INTEGRATING COMMUNICATIONS SKILLS INTO AN INFORMATION SYSTEMS CORE COURSE

Dr. Jay Liebowitz, Johns Hopkins University, jliebow1@jhu.edu

ABSTRACT

A great need exists in IT curricula for developing new courses that integrate oral and written communications with IT-related topics. Employer surveys still indicate that a major weakness in the IT graduates is the ability to write and speak well. At Johns Hopkins University, we have created a new course to address this concern. The paper will highlight the course and will show how "integration" can be an effective way of combining oral and written communications with IT areas.

Keywords: IS education, IS curricula, technical writing and speaking, communications

INTRODUCTION

In the School of Professional Studies in Business and Education at Johns Hopkins University, one of its premier programs is the Master of Science in Information & Telecommunication Systems (MS-ITS) for Business. The MS-ITS has graduated over 1200 masters students, and it currently has over 700 students enrolled. The degree has 11 courses (assuming the student has met the prerequisites), and the last course taken in the program is called the IT Capstone Strategy course. This course involves working as a team with an organizational sponsor, faculty technical advisor, and the overall course instructor. We have worked with about 250 organizations over the past ten years, and the projects serve as "mini-theses" for the students.

In recent years, we have noticed that the quality of writing and presentation skills has dropped somewhat as observed in the capstone course. In order to correct this deficiency, the IT faculty has been very diligent by including various speaking and written assignments interwoven throughout all the courses. This has helped to reinforce the concepts that are now being introduced into a newly designed course titled "Technical Oral and Written Communications Skills for IT Professionals". This course is a required core course that the MS-ITS students must first take as they begin their IT program.

We feel that this course is quite unique in an IT program as it integrates communications skills with IT-related areas. Granted, the IT students look quite puzzled as to why they are learning this material in an IT curriculum. However, as they take the course, they start to "see the light" and believe that this course may be the most useful course that they can apply upon graduation.

This course focuses on managing the IT enterprise in a modern organization, with particular focus on effective communication. A significant objective of the course is for students to learn and gain experience in effective consulting skills and written/oral communication relevant to IT management topics, such as developing proposals, preparing technical papers, delivering technical and management presentations, conducting product and system evaluations, and

providing IT consulting support to an organization. Topics also include effective and ethical methods of research and analysis.

The focus of this paper is to explain how the course is designed and show sample projects in order for others to possibly emulate as part of their IT programs.

Format and Content of the Course

The course is offered over seven weeks, meeting 3.5 hours per class session. In the first class session, an English final exam is given to baseline how well the students apply their grammar. Most of the students think they are "above" this type of exam, but it usually turns out that only 25 percent get in the A range, 40 percent in the B range, and 35 percent in the C range. This exam (which is a freshman English exam) shows that almost everyone can stand to improve in his/her writing. This approach helps to convince the students that this course could be valuable to them—it greatly helps to eliminate the skeptics. In the beginning of every class session, we have some "ice breakers" that may include the "top ten common errors in English," "some typical difficulties in writing", "common speaking mistakes (e.g., irregardless versus regardless), and other type of warm-up drills. Every class is based on active learning, whereby the students work in teams, give presentations, provide critiques of each other's work, and present their projects. Additionally, every project and exercise has an IT focus to it. For example, one project was to have the students read a recent article about "knowledge sharing in virtual learning communities" which appeared in a leading IS conference proceedings. The students were given a sample "journal reviewer's form" and they had to write a critique of the article, following the reviewer's form, to indicate whether the article should be accepted "as is" in an IS journal, rejected, or revised. The students handed their critiques to their neighbors, and then the neighbors "critiqued the critique" and had a dialogue with each other to explain their thinking and comments. Then, the professor asked how many people would accept the paper as is, reject it, or ask the authors to revise it. One person typically says to "accept the paper as is", so then that individual comes to the front of the class and role-plays as the author of the paper and is asked to defend his/her work as questions from the audience are posed to the author.

