

IF



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White Paper

**An Integrated Approach
for the Development of
Communication Skills**

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An Integrated Approach for The Development of Communication Skills

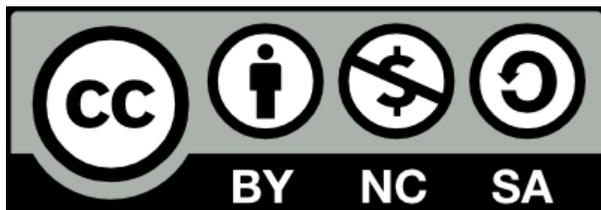
An IF White Paper

By Jack Byrd, Jr.

Edited by Suzanne Goodney Lea

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Introduction

What are the communication skills needed for this generation of students to succeed in a 21st Century world? How might students learn these skills in our colleges and universities? How can we integrate the development of these skills throughout diverse curricula of a modern university?

Employers routinely lament that college graduates arrive in the workplace lacking many key communication skills. A 2006 survey of 400 CEO's reveals that employers rate applied communication skills such as teamwork/collaboration, ethics and social responsibility, an ability to successfully engage diverse colleagues, self-direction, work ethic, oral communication, written communication, leadership, and critical thinking/problem solving skills as *very* important to success in the 21st Century workplace. These employers also observe that no more than 10% of four-year college graduates as having excellent abilities within this set of skills (The Conference Board, 2006). The Partnership for 21st Century Communication Skills (<http://www.21stcenturyskills.org/>) aspires to expand K-12 classrooms so as to better prepare students to read media in a critical way, to problem-solve, to work with others, and to relate cross-culturally in effective ways. The focus of these studies point out the need to rethink how we develop student's communication skills.

American colleges and universities have, however, generally relegated communication skills training to public speaking or composition courses. Some disciplines are beginning to realize that communication skills are so crucial to success that they need to be taught throughout the university general education and disciplinary curricula. At the 2008 American Controls Conference, controls engineers held a panel to discuss skills graduates need for success. Beyond technical acumen, critical thinking, intuition, teamwork, communication skills, and a multi-disciplinary perspective were identified as important to success after graduation (Blanchet and Shenoy, 2008). Business schools are finding that they are doing an ineffective job of developing their undergraduate students' communication skills. According to Stevens (2004), a survey of over one hundred Silicon Valley employers revealed that they were dissatisfied with business school graduates' abilities to express themselves orally, with a robust vocabulary and an avoidance of slang. Employers also noted that recent graduates lack sufficient writing skills and have difficulty using email in a professional manner.

This paper explores how higher education faculty could incorporate more communications skills development into the curriculum without adding more courses and without adding additional assignments to existing classes. Instead, we posit a developmental notion of communication skills and suggest a model for minor curricular revision. The approach outlined here asks faculty to teach these skills in a developmental fashion within existing courses. Instead of adding more responsibility to faculty, we propose adding more responsibility to students by teaching them to facilitate more of their own learning.

Changing Communication Needs

We live in a connected world. Communications technologies provide forms of access and information that shape what we do on the job, how we learn, how we relate to others, and how we develop insights. Our connected society also demands a higher expectation of collaboration than ever before. Such collaboration requires a new set of communication skills. Increasingly we collaborate within organizations and disciplines. And increasingly we value diversity of perspectives. We gain insight from these interactions and from learning how others think. These perspectives and insights come from interactions among people, whether face to face or, increasingly, through technology.

Throughout history changes in the forms of communication have transformed our culture. As communication technologies change, so does the culture of human interaction. Just as the advent of writing transformed the ancient world, and as the printing press transformed Renaissance Europe, the current proliferation of new electronic communication technologies is changing our culture of communication. For example, multi-media capacities have fostered more emphasis on visual communication. Images have become the international language, whether in the form of video coming from New Orleans after Katrina, the photos of atrocities in Darfur, the visual instructions that accompany a purchase from IKEA, or statistical information presented in the box at the bottom of the front page of **USA Today**. Similarly, new electronic media have enabled more interactive communication with a greater emphasis on collaborative development. This has also led to what might be called a remix culture, a culture of commentary based on commentary based on commentary, etc. We are also increasingly growing used to an “always on” communication culture of rapid-fire and ever-shorter communications, where we are almost constantly in contact with others. And the others with who we are now in contact may be around the corner or around the globe. How we communicate today is vastly different from how we communicated just ten years ago.

