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In this issue:

## Emphasizing Communication Skills in the Curriculum for the Computer Information Systems Grad

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**Abstract:** Attaining outstanding communication skills at the time of graduation can give the College graduate an edge up in the competition for employment. Computer and Information System students must be able to communicate effectively with their peers, supervisors, users and technical personnel. This paper describes the communications intensive program at a private university. It also details what various Computer and Information Systems faculty are doing in their courses to promote the mastering of skills in the communications area. This allows the students to communicate their specialized knowledge and collaborate with others to support the mission of the organization or business at which they are employed.

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# Emphasizing Communication Skills in the Curriculum for the Computer Information Systems Grad

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## Abstract

Attaining outstanding communication skills at the time of graduation can give the College graduate an edge up in the competition for employment. Computer and Information System students must be able to communicate effectively with their peers, supervisors, users and technical personnel. This paper describes the communications intensive program at a private university. It also details what various Computer and Information Systems faculty are doing in their courses to promote the mastering of skills in the communications area. This allows the students to communicate their specialized knowledge and collaborate with others to support the mission of the organization or business at which they are employed.

**Keywords:** Communication Skills, Technical communication, CIS student communication skills

## 1. INTRODUCTION

All students should graduate from an institution of higher education institution with a mastery of communication skills such as speaking, writing, reading and comprehension. In fact, employers are increasing demanding this of the graduate (Gruba, Al-Mahmood 2004). Many say that such skills can be essential to a student's future success (Zachry, Cook, Faber, Clark 2001). But can an Information Systems professional be successful without good communication skills? In their research, Verbick and Tood state "While a solid technological base is desirable when hiring a computer lab consul-

tant, communication and interpersonal skills are far more crucial than programming expertise" (Verbick, Todd 2003). Although it may depend on the type of work being performed, often poor communication skills will cause major problems with the success of that work. For example, suppose a database designer is creating a database for a surgeon. It is very important that the designer communicate with the Physician in a way that he will understand exactly what data has to be stored and the relationships among the data. The Doctor does not understand the design process of a relational database and it is up to the database designer to ask the right questions and listen

carefully to the Physician in order for the design to be correct.

"Current demands for graduates of Information Technology (IT) programs require that they possess deep technical skills, multidisciplinary awareness, and the ability to deliver the value of technical skills to customers and clients" (Peterson, Morneau, Saad 2003). It is no longer enough for the student to graduate with just the technical skills. One must be able to communicate the knowledge to others.

## 2. COMMUNICATIONS SKILLS PROGRAM

Many people with talent, intelligence and ability don't achieve as well as expected. In many cases, lack of the right communications skills prevents others from realizing their value (Dest 2002).

At a private University in Pittsburgh, communication skills are seen as an essential part of the student's educational experience. In fact, as part of the core, all University students are required to take four, three credit courses offered by the Communications Department. They also take another four, three credit courses from their own major, that are defined as communications intensive. All courses are semester long course work.

Because good communications skills is a concern during every semester and in every major, the students must be given the time necessary to develop proficiency in reading and interpreting, writing, speaking, listening, making presentations using appropriate software, developing skills in cross cultural and multicultural group dynamics, and applying rhetorical skills to each (Geisler, Bazerman, Doheny-Farina, Gurak, Haas, Johnson-Eilola, Kaufer, Lundsford, Miller, Winsor, and Yates, 2001).

The Communications skills courses equip graduates for a competitive, multicultural, professional environment, and satisfy employer needs for employees prepared to meet the demands of a diverse and interconnected global economy (Harding, 2004).

The program builds a real world advantage for the graduate. The University believes it will move the graduates years ahead of their peers in terms of communications exper-

ience that will be most valuable to them on the job and in graduate studies.

The Communications Skills Program (CSP) is a sequence of nine courses running through all four years of the student's instruction. Students are normally required to take eight of them: four in the University Core and four communications-intensive courses in their major field or closely related area of study. Students take a series of courses in which they explore different elements of effective communications, learn what works, and integrate them into their chosen field of work.

