Digital or Traditional? Student Engagement in Group Work Towards Facility with Evidence-Based Argumentation

Renée M. Calkins
Classics/Department of Foreign Languages and Literature

UNIVERSITY of WISCONSIN
UWMILWAUKEE

Introduction

Studies investigating the effects of word processing and digital media on student writing and learning have not yielded a clear consensus. On the one hand, the use of word-processing for note-taking has been shown to detract from student learning (Mueller & Oppenheimer, 2014). Other studies, however, suggest that the speed with which ideas can be recorded through word processing applications is highly productive for adept writers during the brainstorming phase of written projects (Finkel, 2017). More nuanced investigation of specific applications of digital technologies to writing and learning is thus desirable. To this end, the objective of this study is to investigate whether or not a traditionally successful intervention for written assignments (peer review exercises in group work) has different levels of success depending on the medium (digital or paper) through which students engage with each other's work.

Methods

The pilot phase of the study was conducted during the fall semester of 2017 and compared students' acquisition of facility in constructing evidence-based arguments through peer review exercises. For each semester throughout the data-collection phase of the project, peer-reviews of drafts accompany each of the three essay assignments. One section of the class completes the peer-review exercises using traditional paper worksheets. The other section of the class completes the same exercises using a digital display and a digital version of the same worksheet (an editable form in PDF format) via the shared screens and individual laptops in an active learning classroom at UWM.

Changes in students' mastery of evidence-based arguments are tracked through their comments on peer-review worksheets and the grades they receive on the sequence of three short essays completed over the course of the semester.

Data Collection

- Active Engagement
  - A research assistant tracks how much time students spend actively discussing each other's drafts during the peer-review exercises.
  - Students complete a reflective essay at the end of the semester with the goal of addressing their own perceptions of the exercises as a learning process.
- Quality of Peer-Feedback
  - Students' comments recorded on the peer-review worksheets are classified as either "grammar and format" or "thesis and argument" with a view to determining whether or not students' assessment of each other's work becomes more sophisticated over the course of the semester.
- Quality of Writing
  - The three essays completed over the course of the semester have the same requirements in terms of format. Only the content on which each essay changes with each assignment.
  - The grades students receive on the sequence of essays over the course of the semester are tracked in order to assess changes in achieved facility with literary analysis.

Limitations

- The sections of the course being compared each semester do not take place during the same days and times of the week.
- The classrooms in which the sections are held all accommodate arranging students in groups, but do not necessarily have the same format.
- In the pilot semester, there were only 20 students in each section who consented to be subjects of the study and completed the semester.

Preliminary Observations

Both groups of students showed improved facility with literary analysis over the course of the semester, but a larger portion of students completing the peer-review exercises on paper improved over the course of the semester (14/20 compared to 10/20). Average improvement over the course of the semester was also comparable, but, again, the students using paper achieved a higher level of mastery with an average score of 17.3/20, compared to 16.5/20, on the third essay. Given the limitations of this pilot phase, however, these differences cannot yet be linked to the difference in medium with any degree of certainty.

Select Bibliography

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For further information

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Additional questions should be addressed to:
Renée M. Calkins, Ph.D.
Senior Lecturer in Classics
Department of Foreign Languages and Literature
University of Wisconsin at Milwaukee
email: calkinsr@uwm.edu