Examples of other projects, exercises, and tests in the class are shown below. For each one, there is an integrative theme of coupling communications and IT.

Project #1: Developing Functional Requirements

Your CIO has just briefed you on an idea for a new product that the company wants to manufacture. The product is an automated movie selector that would be available on the web and in computer kiosks in stores like Blockbusters, Best Buy, and other stores that carry videos/CDs/DVDs. The idea would be to have a software program that would ask you a series of questions to help you select which movie would best interest you for rent/purchase on that given day. It would also feed into an inventory system to check the availability of the selected movies, so the consumer doesn't have to constantly peruse the stacks to see if the movies are there. There would be interactive multimedia built into the program to show you excerpts from selected movies, hear what others thought about the movie (similar to an Amazon.com rating/preference

scale), and other types of functionality. This program would be available in computer kiosks and via the web.

Your CIO has asked you to develop a sound first cut of functional requirements for such a product.   You have been asked to provide the functional requirements document for this product and submit it to the CIO by next week. The CIO has also asked you to be prepared to give a Powerpoint presentation of your findings next week

Project 2
Moot Court Competition

Divide into 3 groups. Your task is to prepare oral arguments for both the affirmative (pro) and the negative (con) sides on the resolution, "Are qualitative research methods 'better' to use for IS research than quantitative methods?" Of course, you will need to define "better" as part of your analysis. You will be required to perform outside research to provide evidence to support your reasoning.

The moot court competition will proceed as follows:
1.   Each group must be prepared to argue each side (pro and con) for 30 minutes. Each member of the group must speak, and the group should provide a coordinated approach. We will draw straws to see which group will argue the pro side, which group the con side, and which group will be the judges.
2.   The pro (affirmative) side will present first for 30 minutes, with the judges asking questions afterwards for 15 minutes. Then, the negative side can ask 1 question.
3.   The con (negative side) will then present for 30 minutes, with the judges questioning the group for 15 minutes afterwards. Then, the affirmative side can ask 1 question.
4.   The judges will then go into deliberation for 20 minutes to decide who should win and why, and present their reasoning and verdict for 20 minutes. Both groups (affirmative and negative) can then ask questions to the judges for 15 minutes each.
The groups can then appeal to the Supreme Court Judge (Judge Liebowitz) who will then offer his insights.

Project 3
Writing a Proposal to Respond to a Request for Proposals

Johns Hopkins University is considering expanding its entrepreneurial spirit and is soliciting proposals from the Hopkins student community to develop a Masters degree program in some innovative, multidisciplinary field that will cut across several of the Hopkins Schools. The field must have a technology component. The proposal should consist of the following:
1. Title and Proposer
2. Executive Summary
3. Proposed Degree and Field
4. Background (describing this field)
5. Demand/Supply Market Analysis for this degree/field (including competitor analysis)

6. Expected student enrollment over the next 5 years for this new degree, and resources (faculty, labs, etc.) needed over the next 5 years for this new degree
7. Listing of courses (plan on 10 graduate courses [30 credits] for this new degree) with course descriptions/titles
8. Marketing Plan
9. Cost/Profit Estimates over the next 5 years for this new degree
10. References and Appendices

Written proposals are due by 5:30 pm on October 1, 2003, and must be delivered to Dr. Jay Liebowitz. **You must work in teams of 2.** You are also required to give a 15 minute Powerpoint presentation on your proposal to the class on March 4 (there will be a 5 minute question and answer session following your presentation

Exam

Assume that your CIO has asked you to teach a one-day workshop to her IS staff about how the CIO and IS staff can improve their presentation and writing skills as related to IT projects. Specifically, they are interested in knowing about the "best practices" for oral and written communications as related to their work. To prepare for this workshop, the CIO has asked you to write an essay that discusses this topic. Your essay will appear in the company newsletter, so be certain that the essay "practices what you preach"! Enjoy!

