

# Effective, Interesting, Useful?

## An Evaluation of the Carnegie Mellon Online Writing Tutor

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### INTRODUCTION

The Carnegie Mellon Online Writing Tutor is a suite of online tutorials publicly available through the tutor website: <http://www.telstar.ote.cmu.edu/writingtutor>

Currently, five interactive tutor modules are featured with several others in production, scheduled to become available soon. The five published modules concern:

- Writing for non-technical audiences
- Crafting framing statements
- Appropriately using punctuation
- Writing actively
- Avoiding wordiness

Several learning principles have guided the design of the Carnegie Mellon Online Writing Tutor. The tutor aims to train students' judgment abilities by providing general principles and ways of thinking about various writing issues. Each tutor module features:

- Example sentences and paragraphs that highlight topics and demonstrate the application of principles
- Scientific and technical example content that encourages students to understand importance of good writing in these fields
- Interactive exercises that follow most sections
- Immediate, non-judgmental feedback that appears after each question during exercises
- Final exercises that allow students to evaluate their comprehensive understanding of each module

### RESEARCH QUESTIONS

This project sought to answer two important research questions:

1. Does the Carnegie Mellon Online Writing Tutor provide students with a understandable, practical, and enjoyable writing resource?
2. Are specific design decisions, content texts, and interactive features working to help students understand the presented material?

To answer these two questions, two different measures were collected: survey feedback, and videotaped think-aloud protocols.

### PROCEDURE

Participants individually completed study sessions in which they were:

- Asked to select a module from the tutor index
- Encouraged to provide opinions and comments about both the textual content and layout of each page
- Informed that the study was intended to test the tutorial itself and not their writing skills
- Recorded by a video camcorder

After approximately 30 minutes of interaction with the tutor interface, the participants completed an online survey detailing:

- Demographic information
- Beliefs about writing
- Carnegie Mellon Online Writing Tutor:
  - Content
  - Interface
  - Practicality

### PARTICIPANTS

To date, eighteen undergraduate students have participated through the psychology department participant pool. Participants included:

- Technical, humanities, business, and artistic majors from all four class levels
- One English as a Second Language student

### ABSTRACT

The project investigates the effectiveness and practicality of using the Carnegie Mellon Online Writing Tutor to improve college students' writing knowledge and skills. Feedback generated through spontaneous commentary in a think-aloud protocol and self-reported information obtained via an online survey was used to evaluate both the educational value and ease of use of this online educational tool. The conclusions of this research will be directly applicable to the enhancement and future development of tutorial modules and instrumental in the establishment of the Carnegie Mellon Online Writing Tutor as an academic resource.

### RESULTS

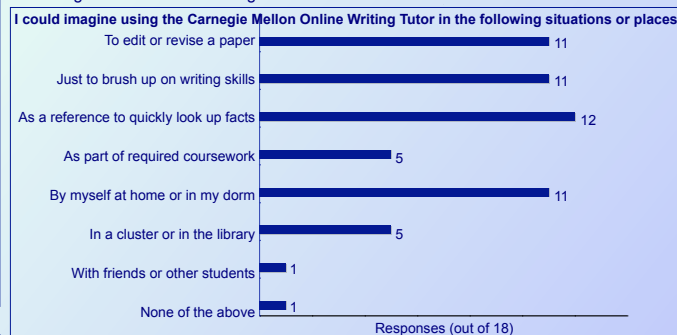
The following table details the results of the survey completed after participants had interacted with Carnegie Mellon Online Writing Tutor materials:

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Writing is very important in my field of study.	0	1	1	12	4
My writing skills are adequate to meet the demand of my field.	0	0	4	13	2
I learn effectively using online materials.	0	2	6	7	3
I learn effectively from other people (peers, professors, experts).	0	0	0	10	8
I learn effectively from books and other printed materials.	0	0	5	10	3
I understood the content presented.	0	0	0	9	9
It prepared me to answer the exercises.	0	0	2	7	9
It was appropriate for my writing skill level.	0	2	1	6	9
Module length was appropriate.	0	1	3	10	4
The appearance of the tutor was pleasing.	0	1	3	10	4
I understood how to navigate between pages and sections.	0	0	2	11	5
I knew what I was expected to do in each exercise.	1	2	2	10	3

These results indicate several interesting trends. It appears that participants:

- View writing as an important tool in their field of study across disciplines
- Feel that their writing skills adequately support their disciplinary goals
- Consider themselves effective learners across various educational media
- Understand the textual content of the Carnegie Mellon Online Writing Tutor
- Find the layout of the online writing tutor appealing and understandable

The following question provides important information about how students intend to use the Carnegie Mellon Online Writing Tutor:



Knowing the needs and intentions of students will allow better adaptation and refining of the existing modules and informed creation new tutor modules more readily accessible for the students' needs. Interestingly, only one of 18 students did not indicate any situation in which the tutor would be useful.

### CONCLUSIONS

These data are already informing local change at a module-specific level as participants remarked on certain phrases, interactive devices, and layout decisions. With the review of the videotaped responses, alterations to tutor modules will continue to correspond to participants' suggestions and comments.

This research project explored the effectiveness and practicality of introducing an online writing tutor to the campus community. This formative testing is critical to the continued development of existing tutor modules, the creation of future modules, and the establishment of the Carnegie Mellon Online Writing Tutor as a resource for all students.

### FUTURE ACTIONS

Following the completion of this study, several important actions to better answer both research questions addressed in this survey. These future plans include:

- Complete analysis of recorded sessions
  - The recordings will be examined for specific comments, like references to non-judgmental, immediate feedback, to highlighted principles, and to technically-themed examples.
- Change and update currently available tutors
  - Changes to reflect participants' suggestions will be implemented to make the Carnegie Mellon Online Writing Tutor more useful and responsive to students' needs.
- Complete revisions to unfinished modules
  - Using knowledge gained from this study, 'in-progress' modules will be updated and completed. These modules concern:
    - Presenting data in tables and figures
    - Formatting for clarity
    - Properly citing sources
- Simultaneously publicize the suite of tutors
  - Through conversations with Academic Development and faculty members, steps are being taken to make the campus more aware of the Carnegie Mellon Online Writing Tutor.
- Create new modules
  - Responding to participants' suggestions of future module topics, new modules will be considered. Potential module focus areas include:
    - Organizing, outlining, and drafting an essay
    - Making the most of persuasive language
    - Designing a professional resume

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### REFERENCES

<http://www.telstar.ote.cmu.edu/writingtutor>

Hayes, J.R., Bajzek, D.M., Brooks, J., Reyes, B., Hallinen, N., & Steinberg, E.R. (2007). *Developing an online writing tutor to improve technical-writing skills in engineering and science students*. In G. Fijlaarsdam (Series Ed.) and D. Alarnagot, P. Terrier, & J.-M. Celler (Vol Eds.), *Studies in Writing, Vol. 21, Written Documents in the Workplace*, 107-123.

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