Improving Data Analysis and Interpretation and Writing Skills with Continuous Feedback on Laboratory Reports

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The practice and the need it addresses

Evidence this practice benefits UNLV Students

Resources and where to find them

How other UNLV teachers might adopt this practice

Description of Tool:

Students are provided with continuous feedback on laboratory reports and on a design project to improve their skills in data analysis and interpretation and technical writing. The tool uses the Turnitin feature of Webcampus.

Objectives:

To improve student learning outcomes related to: a) an ability to design and conduct experiments, as well as to analyze and interpret data b) an ability to communicate effectively.

It is believed that more accurate writing

will allow students to better express the significance of their data and, vice versa, - that a more in-depth analysis and interpretation of data will stimulate students to express their findings accurately with proper English.

How does this tool benefit UNLV students?

Graduates from the program will have better skills to analyze and interpret data. In addition, the graduate's ability to prepare thorough reports will be improved because of continuous feedback on English writing and because greater ability in data analysis and interpretation is acquired.

Decrease in English Errors:

Results are presented for CEE 450. The number of grammar, spelling, and punctuation errors decreases significantly as students write more reports. However, not all students experience the same improvement. Students with initially weaker writing skills experience less improvement. We have concluded that for these students, writing feedback and assistance has to start earlier. After the second year of experience with this technique, the department has decided to introduce it in CEE 367L as well. CEE 367L is a prerequisite to CEE 450.

Analysis and Interpretation:

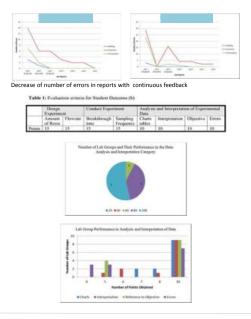
Within the analysis and interpretation of data, over 70% of the groups performed well in all categories. However, about 20% of the groups did not discuss experimental errors in their reports. In addition, about 30% of the groups did not refer back to the objectives of the project as guidance to frame their conclusions. Although all laboratory experiments that precede the Term Project require some discussion and computation of errors, it seems we still need to emphasize even more the need for error estimation and discussion of experimental data. Improvement in writing conclusions is also needed.

Is this resource translatable across disciplines?

This tool is directly applicable to any laboratory course. It is also applicable to clinical data generated from interviews, rather than laboratory experiments. It is translatable to most science, engineering, health, and business courses.

Is this resource available to other UNLV faculty?

Yes, any faculty can use it on Webcampus using Turnitin Assessment.



How it works:

Create specific markers for common grammar and spelling errors. Consistently use the markers in grading all reports. Assessment of markers from report to report can correlate to writing improvement.