Persuasive Speech Exercise

Plan and present a three- to five-minute persuasive speech on a topic of personal interest relating to selling your favorite computer software product. You should consider the following:
- what goal are you trying to achieve
- what values, attitudes, and beliefs might you encounter in your audience
- what attitudes and beliefs are you trying to alter
- what action or non-action do you want your audience to take
- what type of reasoning will you use
- what other appeals might you use
- how will you convince the audience you know what you are talking about
- how will you begin and end your speech with strong arguments.

The course covers the following topics:

Week 1: Writing functional requirements; developing a software specifications document
Week 2: Writing a technical review; Communicating through oral presentations; Critical analysis; Giving presentations on Project 1 (Functional requirements)
Week 3: Critiquing each other's technical review; Information systems research methods (qualitative and quantitative)

Week 4: Moot court presentations (Project 2) on "Qualitative versus Quantitative IS Research Methods"; Rules for applying COTS (Commercial Off-The-Shelf) products; Writing product/system evaluations
Week 5: IT Management Consulting Skills; Proposal Writing; Persuasive speaking; Giving an "elevator speech"
Week 6: Presentations on Project 3 (Proposal); Prepare for the Final Exam
Week 7: Final Exam

Unfortunately, there really aren't any perfect books to use in this course because they don't focus on integrating oral and written communications with IT subjects. We have used a variety of books for the course (1,2,3,5). Liebowitz and Agresti (4) have recently signed to write a book that integrates the communications skills with IT topics, to be published by Prentice Hall.

INTEGRATION: THE KEYSTONE OF LEARNING

Integration is a critical part of the learning process. Already, universities have established programs to emphasize the "integrated" learning process, such as the College of Integrated Science and Technology at James Madison University (where there are close to 1000 ISAT (Integrated Science and Technology) undergraduate students), Marshall University's Integrated Science and Technology Program, F.W. Olin Engineering School next to Babson University (so that engineering and business programs can be integrated), and other integrated programs elsewhere.

For example, the College of Integrated Science and Technology at James Madison University (www.cisat.jmu.edu) has the following description:

"The mission of the College of Integrated Science and Technology is to prepare men and women to recognize and understand scientific and technical developments, and to apply them creatively to the issues facing contemporary society. The academic programs of the College emphasize the development of students in three principal areas: Problem-solving, Communication, and Sensitivity to Context…Consequently, the focus of the College is to:
• 	Invert the learning progression of traditional science and technology by moving context and applications to early courses.
• 	Integrate issues of global commerce, government studies, and business through instructional modules developed by faculty of many disciplines.
• 	Define new Bachelor of Science and Master of Science Degrees that integrate the areas of science, engineering, computer science, knowledge-based studies, management, analytic methods, and liberal studies.
• 	Identify the importance of science and technology in the context of social needs and issues throughout the curriculum."

Over the recent years, various information systems, management information systems, and computer science related professional societies and accreditation bodies have established criteria for accrediting information systems programs. An increased focus needs to be given to integrating oral and written communications skills with information systems knowledge.

SUMMARY

As IT programs further evolve over the years, the hope is that the IT graduates will be well versed not only in their technical knowledge but also in the ways that they communicate their knowledge. The newly designed course discussed above might be used as a model in which to integrate communications skills into IT topics. We hope that this will stimulate ideas for others to follow and will further refine this integrated approach.

REFERENCES

1. Gurak, L. (2000), Oral Presentations for Technical Communication, Allyn & Bacon.
2. Kramer, M. (2001), Business Communication in Context, Prentice Hall.
3. Laan, K. and C. Julian (2001), The Complete Idiot's Guide to Technical Writing, Alpha Books.
4. Liebowitz, J. and W. Agresti (in preparation), Communications for Information Technology Professionals: An Integrative Approach, Prentice Hall.
5. Margerison, C. (2001), Managerial Consulting Skills: A Practical Guide, 2nd edition, Gower.