Short descriptions of the required University Core courses from the Communications Department are as follows:

- **COSK1221 (Argument and Research)** introduces students to academic reading, persuasive writing and the process of research. The Argument and Research course focuses on a rhetorical understanding of persuasive discourse. The Toulmin model of argumentation and the rhetorical "triangle" of ethos, pathos, and logos serve as conceptual underpinnings of the course.
- **COSK2220 (Public Speaking and Persuasion)** acknowledges the unity of the communications process of reading, listening, speaking, and writing. This course employs an integrated approach to communications in class discussion and assignments, with an emphasis on oral discourse and listening strategies.
- **COSK2221 (Intercultural Communications)** reintroduces the integrated nature of the communications skills program and underscores the importance of communications for a successful life and career. While introducing small group process, COSK2221 extends the study and practice of communications skills into multicultural and global contexts. Focusing on the complexity and diversity of group activity in the contemporary workplace, this course provides an understanding of and strategies for coping with groups comprised of persons having different ethnic, gender, racial, religious, organizational, and professional backgrounds and perspectives. Attention is given to multicultural and ethical awareness, leadership styles, small group processes, and problem-solving methods.

- **COSK2230 (Business and Professional Communications)** assesses the degree to which students have succeeded in achieving the goals of the lower-division communications skills program. By reviewing and synthesizing the topics and skills covered in the previous four courses, by providing continued practice in all the communications skills, and by introducing the different communication practices of various disciplines and careers, COSK2230 emphasizes the integrated nature of the communications skills program and the importance of communications skills for a successful life and career.

The content of these courses is very extensive and should do well to provide the student with a strong communications background. The students usually take these courses in the numerical sequence as stated above. The communications requirements at the University also extends to four other courses in the student's major that are presented in a communications intensive manner. Any course can be designated as a communications intensive course and will still be worth the same amount of credits. Adding the additional communication skills assignments to the course does not increase the number of credits. Not all CIS courses are offered in this format, but if the faculty member wishes to have his course designated as such a course, he must then meet the course requirements which are outlined through the Communications Department. A faculty member's course load will not change if he is teaching such a course and the limit on the number of students taking the course does not change. A prescription of what must be done in any course to have it designated as communications intensive has been developed and the goals are as follows:

- A communications-intensive course includes specific communications skills outcomes in disciplinary contexts that require students to practice the CSP "strands" of reading, writing, listening, and presenting, as well as using appropriate technology. Some outcomes should also be for information literacy.

The guidelines for the assignments are:

- Students must be given informal, ungraded assignments that allow them to use language to learn communications

skills and course content, often in preparation for more formal, graded assignments where students are evaluated on their mastery of these skills.

- All assignments should pay particular attention to audience, including some instruction in audience analysis, such as text references and class discussions.
- All assignments should also meet the other requirements of good instructional objectives, including attention to the exact behavior that students are asked to perform, the conditions under which they will perform, and the degree of proficiency their performances must meet to be rated as satisfactory and excellent.
- All assignments should be, where appropriate, authentic tasks which students might encounter on the job as new hires.
- Each student should include some of the assignments in a portfolio that will meet departmental and CSP guidelines and that other teachers and prospective employers may want to see.

Every department on campus offers various classes in this mode, including the CIS department. For example, there could be two sections of a Database Management course offered, with only one being designated as communications intensive. The instructor of that course would have to meet the guidelines of the Communications Department in designing the types of assignments, as defined above.

There are 27 required and 12 elective CIS courses in the degree program. The number of communications skills intensive courses varies each semester. There is no set number of these courses in either the required or the elective set of courses. There are a sufficient number of these courses offered all during the students' academic career that allow them to reach the required number of four communications intensive courses. Therefore, there may be some courses that are never offered in the communications intensive format.

A faculty member wishing to offer his course in this format may look to the Communications department for help. Many tools are in place to facilitate the successful teaching of such a course. Help is available in the areas of designing assignments, writing and admin-

nistering exams and grading. The communication skills program also provides help to the students in the form of individual tutoring and writing labs.

### **3. COMMUNICATION SKILLS PRACTICES AMONG ALL CIS INSTRUCTORS**

Although there are many courses offered in the communications intensive mode by the CIS department, many professors stress communications skills in all of their courses. In fact, when the Computer and Information Systems Department faculty were surveyed, 100% of the respondents stated that they construct communications type assignments and activities in courses that are not designated as communications intensive. Faculty agreed that it is essential in every course. Most feel that the days of the isolated nerdy computer tech are long gone. (Verbick, Todd, 2003). In most cases, the CIS student will face daily interaction with others when on the job (DEST 2002). Because of this, every CIS course, no matter what the topic, can contain elements that enhance and build the student's communications skills.

The CIS faculty were surveyed to gain their views on the importance of communication skills specifically in the CIS student. The CIS faculty overwhelmingly agree that all students should excel in the following tasks:

- Speak well in a large or small group
- Create and present a well organized power point presentation
- Write a formal research paper
- Write project documentation (pre/during/post)
- Write user manuals
- Write technical documentation
- Train and interact with users
- Work well in peer groups
- Read and comprehend reference manuals
- Read and comprehend industry articles/journals

Being that most all of the faculty feel that the above skills are necessary for the CIS grad, they are constructing many assign-

ments/activities in their classes that meet these requirements.