While the world is moving on to new forms of communication, higher education steadfastly has focused on writing as the focus of communications instruction. Not only have we maintained our focus on writing, we have stressed a writing approach that is disconnected from what graduates in virtually every academic discipline will experience in their careers. Consider the contrast between the writing focus that we support in our classes and the writing that our graduates will experience in their careers, as shown in Exhibit 1 on the next page.

Exhibit 1
Contrasts in Teaching of Writing and Practice

Writing characteristic	Typical classroom focus	What most graduates will encounter in their careers
Writing style	Eloquence, complex	Plain English
Content coverage	Complete, detailed	Concise, major points only
Message delivery	Nuanced	Highly specific or directive
Visual images in the document	Limited use	Extensive use
Reader visual aids	Limited use	Extensive use of charts, tables, bullet points
Sequential Order	Linear progression of thinking toward a conclusion	Conclusion comes first with key points to follow
Reference Materials	Archival, extensive citations	Observations, anecdotal
Purpose	Demonstrating knowledge or expertise	Creating a basis for action or understanding
Audience/needs	Full exposition of knowledge	Useful insights
Length	Bigger is generally better	Brevity is desired
Accessibility	Generally limited to those inside the academic field, often within a narrow specialty	Intended for a diverse audience with limited prior knowledge of the subject

The challenge we face in higher education is to broaden our responsibility for the development of our student's communication skills. Our focus on writing needs to shift to a broader focus on communication skills. When we do teach writing, we need to focus on the kind of writing that will be expected of our graduates in our current society. We need to be more aware of the changing culture of communication that is emerging as the means and technologies of communication change. The one-directional communication format of "the book," which has determined the classroom for centuries, is giving way to the multi-directional and interactive communication format of the web. Our teaching needs to be attuned to this change.

A Developmental Model of Communications Skills for a New Generation

It might be useful to think of the communications skills needed by this generation of students as being classified into three levels.

Level 1: (Basic Communications)	Those skills that are essential for everything that a person does in our society today. These skills are also fundamental for doing well in college.
Level 2: (Career-Directed Communications)	Those skills that are critical to virtually every career that a college graduate may pursue. These are skills that need to be developed either in the classroom, in practicum experiences, or via mentoring.
Level 3: (Leadership-Directed Communications)	Those skills that separate exceptional communicators from average communicators. These skills distinguish our most outstanding graduates from their peers.

Over time, the expectations for communications will change. What counts as a Level 3 communication skill today is likely to become a Level 2 communication skill sometime in the future. Likewise Level 2 skills will ultimately become Level 1 skills.

Some specific communication skills that would comprise each of these levels are listed in [Exhibit 2](#). When educators and college graduates look at this list of communication skills, typical responses tend to be:

- “These skills are really important.”
- “I learned a lot of these skills on my own.”
- “I wish I would have been better at these skills when I graduated from college.”

Exhibit 2
Three Levels of Communication Skills

Level 1

- The ability to develop written materials that provide the insights and action steps needed by others
- The ability to develop and make presentations in small group settings with confidence
- An understanding of when/ what/how in communicating important information to others
- The ability to communicate in meetings and in discussion with others
- The ability to speak and write using correct grammar
- The ability to master computer skills such as Word, Excel, PowerPoint, etc.
- The ability to listen and comprehend during a conversation
- The ability to communicate with oneself through personal reflection
- The ability to facilitate a discussion in a small group

