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## Introduction

The growth of the Internet and the subsequent development of the user-friendly World Wide Web (web) have major implications for accounting education. Academia must reassess its roles and identify the impacts the web will have on students, instruction and faculty, as wells as on the interaction among those elements of academia and between them and the accounting world.

The purpose of this paper is
- to describe a general model of accounting academia to facilitate study of web impacts on accounting academia
- to identify the general implications of the web on the elements interactions and dimensions of accounting academia

This will provide a first step in both understanding the implications of the web for accounting academia and for proactively preparing for the web's impact on accounting academia.

## Descriptive Model of Accounting Academia

Accounting academia can be modeled as having 3 principle elements: students, instruction and faculty. In addition, these elements interact both individually and collectively with the *real world* of accounting that exists outside of academia. The elements form the basis of a descriptive model of accounting academia as shown in Figure 1.
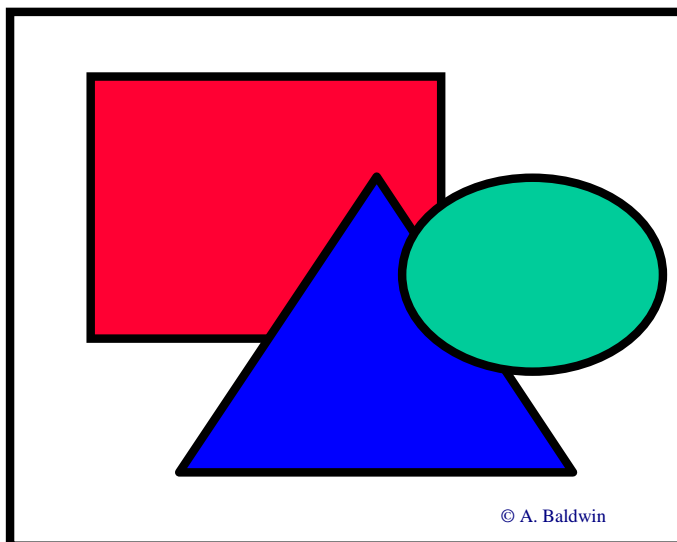


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**Figure 1. Descriptive Model of Accounting Academia**
(A pyramidal model viewed from above)

## Major Elements

The major elements of this descriptive model (shown in blue rectangles on Figure 1) are students, instruction and faculty. While these entities are obvious to most readers, they are briefly described below in the interest of completeness.

**Students.** Students are the recipients of education via accounting academia. Students may be full-time, part-time, unofficial, life-long learners, or any combination of the above. Of course, the vast majority of students are assumed to be traditional full or part-time students.

**Instruction.** Instruction is the basic product of accounting academia. Instruction may include formal lectures, tutorials, on-line courses, review sessions, and less formal instructional modes.

**Faculty.** Faculty are the knowledge-workers in accounting academia who deliver instruction to the students, design instructional materials, and, in general, provide the means for students to learn. They also provide students with feedback on progress and collect feedback from the students in order to improve their instructional materials.

## Interactions among the Major Elements

The interactions among the major elements of accounting academia (shown as green ellipses in Figure 1) are the processes whereby knowledge and information are passed.

**Knowledge.** Knowledge, the instruction-faculty interaction, is what passes, presumably, from the faculty to the instructional process. The faculty build into their instructional modes, the knowledge that should be passed on to the students.

**Learning.** Learning is the student-instruction interaction process. It is, in fact, the reason instruction exists. Learning is the process through which the knowledge of the faculty is actually passed from the instruction and on to the student.

**Feedback.** Feedback is the process of communication between faculty and students, the faculty-student interaction. This is a bi-directional process. Students require feedback on how they are doing, whether they are making sufficient progress, what information is most important, and other questions. Faculty require feedback on how their students are progressing, and ways to improve student learning, etc.

## Accounting Academia and the World of Accounting

Accounting academia, despite *ivory tower* jokes to the contrary, does not exist in a vacuum. In fact, the whole existence of accounting academia hinges on the need for trained accountants in the broader world, the *real world*, of accounting. The three elements of accounting academia interface with accounting and the world along three general bi-directional dimensions (shown in Figure 1 with red ellipses).

