Extending Theory to Practice in Information Systems Education

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The area of Computer Networks has become a mainstream component of most Information Systems (IS) curricula. IS graduates can no longer treat the network as a black box and as someone else's (typically the Computer Engineer / Network Administrator's) responsibility. Network design and implementation is an integral part of the systems development process and therefore IS students must be quite in the area of conceptual and physical network design and implementation.

In addition to this essential background knowledge requirement, industry reports say that many IS graduates will be involved actively in the network development process, and some will become network engineers and network administrators. While a textbook coverage of current network topics is necessary, it is no longer sufficient. It is time for IS departments to emulate some of the hardware and systems software oriented labs that have been created by some Computer Sciences and Computer/Electrical Engineering Departments. While a strong conceptual understanding is a firm pre-requisite to hands-on lab work, the lab work will enhance and enrich that understanding.

This tutorial presents a series of hands-on network lab exercises that supplement a Business IS Computer Networking class. The exercises start with fundamental connectivity of computers and peripherals leading to the creation of a small intranet and connecting it to the Internet. The tutorial contains concrete objectives and outcome measures of each exercise, as well as detailed instructions on completing the exercises.

Early assessments of the use of this tutorial in a hands-on networking lab, confirm that the IS student who completes the IS Networking class with industry-level knowledge of how to conceptually design and physically implement a computer network.