Level 2

- The ability to present your idea to a wide variety of people with different levels of knowledge
- The ability to provide positive and corrective feedback to others
- The ability to talk with others and obtain important information
- The ability of, and commitment to, active listening
- The ability to participate in social conversation
- The ability to develop appropriate visual images in support of communications
- The ability to interpret and use appropriate non-verbal communications
- The ability to resolve conflict
- The ability to network
- The ability to interview for a job
- The ability to achieve consensus in difficult situations

Level 3

- The ability to interpret subtle messages from others
- The ability to respond to others in crisis situations
- The ability to communicate across cultures
- The ability to achieve consensus in difficult situations
- The ability to show genuine empathy
- The ability to excite others through a variety of communications
- The ability to communicate complex information in ways that others can fully comprehend
- The ability of, and a degree of comfort in, communicating with individuals in our diverse society in a one-on-one basis

Some Principles for Developing a New Generation of Communications Skills

As communications skills change, so too must the approaches we take to developing these skills. Despite recent trends in some programs toward teaching communication “across the curriculum,” the predominant tendency is to consolidate the teaching of communications skills in higher education to a handful of specific courses: typically first-year English or composition course, a senior capstone course, and maybe a public speaking course. The following principles of teaching communications offer a different approach.

Principle One – Communication skill development needs to be developmental across the curriculum

We can no longer rely upon just a few courses to develop the communications skills needed by our students. Proficiency in acquiring a skill requires hands-on reinforcement being integrated throughout a student’s learning experiences. Virtually every course needs to have a developmental or reinforcement responsibility for one or more of the communication skills. A developmental focus means accepting students at their existing level of proficiency and fostering the growth of those skills through guided practice and constructive feedback over time. These teaching responsibilities need to be planned and integrated throughout the curriculum.

Principle Two – Communication skill development needs to be competency based

For too long, we have used course grades and summary assessment as an indicator of students’ ability in communications. While a D is a poor but passing grade in our grading system, communications inadequacy (as reflected in D-level ability) will not be accepted by a graduate’s employer. We can no longer discharge our responsibility to students by simply giving them a summary grade. Skill acquisition requires more formative assessment opportunities that are geared toward providing constructive guidance toward the development of the skill. In the end, students will need to have competence an array of communication skills to be a contributor in their careers. Competency-based instruction is likely to require a higher level of concern for student development than we see in our classes today. To assure competence, colleges and universities will need to have a variety of options for students who do not have the skills they need when they come to college or who fail to demonstrate competence in the primary courses of instruction for particular communications skills.

Principle Three – Some communications skills can only be developed through experiential opportunities

Most educators would acknowledge that much of what they value as skills were learned outside of the classroom. Many of the communications skills listed in Exhibit 2 are best developed through experiences and subsequent self-reflection. Colleges and universities offer many opportunities for these experiences, but we rarely integrate these experiences into the academic curriculum. What is needed is a conscientious effort to incorporate out-of-class experiences into academic program requirements.

Experiences alone are not enough unless there is a self-reflective component for students that help them connect their experiential learning back to their classroom learning. Service learning offers a model of how this can happen, but internships can also provide opportunities for reflective application of course material. Too often, however, programs either do not ask students to reflect on their internships in an academically-grounded manner or, worse, do not even encourage students to seek out applied internships. Directed reading courses cannot substitute for a practical internship in developing communication skills.

Principle Four – Communications skills can be more effectively developed when classes become more interactive

We rarely think about the ways our modes of instruction actually shape students' development of communication skills. When we examine the way we use our time in class from the perspective of communication skills development, we might find that we can improve both the coverage of content in our classes *and* reinforce the acquisition of one or more communication skills. For example, the standard instructional approach of lecturing requires very limited communications skill development, while more interactive classes offer a wide variety of communications skills development opportunities. Instructors often choose to lecture in order to maximize the coverage of content. They often feel that telling equates to teaching, reasoning that, "if I do not tell students what I want them to know, then I cannot be sure they have learned it." But it has become increasingly clear that students learn best and retain more course content when they are more actively or interactively engaged with it (Schwartz et al. 2008). The old dichotomy of content coverage versus depth of learning may end up being a false one, since students involved in more interactive learning experiences can end up discovering what might otherwise have been told to them via lecture. Faculty can then add more substantive detail to the insights they derive through their own discussions.