**Recruitment.** Students are recruited out of the real world to study in accounting programs. More significantly perhaps, accounting graduates are recruited out of accounting academia into the real world of accounting. Internships often serve as a launching ground for this recruitment. This is the student-accounting/world dimension.

**Outreach.** The instruction-accounting/world dimension describes the interface between the world of accounting and the academic element of instruction. Instruction is provided outside of the academic boundaries to the accounting world through distance learning, continuing professional education and workshops. Accounting and the world have input into instruction through the provision of support materials, speakers, software, and other goods of the *real world* that can greatly enhance the nature of instruction. Many universities rely on focus groups of professionals to help improve curricula. In addition, faculty are expected to be active in professional organizations and to perform some consulting to keep in touch with the real world.

**Research.** The faculty-accounting/world dimension represents the interface between the intellectual and scientific pursuits of faculty and their meaning in the real world. Research and publication is one way faculty add to the pool of accounting knowledge available to the accounting world. In addition, the world of accounting provides the data, subjects, topics and fields of study for faculty research.

## Model Summary

This descriptive model of accounting academia, as described in the three-dimensional pyramidal Figure 1, provides a general basis for understanding the elements, interactions and dimensions of accounting academia. Note that the role of technology, the internet, and the web are not separate elements in the model. The objective of the next section is to describe the potential impacts of such technology-driven developments on the elements, interactions and dimensions of accounting academia.

## Web Impacts on Accounting Academia

How the web impacts accounting academia has yet to be determined. We are only just beginning to feel the effects of this technological advance on how we teach, research, learn, etc.

## Major Elements

The operative question concerning the web and the three major elements of accounting academia is

*What is (will be) different about* [students, instruction, faculty] *because of the influence of the web?*

**Students.** As the web evolves and becomes more widespread, the characteristics of incoming university students are likely to evolve also. These students are much more likely than previously to own and use their own personal computers. They are also likely to be smarter users of technology than previous students.

Few, if any of these students will be unfamiliar with electronic communication. This comfort with electronic communication indicates these students are likely to demand quicker responses from faculty to their questions.

Because these students are likely to have already experienced some kind of on-line interactive learning, they will be more comfortable with non-traditional learning methods and modes. Conversely, they are likely to be less comfortable with and tolerant of the traditional lecture mode of learning and instruction.

**Instruction.** The web opens a whole new world of capabilities for instructional delivery. Of course, the web can be used simply as an electronic replacement for traditional instructional materials and processes, including syllabi, handouts, and student assignments.

In addition, the web provides access to a wide range of information that previously was difficult to access or simply not available. Faculty can provide links to this information or have students search for it. Emerging issues can be addressed in a timely manner and information provided to students like never before. For example, the rapidly evolving issues surrounding the year 2000 issues can only be properly researched on the web, as new information emerges on a daily basis. Without the web, faculty could never provide such timely information as Carol Brown's Y2K web pages (http://www.bus.orst.edu/faculty/ BROWNC/Year2000/Year2000.htm).

A professor can dynamically change the content of a course as needed to update or correct or extend previous information within seconds. The web also facilitates the sharing of teaching materials and the joint development of teaching materials by professors at distant institutions.

**Faculty.** The web will impact faculty in ways somewhat similar to how it impacts students. The big difference is that, like most technological developments, the students learn of it as a matter of course as they grow up prior to attending university. Faculty, on the contrary, have to actively seek to learn about the new developments and teach themselves that these new things are going to be part of the fabric of their activities. Faculty not only have to learn to navigate the web, but must also learn in a concentrated manner and short time frame, how to use the web to enhance their knowledge, research, and interaction with students. Without the web, faculty are limited in the amount they can learn quickly, especially on technology topics.

## Interactions among the Major Elements

How will the web impact knowledge, learning, and feedback?

