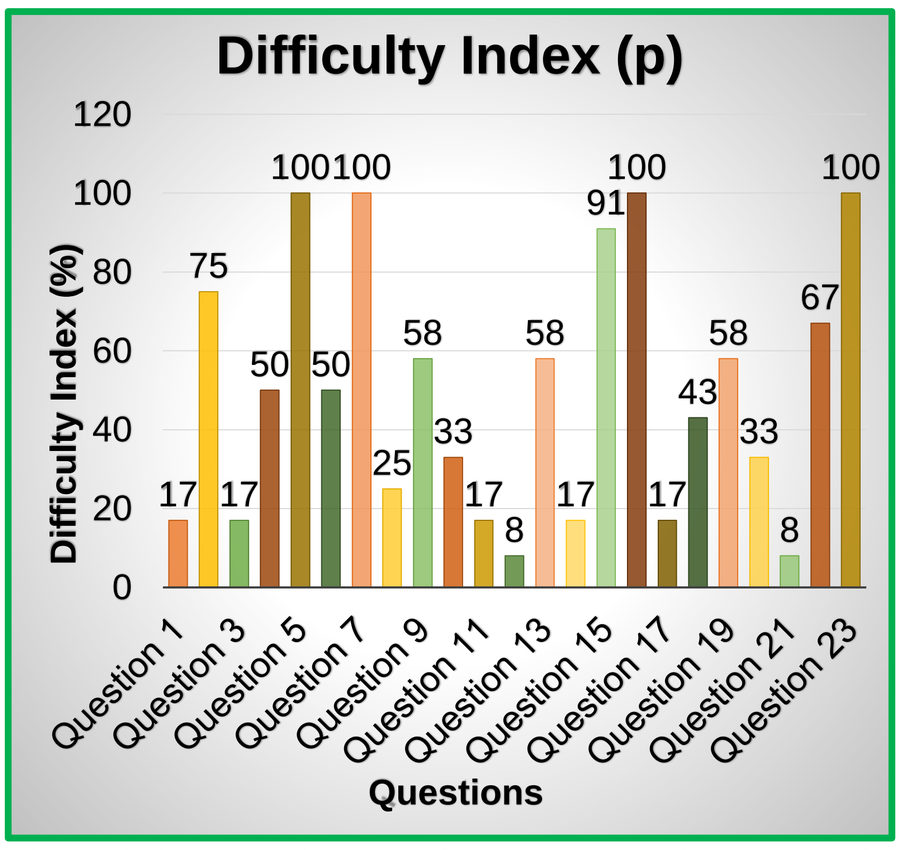


Table 1: Analysis of Internal Consistency and Probability of Difference of Knowledge

Parameter	Value
Kuder Richardson 20	0.2
T STAT	0.1593

Table 2: Analysis of MCQ Paper Based on Various Item Indices (N=23)

Parameter	Mean
Difficulty Index (p)	49.53%
Discrimination Index (DI)	.79

Results and Discussion

Result showed that the highest score was 14 and the lowest score was 8. Means of graduate and undergraduate students' scores were 11.5 and 11.3 respectively P value 49.53% and DI value .79 indicated towards correctly keyed, less confusing and ambiguous, and medium challenging items with only one correct answer for each question. However, questions 5, 7, 16, and 23 were scored 100% (most easy) and questions 12 and 21 were scored 8% (most difficult). These questions need to be revised. KR 20 value 0.2 indicated towards the loosely correlated items. T stat 0.1593 indicated towards the less significant difference between graduate and undergraduate students' research publication ethics knowledge.

Conclusion

I found that there was no significant difference of research publication knowledge between graduate and undergraduate students. Although the questionnaire met the level of reasonable difficulty index and discrimination index, the internal consistency (testing the same construct) of it needs to be improved for the target audience. The next steps are to change questions 5, 7, 12,16, 21, and 23 for the target audience, find a larger heterogenous sample, and produce more validated questionnaire with high internal consistency.

References

Jahanfar, S., Molainejad, M., & Izzat, D. (2017). Knowledge and Perception of Students towards Publication Ethics: A Comparative Study in Two Academic Settings. *Journal of Clinical Research & Bioethics*, 8, 306. doi:10.4172/2155-9627.1000306

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