Principle Five – Communication skills development requires a mix of instructional approaches including skill instruction, developmental practice, experiential learning, mentoring, and self-reflection

Communication skills development is a performance activity that needs to be developed as one would develop students in dance, theatre, or music. The validation of the skill is not through words on a test but through actual practice and performance of what is to be learned. In effect, all of our classrooms need to become studios for communication skills development.

Principle Six – Faculty need to display the same communications skills that we are teaching our students.

While we pride ourselves in our writing, faculty is often negligent in many of the other communications skills shown in Exhibit 2. As a result, we can become negative role models for students in many of the important communication skill areas.

An Integrated Model for Communication Skills Development

If you look at the list of communications skills in Exhibit 1, you might be wondering, “How could we integrate these communications skills into our current higher education curriculum?” The model outlined below suggests one way by which this integration of a new generation of communication skills could be achieved. It is not intended as a one-size fits-all approach. It is simply intended to generate some ideas about possible ways to structure a curriculum for communication skills development.

First Year

The key courses in the first year of higher education typically include:

(1) First-Year Seminar or Student-Centered Discussion Course I: Many colleges and universities have such a course, but the characteristics of the course being proposed here are somewhat different than the traditional course:

- The seminar is a student-centered discussion course, as described in the next section.
- Students learn how to be discussion facilitators and discussion participants.
- Students focus on a particular social issue throughout the course of the semester. The issue will be one where students can be expected to discover and develop contrasting points of view.
- Students do an oral presentation at the end of the semester to faculty from diverse disciplines.
- Students are evaluated on their contributions to discussions as well as their emerging facilitation skills.
- Students write reflective journals to develop the ability to assess their own contributions and take appropriate actions toward improvement.

(2) First-Year English or Composition: During the first year, students will also take a traditional composition and rhetoric course. The only difference from a traditional English course that is being proposed here is that the written work that is assigned should demonstrate a greater awareness of the kinds of writing skills that students will need outside of the academy. For example, students will need an understanding of the visual appeal of a document to a reader. This can be done by incorporating visual images into the written document and by utilizing approaches that draw the reader’s attention to key points.

(3) Computer Skills: Some students may also have to take a basic computer course should they be deficient in fundamental computer applications. The computer applications course should reinforce some of the concepts of communications presented in Exhibits 1 and 2.

Sophomore Year

The key courses in the sophomore year would include:

(1) Student-Centered Discussion Course II: During this year, at least one of the general education courses students take would be taught in a student-centered format. This course should reinforce and further develop the communications skills that students developed in the First-Year program.

(2) Career Development Course: Also included in this year of study would be a one credit-hour course that has a career focus. In this course, students would learn how to prepare a resume and a cover letter. They would also learn how to interview for a job or internship. Campus career fairs and other similar events could also be used as teaching laboratories for networking and social conversation skill development. While some academics may object to such a career-focused course being a part of the curriculum, this course could play a vital role in communication skill development.

Junior Year

The key courses in the junior year might include:

(1) Experiential Learning Opportunity: During this year, students would be asked to have one experiential learning opportunity where they demonstrate their communications skills in a real-world setting. Typical experiential opportunities would include:

- Service Learning
- Internships
- Mentoring of beginning students
- Campus leadership positions
- Work-study assignments
- Facilitating community dialogue and discussion events

This experiential learning project would be incorporated into a one credit-hour course. The focus of this course would be on the Level 3 communications skills of Exhibit 2. Some aspects of this course could include:

- An on-line format with instructional modules on each of the Level 3 skills listed in Exhibit 2
- Student assignments which involve documentation of experiences and self-reflection on these experiences.

(2) Student- Centered Discussion Course III: Also during this year, students would have another course that is taught using a student-centered discussion approach. Since this will be at least the third time that students have had such an experience, they should be demonstrating high levels of proficiency with many of the communications skills in Exhibit 2. At least one of the student-centered discussion courses should incorporate issues or concerns related to cultural diversity in a pluralistic society.

