

Students' perception of statistics prior to taking the class.

Herbert W. Helm Jr. ¹

¹Behavioral Sciences Department, Andrews University

helmh@andrews.edu

INTRODUCTION

A statistical methods class is required for most undergraduates in order to fulfill educational requirements or as a pre-requisite (Bond, Perkins, & Ramirez, 2012). Previous literature states a possible curvilinear relationship between statistics anxiety and performance within a statistical methods course (Keeley, Zayac, & Correia, 2008). As the semester progressed students' anxiety towards statistics decreased while performance increased (Keeley, Zayac, & Correia, 2008). Furthermore, in "Students' Attitudes Toward Statistics Across the Disciplines: A Mixed-Methods Approach" (2012), 63% of students reported having positive attitudes towards statistics. Additionally, Elizabeth Walker also found that undergraduates have moderately positive attitudes towards statistics and this stays consistent throughout the semester (2017). The question I asked was what their perception of stats was before the class began.

OBJECTIVE

A survey was used to gain perceptions that students had of the class before they took it. At the beginning of the semester I talk about what stats is and perceptions, or misperceptions, that they may have of the class. The objective of this research study is to look at the statistical results of the survey conducted - regarding undergraduates' perceptions of statistics prior to taking the course - and discuss whether students may need a more realistic perception of the class.

METHODOLOGY

The participants of this research study were students enrolled in our "Research Methods I: Stats for the Behavioral Sciences" course during the fall semester of 2019. They were given a questionnaire concerning views they had of statistics and the class prior to encountering the subject matter in the classroom. No personal identifiers were utilized.

Students completed the questionnaire without complaint and it was stated: "There are no right or wrong answers and in no way does this affect your grade in the class, so please feel free to put your most honest view at this time." The first set of questions had them relate a statistics class to other types of classes (e.g.: math, language, logic, etc). This was followed by questions which included: how much they thought they would use statistics in their lives, and where they would use them. Then a series of questions that were related to math skills, followed by a series of questions related to studying for the class and what they were willing to do if they began to do poorly.

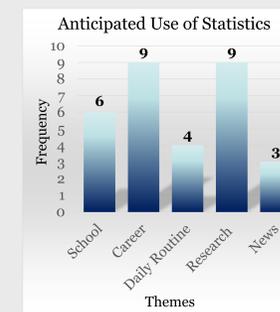
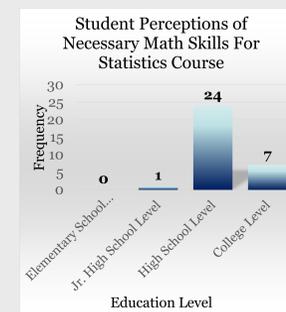
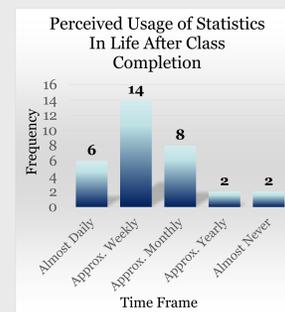
Data collected from the questionnaire was put into descriptive statistics and/or some type of graph and presented to the class the following class period. When there were discrepancies between their perceptions and how the class was being taught, or what statistics was about, discussion about what might be a more realistic perception followed.

RESULTS

Students' Perception of Subject Matter in Statistical Methods Compared to Previous Courses

	Mean	Standard Deviation
Is like a math class	7.78	1.2
Is like a history of psychology class	4.41	2.45
Is like a language class	3.81	2.61
Is like a class on logic	7.78	1.81
Is like a computer science class	4.34	2.44
Is like a philosophy class	3.59	2.14

1= strongly disagree; 10= strongly agree



Level of Preparedness in Mathematics

	Mean	Standard Deviation
1= not well prepared at all; 10=very well prepared	6.28	2.23

Level of Familiarity With Excel

	Mean	Standard Deviation
1= not at all; 10=fluent	5.34	2.70

Level of Calculator Proficiency

	Mean	Standard Deviation
1= not proficient at all; 10=very proficient	7.66	1.62

Students' Perception of Hours Per Week Necessary to Succeed in Statistical Methods

	Mean	Standard Deviation
Possible Entries = 0- 11+	6.19	2.05

Students' Anticipated Hours of Study Per Week

	Mean	Standard Deviation
Possible Entries = 0- 11+	5.00	1.68

Level of Student Anxiety In Anticipation of Statistical Methods

	Mean	Standard Deviation
Possible Entries = 0- 10	5.78	2.86

Students' Willingness to do The Following to Improve Their Grades

	Mean	Standard Deviation
Ask questions in class when confused	7.53	2.97
Work with other students	8.19	2.13
Thoroughly read the textbook	8.72	1.67
Attend tutoring at lease once a week	7.44	2.80
Increase the number of hours studying per week	8.72	1.61

1= not very willing at all; 10= very willing - will do whatever it takes to do well.

DISCUSSION

While students seem pretty aware that this class is like a math class and involves logic, they seem to underestimate the amount of language elements that they will be learning. In my particular class, the math elements are emphasized less than the language components.

Their view of the level of math needed was in line with, or higher, than what is actually used in class. Again, this suggested that students may see this as basically another math class.

While I don't believe the majority did it, students perception of the hours needed to study per week, a mean of 6.19, was in line with the suggested 2 hours for every hour they spend in the classroom.

I found it interesting that the level of anxiety prior to class was in the middle of the Likert scale range - suggesting against an overabundance of anxiety.

Probably the highest grouping of means overall was their willingness to do things to improve their grades. This is not in line with what I see during the semester and may be a reflection of their early semester desire to do well rather than a long-term willingness to follow through during the semester. The lowest rated of these, although not by much, was tutoring. Ironically, this is often the one that I see really helping the student.

REFERENCE

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Special Thanks to Jasmine Kim for doing the literature review as well as putting together this poster.