

Intro Engineering Students' Perceptions of Textbook Formats

This Teaching Tip presents survey results of student perceptions of engineering textbook formats and complements Harding's^[1] discussion of student perceptions of lecturing methods.

During their sophomore year, chemical engineering and chemical and biological engineering students at Colorado School of Mines take two introductory engineering courses—"Introduction to Engineering Thermodynamics" during the fall semester and "Material and Energy Balances" during the spring semester. Classes are taught in an active-learning environment with a substantial amount of just-in-time-teaching addressing common mistakes and misconceptions arising from online homework assignments.

An end-of-semester course survey included the question "Many types of textbooks are available for engineering courses. Which type of engineering textbook is most appealing to you?" Available responses to this question were [1] traditional paper textbook, [2] electronic textbook, *e.g.*, Adobe facsimile of a textbook, [3] electronic textbook with interactive figures, or [4] electronic textbook with interactive example problems.

Results are shown in Figure 1. The preferred format is the electronic textbook with interactive example problems. The traditional paper textbook was the second most preferred format. Students commented that the traditional paper textbook was easier to bookmark, and highlight or underline key concepts.

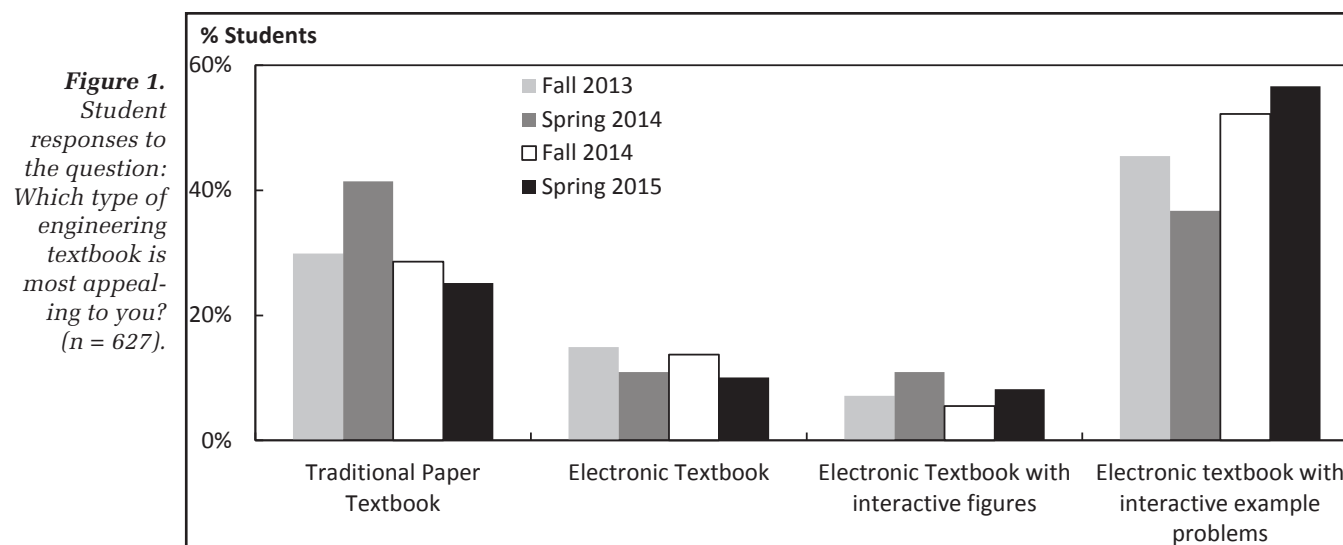
Interestingly, the Introduction to Engineering Thermodynamics course has a free electronic set of class notes written by the author (Adobe pdf format). These notes, called Just-In-Time Class Notes (JITCN), are made available to all students registered in the class on the Blackboard® course management system. Students are allowed to print the notes. Although the JITCN was not in one of the preferred formats, in response to another survey question 87.5 % of the Fall 2014 Introduction to Engineering Thermodynamics students ($n = 184$) strongly agreed or agreed that these notes were useful as a textbook for the class. Perhaps non-preferred formats can be acceptable or perhaps free trumped format.

Acknowledgments

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Reference

- Harding, K.G., "Process Engineering Student Perceptions of Lecturing Methods," *Chem. Eng. Ed.*, **49**(2), 101, (2015) □



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This one-page column presents practical teaching, advising, and diversity tips in sufficient detail that others can adopt the tip. Focus on the teaching method, not content. The column should be maximum 500 words, but subtract 50 words for each figure or table. Submit as a Word file to Phil Wankat <wankat@ecn.purdue.edu>.