**Knowledge.** The web will not only allow cutting edge research be more easily communicated to students than in the past, but the nature of the knowledge that faculty should develop and pass on to their students will also be altered by the web. For example, accounting students need to be more knowledgeable about new technology intensive assurance services such as the AICPA's WebTrust and SysTrust initiatives. More understanding of technology and security are needed than ever before, especially in the realm of on-line auditing and the movement toward real-time financial reporting [Kogan et al. 1998; Schneider and Bowen 1997]. The good news is much more information is accessible via the web than prior to the development of the web. The bad news is the body of knowledge accountants' may need is growing in both depth and scope [Sangster and Lymer, 1988].

**Learning.** The learning process is already being altered by the web. The web provides information acquisition methods that did not previously exist. In the learning process, students will begin to rely on faculty less as the *mouthpiece of knowledge* and more as *facilitators of life-long learning*. With the web, students are much more likely to have direct access to authoritative literature such as SEC pronouncements and AICPA white papers, etc. This makes yet another connection between student learning and the profession. A much more direction connection than previously.

In addition, some level of information emancipation is growing in that students and faculty can deliver themselves from the chains of the linear textbook learning to more interactive and non-linear methods of traversing information and bodies of knowledge. On-line textbooks (terms used loosely) such as the Financial Analyst Electronic Book [1997] are not bound by the limitations of linear, page by page, reading that is normal in old-style texts. These can be interactive and learner driven. Students may more easily pursue topics they find interesting through links provided by the professor or through searches.

**Feedback.** The web is already affecting how faculty and students communicate. Students find quick email response a much better substitute for the traditional limited office hours. The web also allows for changes in fundamental assignments of the past. For example, a term paper which formerly was only seen by the professor, can now be developed as a webpage and critiqued by other students. An analysis project and be designed as a website, instead of a paper-based report, and can benefit other students, as well as the authors.

Feedback to professors from students is also easier. Faculty can use on-line forms to get quick feedback on projects, exams or problems. Even a mid-semester course evaluation can be done without giving up precious class time [http://www.webprofessor.org/6437/projects/6/form.html]. In addition, if a student asks a question which indicates that on-line materials are unclear, they can be updated immediately, preventing students using the material subsequently from having the same problems.

## Accounting Academia and the World of Accounting

How will the web impact recruitment, outreach, and research?

**Recruitment.** From a university recruitment standpoint, the web is radically changing how universities attract and admit students. Over 50% of university-bound students in the U.S. prefer to apply to their chosen university either on-line or by sending a floppy disk. A majority of university-bound students are using the web to check out prospective universities. Universities that do not move into the web-centric world of technology will lose students to those universities that do [Kornblum 1997]. In the competitive world of recruiting the best students, universities must be proactive and creative in what information and functions they offer over the Web. The University of Tennessee, for example, publishes the results of student evaluations of courses and instructors on the Web as *Tennesee 101* [University of Tennessee 1998].

The web is already changing the way companies and firms find and hire new employees [Miles 1997]. All large accounting firms, and many smaller ones, have online recruiting sections included in their websites. In addition, corporations and government agencies include similar information on their websites. Some companies even accept applications and resumes electronically. Recruitment and job search firms are a mainstay of the web and most have accounting areas in their websites, e.g.The JobBank [Jobs on the Web 1998].

**Outreach.** The academic community has a history of providing both workshops and continuing professional education seminars to the profession. The web simply provides yet another means for providing this service that can be more convenient than before. The web provides opportunities for distance learning education that are easier to implement than previously.

The web makes providing information to practitioners much easier than before, including resource lists, tutorials on new topics, etc. Many accounting educators find that practitioners frequent their websites. The web also allows much closer communication from the accounting firms and companies, such that real world information can be more intimately intertwined with course materials than ever before.

