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Reader's Response: Describing and Analyzing Quantitative Data

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Reader's Response: Describing and Analyzing Quantitative Data

Abstract

Excerpt: The work of Harris and Martin (2012) on student motivations for choosing to complete online courses provides information on an important area of development within post-secondary education. As noted by the authors, online learning is an expanding field and learning more about why students choose online courses and their experiences in such courses is critical to the development of online courses. The researchers had a sizable dataset (n = 644) and I looked forward to reading the results produced by such a large sample, but as a reader there were times when I was confused by the results. I think it is worth highlighting this confusion so that scholars publishing in IJ-SoTL can reflect on how to present quantitative data in ways that remain clear to all readers.

Keywords

Scholarship of teaching and learning, Online courses, Online learning

Reader's Response

A response to "Student Motivations for Choosing Online Classes"
< http://academics.georgiasouthern.edu/ijsotl/v6n2/articles/Acc%20Art_Harris%20&%20Martin/index.html >
by Heidi S. Harris & Elwyn W. Martin, *International Journal for the Scholarship of Teaching & Learning,* Volume 6, Number 2 (July 2012)

Describing and Analyzing Quantitative Data

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The work of Harris and Martin (2012) on student motivations for choosing to complete online courses provides information on an important area of development within post-secondary education. As noted by the authors, online learning is an expanding field and learning more about why students choose online courses and their experiences in such courses is critical to the development of online courses. The researchers had a sizable dataset (n = 644) and I looked forward to reading the results produced by such a large sample, but as a reader there were times when I was confused by the results. I think it is worth highlighting this confusion so that scholars publishing in IJ-SoTL can reflect on how to present quantitative data in ways that remain clear to all readers.

1. Create clear figures to enhance understanding of results.
Oftentimes a visual representation of data in the form of a bar graph or histogram can aid the reader's understanding of results. Yet, for this to be the case authors should follow some standard guidelines for figure construction. When presenting grouped frequency data it is common practice to maintain an equal interval size across the groupings in order to avoid misrepresenting findings (Aron, Coups, & Aron, 2012, p. 20). Figure 1 in Harris and Martin's (2012) study presents groupings with intervals of varying size. Although I can assume that the first grouping (18 to 22 year olds) was created to represent the most common interval of ages among undergraduate students, it is not clear to me why subsequent groupings vary in size. Presenting a graph with equal intervals or explaining to the reader the rationale behind the interval sizes will aid the interpretation of results. A second guideline to consider is the labeling of the y axis when presenting grouped frequency data. If the number of participants varies across the groups you have created, you should consider representing the *percentage* of participants on the y axis to allow for a meaningful comparison among the different groups (Aron, et al., 2012, p.23).

2. *If collecting quantitative data, choose appropriate analyses and report effect sizes.*
If you have collected quantitative data consider the different analyses available to you. Although Figure 1 represents a relationship between age and course delivery mode, it should be paired with the results from a chi-square test for independence that would address the hypothesis that these two variables are related. Conducting

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such a test would also permit the calculation of an effect size, which would provide additional information about the strength of relationship between the variables.

3. *Provide the reader with sufficient detail to evaluate all aspects of the study.*
As with any publication, the reader expects sufficient information to be presented so that she can form an evaluation of the work. The instrument for data collection in this study was an online survey containing 16 multiple choice questions. Unfortunately there was no appendix containing the instrument. This would present a challenge to a reader in many areas, but as this particular study concerned motivations the absence of the survey is particularly important. Individuals' motivations for doing, or not doing, a specific behaviour can vary widely. I am not convinced that a survey with a closed response format would be an adequate instrument for addressing potentially wide-ranging motivations (e.g., responses can range greatly depending on open or closed response formats – see Schwarz (1999) for more information). Only by reading the survey items and being provided with more information about how the survey was constructed would I be able to make a judgment about the adequacy of the instrument.

4. *Consider how you frame survey questions.*
Harris and Martin (2012) report their results "indicate that students desire interaction and support in their online courses." Yet based on the question and response options posed to students, I do not think it was possible to obtain any other type of result. Before the Methods section the authors note that the response options for the question about the level of interaction desired by students during an online course were limited to "increase" or "remain the same." These options combined with the framing of the question "what elements students *desired more of* regarding …" would make it impossible to conclude anything but that "students desire interaction and support in their online courses." When constructing survey or interview questions one must consider how the format and wording of a question can influence the participant's response. For a thoughtful commentary on this topic please see Schwarz (1999).

References

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