Senior Year

The key course in the senior year would be a—

Capstone Course: During this year, students will be taking a capstone course in their major. Since this course represents the “tying together” of their knowledge in their major, it should also be the course that provides an assessment of the student’s communication skills.

One approach for integrating communication skills into this course is to ask students to prepare a portfolio of their communication skills development. Each of the skills in Exhibit 2 could be evaluated using a self assessment with the following components:

- A short description of how a student believes each specific skill can be evaluated
- A description of a specific instance where the student demonstrated each specific skill
- The student’s own assessment of her/his skills in each of the skill areas
- A plan for continual improvement of these skills

The curriculum model suggested above should be loosely adaptable to any campus and program of study. The model minimizes the number of new courses that need to be taught. With modest restructuring, existing courses can either teach or reinforce these important communication skills. See Exhibit 3 to see how the skills outlined in Exhibit 2 could be mapped into this curriculum.

Since student-center discussions are critical to this integrated curriculum model, it would be useful to discuss what such an approach implies. Many faculty use some form of discussion in their classroom. Typically the teacher is at the center the discussion. The teacher asks students questions, and students respond. The teacher may direct one student's response to another student, but the teacher is essentially the one who is directing, or orchestrating, the discussion.

In student-centered discussion courses, the students themselves direct the discussion. One student serves as the facilitator of the discussion for a small group, and the discussion flows from student to student. The facilitator is not a "teacher" or "discussion leader." The facilitator is someone who helps the discussion move along in exploring and developing the thinking of the group. The role of the facilitator is to keep the group discussions open and productive, not to lead them in predetermined directions. Students are trained as facilitators. In the student-centered discussion approach, the instructor often plays the role of observer. The instructor makes notes throughout the discussion to be used in assessing student performance so as to provide students with direct, individual feedback and to be used as reference material for subsequent class lectures.

In the student-centered classroom, teams of roughly 5-8 students form a discussion group. Typically these discussion groups stay together for the entire semester. This helps the students to develop a comfort level with each other, which can help their acquisition of collaborative discussion skills. It is helpful if teachers assign discussion groups so as to balance out the distribution of students (in terms of class standing, gender, majors, etc.).

The atmosphere of the discussion in a student-centered classroom is described as a "sanctuary," a protected space for reflective interactions. Students feel free to express their thoughts without fear. The role of each student in a discussion group is to help other students develop their own ideas, to develop contrasting or novel ideas, and to develop the thinking of the group. Discussions are not debates, and intellectual showing off is discouraged. Discussions are a success when each student develops his/her own insights and when the group makes discoveries about the subject of the discussion that each individual may never have reached on his/her own.

Course content in the student-centered class can be integrated into the class in a variety of formats. In some cases, the teacher first presents the content, and the students then develop their own understanding of the content through the discussion. In other cases, the student-centered discussion sets the context for a later content presentation to be delivered by the teacher. The discussion groups become, in effect, a learning team that explores questions about the content area and develops its own thinking into possibilities.

The role of the teacher in the student-centered classroom is to be a mentor for students, in addition to the more traditional roles taken on by a teacher. The teacher gives the students feedback on their discussions and makes suggestions for

improvement. This is done in a face-to-face meeting with support from the observation notes made by the teacher.

Finally, the student-centered discussions have a discussion process they use. This means there is a structure to encourage the development of the discussion group's thinking over time (it is not as if each class is starting from scratch, undirected, or is unstructured like a free-flowing "bull session"). This process essentially moves through stages of exploring questions (including different perspectives, or different ways of framing the key questions), exploring possible responses to those questions, and exploring what some possible consequences of those responses might be. As students are trained to be discussion facilitators, they also learn how to become effective discussion participants. The student-centered classroom requires and reinforces a much higher level of social skill than is typically required in a university classroom.

The incorporation of the student-centered discussion process into the classroom has the potential of enhancing the level of communication skills presented in Exhibit 1. In effect the student-centered discussion classroom is the platform for integrating communications skills development across the curriculum.

