

Introduction Survey Analysis

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Below is an analysis of an introductory survey given to a graduate level Higher Education course at The Penn State University. The purpose of the survey is to gather general demographic, geographic, experiential, and aspirational information from the students. All twelve participants are female students. Of these twelve students, nine are located in the Eastern Standard Time Zone, two in the Mountain Standard Time Zone, and one in the Beijing Standard Time Zone (Figure 1). Regarding international status, six participants opted out of answering, one identified as a U.S citizen, one as an international student within the United States, one works for a foreign company overseas, one is not international but is working for a foreign company, and one is not international.

Expectations for the Class

Learning Objectives

All survey participants are pursuing a graduate degree with 25% pursuing a doctoral degree and 75% pursuing a master's degree (Figure 2). In response to the prompt, "What do you hope to get out of this class", 75% of the participants noted learning objectives directly connected to attaining practical research and data analytic skills, while the remaining 25% of participants hope to acquire general knowledge. Many of the participants reported specific uses for attaining these practical skills. For example, one student specified their goal to gain, "A better understanding of how to identify and address gaps in education that directly impact underserved and underrepresented populations". With only two students reporting formal work experience within institutional research, the majority of the students within this section of the course likely hope to learn foundational skills associated with assessment and data analysis.

The administrative career aspirations for the survey participants also vary but include general positions in academic advising, administration in medical education, assessment officers, student affairs officers, and general leadership positions within higher education. Figure 5 more specifically outlines

these aspirations in respect to the students' academic program membership. As the students in the class possess relatively low experience and generally unspecified career aspirations, an objective of the course could be to practice and demonstrate the usefulness of data collection and analysis in a variety of situations.

Concerns

Time and workload management seem to be a primary concern among the students who participated in the survey as over half of the participants are working full time (58%) or working as a graduate assistant (25%) (Figure 3). One of the two students who is not currently working noted being concerned due to, "the workload while I am also taking the M.Ed. capstone and finishing my dissertation". Two students noted concerns regarding their familial obligations, and one student expressed COVID-19 related stress.

Prerequisite knowledge also is a prominent concern among the survey's participants. Only two of the twelve students have 2-5 years of prior work experience within Institutional Research (IR) and assessment, while the rest of the class reported having no experience in these fields (Figure 4). Of these ten students, seven have completed at least one course in IR, and four have completed at least one course related to assessment. Regarding prior experience in statistics and analytics, all twelve students have recently taken one related course or have taken a course before but want to refresh their knowledge on the subject. Finally, two students expressed concern regarding software unfamiliarity and six students specified concerns regarding unfamiliarity with statistics, analytics, and general mathematics.

Recommendations for the Professor

Addressing Student Concerns

The participants' chief concerns involve insufficient prerequisite knowledge and time management. The professor could alleviate some of these concerns through providing suggestions for

additional materials and tutorials that could teach students prerequisite knowledge. For example, including YouTube teaching videos or tutorials through LinkedIn learning as statistical or analytic techniques are being taught within the course materials. This way, if a student is missing foundational knowledge, they know how and where to find it to self-study and be prepared for class.

Regarding time management, early notification of assignments and required readings are provided to the students through the syllabus and course materials. This should provide sufficient information for the students to allocate their time appropriately to complete the assignments and manage their time efficiently.

Conclusion

The sample size of the survey is small with only twelve participants. Because of this, the data can be easily read with a basic frequency table. However, given a larger data set, bar-charts and conditional probabilities could be considered. For example, of the students who have prior work experience within IR, data analysis, and assessment what percentage feel confident in their analysis skills? Furthermore, the responses were largely qualitative with the possibility of an open answer. It could be useful to ask the questions in a more quantifiable way. For example, a confidence scale between 1-5 could be used to assess the participant's analytic confidence. Another idea would be to limit the amount of possible short answer responses by including more specific questions. This would be useful because free response questions are difficult to analyze and quantify. However, it is possible for the researcher to read the free response question and assign the answer to an existing or new category. Of course, given a large data set and many free response questions from the participants, this could be a tedious and overwhelming task.

Figures

Figure 1:

Row Labels	Total
Beijing Standard Time	1
EST	9
MST	2
Grand Total	12

Figure 2:

What program is the participant a member of?	Total
Both PSU PhD and IR Certificate	1
Master's program at Penn State	9
MEd at PSU and PhD at another institution	1
PhD or D.Ed program at Penn State	1
Grand Total	12

Figure 3:

Employment Status with respect to Participant's Program	Total
Currently, I am not working	2
Master's program at Penn State	1
MEd at PSU and PhD at another institution	1
I have a full-time job/internship	7
Both PSU PhD and IR Certificate	1
Master's program at Penn State	5
PhD or D.Ed program at Penn State	1
I work as a graduate assistant	3
Master's program at Penn State	3
Grand Total	12

Figure 4

Prior Work Experience within Institutional Research, Assessment, Statistics, and Data Analysis	Total
2-5 years	2
I recently took at least one course related to data analysis or statistics	2
2-5 years	2
No prior experience and this is my first course	3
I have taken data analysis/statistics courses before but I need a refresher	2
No work experience, but have taken at least one related course	2

I recently took at least one course related to data analysis or statistics	1
No prior experience and this is my first course	1
No work experience, but have taken at least 1 course in IR	7
I have a STEM (Biology) background and am currently a high school teacher, so I have done small data analysis, not large data analysis. I've also taken HIED 801	1
No prior experience and this is my first course	1
I have taken data analysis/statistics courses before but I need a refresher	3
No prior experience and this is my first course	2
No work experience, but have taken at least one related course	1
I recently took at least one course related to data analysis or statistics	2
No prior experience and this is my first course	2
The only experience I have with data/analysis or statistics is from previously taken HIED courses.	1
No work experience, but have taken at least one related course	1
Grand Total	12

Figure 5:

Career Aspirations and Program Membership	Total
Academic Advising	2
Master's program at Penn State	2
Administration in Medical Education	1
Master's program at Penn State	1
Assessment Office	1
Master's program at Penn State	1
Doctorate of Education	1
PhD or D.Ed program at Penn State	1
Leadership in Higher Education	4
Both PSU PhD and IR Certificate	1
Master's program at Penn State	2
MEd at PSU and PhD at another institution	1
Student Affairs	3
Master's program at Penn State	3
Grand Total	12