**Research.** The development of research and collaboration efforts via the web provide ease for gathering comments on works in progress, identifying like minded colleagues, and broader circulation of research results. The nature of collaboration becomes affected because of the irrelevancy of time and distance on the web, the ease of sharing of manuscript and other files (beyond just text), and multi-party conferencing and brainstorming .The web also impacts the dissemination of research through on-line working paper series (e.g. University of Western Australia's Research Centre in Accounting and Finance) on-line journals (e.g. Journal of Financial Information Systems), and web-based more traditional indexes of research outlets.

The web also facilitates the discovery previously unpublished material or previously unknown material, identification of new perspectives on existing issues from the work of someone in another part of the world, or someone working on similar themes in another discipline [Lymer et al. 1997].. While these were possible before, they become much more likely occurrences with the use of the web. Of course, academicians must now determine how to properly cite electronic sources of information [Internet Public Library 1998].

## Impacts Summary

Although the exact nature and magnitude of the impacts of the web on accounting academia remain to be seen, some obvious trends and results can be predicted. In fact, some impacts have already begun to arise. Impacts can be expected on all nine areas identified in the descriptive model of accounting academia. This model can be used to facilitate study and description of web impacts.

## Conclusion

Clearly, the web is having and will continue to have major implications for accounting academia. While the nature of some of those impacts is yet to be identified, a general description of likely effects of the web on accounting academia has been provided here.

In this paper two distinct objectives were accomplished. First, a general model of accounting academia, was described, including
- the three major elements of accounting academia: students, instruction and faculty
- the fundamental relationships between and among these three major elements of accounting academia: knowledge, learning, and feedback
- the relationships of these three elements with the greater accounting world: recruitment, outreach, and research

Second, the current and potential the implications of the web on these nine concepts (students, instruction and faculty; knowledge, learning, and feedback; and recruitment, outreach, and research) were addressed.

## Limitations

The general model shown here is used for descriptive purposes only. It has not yet been experimentally examined. No assertions are made regarding the relative importance or size of impact of the web on the various parts of accounting academia. Further research is needed to identify these particulars.

Many other issue arise due to the influence of the web on academia which are not included explicitly in this general model. Legal issues, for example, are by no means of small importance. While this model does not view legal issues as a central element of accounting academia, academicians must be aware of their existence and import.

## Future Research

This is just a first start on recognizing the potential, both positive and negative, of the web's impact on accounting academia. Future research now underway attempts to measure the current impacts of the web on accounting academia and to predict the future impacts of the web on accounting academia. This model can also be applied, with appropriate alterations, to other areas of academe.

*References*

Internet Public Library [1998]. Citing electronic resources [http://www.ipl.org/ref/QUE/FARQ/netciteFARQ.html].

Financial Analyst Electronic Book [1997]. McGraw-Hill [http://www.sxst.it/mth_faeb.htm].

Jobs on the Web [1998]. The JobBank - Find Your Next Job! [http://www.jobsontheweb.com/homepage.html].

Kogan, A., F. Sudit and M. Vasarhelyi [1998]. Some audit implications of internet technology [http://www.rutgers.edu/Accounting/raw/miklos/tcon3.htm

Kornblum, J. [1997]. Students look for colleges on net. CNET NEWS.COM (May 7, 1997, 12:45 p.m. PT) [http://www.news.com/News/Item/0,4,10449,00.html].

Lymer, A., A. Sangster and A. Baldwin [1997]. Using the world wide web in accounting research: A huge step forward or a new constraint? *British Accounting Review* **29**, 395-407.

Miles, S. [1997]. Recruiting firms turn to the Net . CNET NEWS.COM (December 8, 1997, 12:35 p.m. PT) [http://www.news.com/News/Item/0,4,17108,00.html].

Sangster, A. and A. Lymer [1988]. Internet technology and accounting education: A new era? European Accounting Association Congress, Antwerp, Belgium, April.

Schneider, G. and P. Bowen [1997]. User-Customized Financial Reporting: The Potential of Database Accounting & the Internet. Proceedings of the Pacific Asia Conference on Information Systems (Brisbane, Queensland, Australia) 91-97.

University of Tennesee [1998]. *Tennessee 101*. http://www.it.utk.edu/~tenn101. [5 March 1998]