Summary

Surveys of college and university graduates almost always point to communications as an area where students wish they had more development. We might feel like saying, "I told you so," but we must acknowledge that we often leave students to develop these skills on their own. What our graduates might be trying to tell us is that they wish we could have helped them develop a fuller range of communication skills to meet the changing culture of communication today. The curriculum model proposed here is an adaptable approach that could help address this wish.

Exhibit 3

Mapping of Communication Skills Across the Curriculum

Level 1 Skills	First-Year			Sophomore		Junior		Senior
	Seminar SCD-I*	English	Computer	SCD- II	Care er	Experience	SCD - III	Capstone
■ The ability to develop written materials that provide the insights and action steps needed by others.		x				x		
■ The ability to develop and make presentations in small group settings with confidence.	x			x		x	x	x
■ An understanding of when/what/how to communicate important information to others.					x	x		x
■ The ability to communicate in meetings and in discussion with others.	x					x		x
■ The ability to communicate in meetings and in discussion with others.		x						
■ The ability to speak and write, using correct grammar.			x					
■ The knowledge of basic computer skills such as Word, Excel, PowerPoint, etc.	x			x		x	x	x
■ The ability to listen and comprehend during a conversation.	x			x		x	x	x
■ The ability to communicate with one's self through personal reflection	x			x			x	
■ The ability to facilitate discussion sessions.						x		x
Level 2 Skills	x			x		x	x	x
■ The ability to present your idea to a wide variety of people with						x		x
■ The ability to provide positive and corrective feedback to others.	x			x		x		x

* SCD – Student-Centered Discussion Course

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■ The ability to talk with others and obtain important information.						x		x
■ The ability and the commitment to active listening		x	x					
■ The ability to participate in social conversation.	x			x		x	x	x
■ The ability to develop appropriate visual images in support of communications.	x			x		x	x	x
■ The ability to interpret and use appropriate non verbal communications.					x			
■ The ability to resolve conflict.					x			
■ The ability to network.	x			x		x	x	x
■ The ability to interview for a job						x		x
■ The ability to achieve consensus in difficult situations						x		x
Level 3 Skills				x		x	x	
■ The ability to interpret subtle messages from others.						x		
■ The ability to respond to others in crisis situations.				x		x	x	
■ The ability to communicate across cultures.						x		x
■ The ability to show genuine empathy						x		x
■ The ability to excite others through a variety of communications						x		x
■ The ability to communicate complex information in ways that others can fully grasp with is being said						x		x
■ The ability and a degree of comfort in communicating with individuals in our diverse society on a one-on-one basis.						x		x

* SCD – Student Center Discussion Course

- Blanchet, Keith and Rohit Shenoy, 2008. *What Skills Do Controls Engineering Graduate Need for Success?: A Panel Discussion from the 2008 American Control Conference*
http://www.quanser.com/NET/WebImages/NewsCast/Documents/Organization_7/ACC%20Panel%20Discussion%20_Oct29_Final_formatted.pdf (accessed on May 29, 2009).
- The Conference Board, 2006. *Are They Really Ready to Work? Employers' Perspectives on the Basic Knowledge and Applied Skills of New Entrants to the 21st Century U.S. Workforce*
http://www.21stcenturyskills.org/documents/FINAL_REPORT_PDF09-29-06.pdf (accessed on May 29, 2009).
- The Partnership for 21st Century Skills <http://www.21stcenturyskills.org/> (accessed on May 29, 2009).
- Schwartz, Marc S., Phillip Sadler, Gerhard Sonnert, Robert H. Tai, 2008. "Depth Versus Breadth: How Content Coverage in High School Science Courses Relates to Later Success in College Science Coursework." *Science Education*. December.
- Stevens, Betsy, 2004. *How Satisfied are Employers with Graduates' Business Communication Skills?: A Survey of Silicon Valley Employers*
<http://www.westga.edu/~bquest/2004/graduates.htm> (accessed May 29, 2009).