For example, in the Project Management course, one Instructor stated: "I have the students make at least three presentations in class. They range from 10 to 20 minutes long. Students also must submit 24 written assignments. 21 of these assignments are done individually and are 3-10 pages long.

The other three written assignments are done in teams, and these assignments focus upon the "Initiating" and "Planning" of an information systems project. Together, the three team assignments may end up being 40 to 60 pages long. As a class, the students also develop an electronic journal for the lecture materials, and it is shared by the students."

Another Instructor said: "In the course, Training and Development in Business, the students do various presentations. However, the final one has them teaching something (business subject or entertaining). They must do a lesson plan (with objectives, time frames, etc), use visual aids, have class participation, and test to see if their audience learned something. This usually is 15 to 20 minutes long, depending on the number of students. The assignment uses all the communication skills."

Still another Instructor said: "I typically have some sort of presentation in all of my classes. I usually have students work on group projects and then present their findings at the end." Table 1 in the Appendix is an example of a grading rubric that this particular Instructor uses for grading the student's presentation. It is clear by this rubric that communication skills are stressed, even in an Information Systems course.

There are many other interesting ways in which CIS faculty member are emphasizing the desired communication skills, even though the course may not be designated as communications intensive. Table 2 in the Appendix contains some of these examples.

### **4. CONCLUSION**

We are living in a global society and being able to communicate is a must. For a computer professional to succeed they must be able to compete on a higher level than just the technical skills. Being able to communicate in all areas of reading, writing and

speaking will give them an edge over others (Henning 2003). Every CIS course can contain assignments that reflect the goal of building and enhancing the communication abilities of the students. Good cooperation between the CIS department and the Communications department is also essential for the success of the communication skills program (Granger 2005). Any CIS course could be turned into one that has an emphasis on communication skills without sacrificing the technical content of the course (Pollock 2001). A CIS curriculum that prepares the student to communicate as well as attain the necessary technical skills, is one that should be highly valued.

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**APPENDIX**

	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>Total</b>
<b>Organization</b>	Audience cannot understand presentation because there is no sequence of information.	Audience has difficulty following presentation because student jumps around.	Student presents information in logical sequence which audience can follow.	Student presents information in logical, interesting sequence which audience can follow.	
<b>Subject Knowledge</b>	Student does not have grasp of information; student cannot answer questions about subject.	Student is uncomfortable with information and is able to answer only rudimentary questions.	Student is at ease with expected answers to all questions, but fails to elaborate.	Student demonstrates full knowledge (more than required) by answering all class questions with explanations and elaboration.	
<b>Visual Aids/ Handouts</b>	Student uses superfluous aids or no aids	Student occasionally uses aids that rarely support presentation.	Student's aids relate to presentation.	Student's aids explain and reinforce presentation.	
<b>Mechanics</b>	Student's presentation has four or more spelling errors and/or grammatical errors.	Presentation has three misspellings and/or grammatical errors.	Presentation has no more than two misspellings and/or grammatical errors.	Presentation has no misspellings or grammatical errors.	
<b>Eye Contact</b>	Student reads all of report with no eye contact.	Student occasionally uses eye contact, but still reads most of report.	Student maintains eye contact most of the time but frequently returns to notes.	Student maintains eye contact with audience, seldom returning to notes.	
<b>Elocution</b>	Student mumbles, incorrectly pronounces terms, and speaks too quietly for students in the back of class to hear.	Student's voice is low. Student incorrectly pronounces terms. Audience members have difficulty hearing presentation.	Student's voice is clear. Student pronounces most words correctly. Most audience members can hear presentation.	Student uses a clear voice and correct, precise pronunciation of terms so that all audience members can hear presentation.	
				<b>Total Points:</b>	

Table 1 - Sample Rubric for Student Presentations Grading

<b>Java Programming</b>	Required research paper on the origin of programming languages
<b>C++ Programming</b>	Writing of a detailed User's Guide along with a Programmer's Reference Manual for required programming project
<b>Database Management</b>	User Interviews to define database requirements, formal presentations of design specifications, meetings and interactions with actual users of the database that is being designed
<b>Web Design</b>	User interaction to define project specifications along with various presentations concerning the actual web site project
<b>Intro to Information Systems</b>	Presentations on various topics, Group projects, writing assignments dealing with Information System topics
<b>Systems Analysis</b>	Writing of many user specifications, group projects and presentations

Table 2 – Communications Assignments