

# Comparison of Communication Skills Needed by Information Systems Undergraduates and Graduates as Perceived by Information Systems Professionals

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## ABSTRACT

Throughout information systems research, it is common to find studies examining necessary computer skills needed for information systems positions. However, a trend has appeared in studies showing a decrease in the employers' desire for computer literacy skills and a greater emphasis on communications skills. This study involving 500 Association of Information Technology Professionals determined the top five communication skills needed by information systems undergraduates and graduates in each of three communication areas. The three areas researched were written, oral, and interpersonal communication skills. The top three ranked communication skills for undergraduate students were writing clear directions and instructions, giving clear directions and instructions orally, and listening effectively. The top three ranked communication skills for graduate students were writing analytical reports, directing a meeting, and listening effectively. These skills should be implemented into the undergraduate and graduate curricula of information systems programs.

**Keywords:** Information systems; communication skills; curriculum; employment needs

### 1. BACKGROUND

Previously, information systems was thought of more as a provider of goods, a provider of reports or data transactions; however, now it is looked at as a provider of services (Watson, Young, Miranda, Robichaux, Seerley, 1990). When the information systems (IS) graduates are working with the end-users, they are expected to be involved in training and consulting. Hence, the need for good communication skills in information systems employees.

Several studies focused on the communication skills needed by new employees. Jiang, Udeh, and Hayajneh (1994) found that business recruiters included three communication skills in the top thirteen employee skills most highly valued by employers. The three communication skills were oral, written and interpersonal skills. Oral communication was consistently identified by middle managers as the most important competency in evaluating entry level employees (Maes, Weldy, and Icenogle, 1997). The four oral communication skills identified as most important for entry-

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level jobs are following instructions, listening, conversing, and giving feedback.

A number of studies centered on communication skills needed by experienced professionals. Colvin's (1998) ideal profile of a middle manager includes good communication skills and being able to work in a team. Menagh (1999) also found that same theme of communication skills and interaction with peers when investigating the issue of skilled leadership. Being able to communicate one's vision and create a respectful environment were the managerial skills that Kaufmann (1998) found to be most necessary. Moore's (1998) study revealed that communication skills and flexibility made managers effective, especially those managers in the IS field.

Additional studies narrowed their focus to communication skills needed by IS employees. In one study, members of Association of Information Technology Professionals (AITP) were asked to name essential skills for new IS employees (Everett, 1988). Communication and interpersonal skills were two that were rated as essential. Albin and Otto (1987) surveyed Management Information Systems (MIS) directors who indicated that business communication skills were important for IS majors. In fact they found that "no other question in the survey generated as strong a response as this item" (18).

Watson, Young, Miranda, Robichaux, and Seerly (1990) surveyed 25 members of their university's MIS Advisory Board which represented a wide spectrum of firms. Survey results indicated that in both systems analysis and end-user support categories, business communication and interpersonal skills were seen as imperative. Findings indicated that end-user support personnel and systems analysts must be able to communicate thoughts verbally and in writing.

Insley, Becker, and Breshears (1996) surveyed IS managers to determine their perceived level of importance of six specific communication skills. These skills were listening, reading, speaking, writing, presentation, and non-verbal. All were noted as important; however, listening, reading, and speaking were determined to be of highest importance. A study that focused on programmers discovered that communication skills were as important as computer skills in order to be successful employees (Feldman, 1998).

Other studies focused on the results of poor communication and how to improve one's communication skills. Four ways to improve communication skills include treating listening as an active, not a passive skill; keeping information simple and easy to understand; being able to answer the five Ws - who, what, when, where, and why; and repeating information in several different ways (Birkland, 1992). Pollock (1999) explained several additional ways to improve communication such as avoiding ambiguity, being explicit, and avoiding double meanings.

A study in the TMA Journal (Interpersonal, 1999) noted that "interpersonal and communication skills can make or break your career success in the office of the future"(53). The importance of communication skills was also emphasized by Landolt and Gilpatrick (1999) as "people aren't afraid of technology; they're afraid of what they don't know. It is our job to explain it in a way that it becomes something they do know, something comfortable" (7). Using clear, everyday language and being able to explain technology and concepts is necessary when working with end-users. Biggs (2000) found that the bulk of information systems projects fail as a result of poor communication.

## 2. PURPOSE

The purpose of this study was to compare communication skills deemed most important for IS undergraduates and graduates as perceived by IS professionals. Undergraduate IS students are defined as those who hold a bachelor's degree in IS and graduate IS students as those who hold a master's degree in information systems.

## 3. METHOD

The researcher-developed questionnaire consisted of three categories: written, oral, and interpersonal. Each of the three categories contained specific communication skills relevant to that area and relevant to the undergraduate or graduate degree. The specific skills were obtained through previous research and the investigation of communication books, web sites, newspaper classified ads, journal articles, and interviews with business communication and IS professors. In addition, the questionnaire was pilot-tested by business communication and IS professors.

The revised questionnaire was designed showing undergraduate communication skills on the front of the questionnaire and graduate communication skills on the back of the questionnaire. The questionnaire was mailed to 500 members of the AITP. Association of Information Technology Professional members were chosen as the population because they are many times the decision-makers in the hiring of IS applicants. The rate of response was twenty percent for those responding to the undergraduate information and nineteen percent for those responding to the graduate information. One respondent did not complete the side of the questionnaire that contained the graduate information.

From a list of 13 written communication skills, 10 oral communication skills, and 6 interpersonal skills, the respondents ranked the top five skills in each area. These choices were perceived by the respondents as the most important communication skills for IS undergraduates. The responses were then weighted. A respondent's first choice was given five points, second choice four points, etc. The points for each choice from all the respondents were summed and then ranked from highest to lowest points received. Each skill could have received a maximum of 485 points if all respondents had given it top ranking.

From a list of 16 written communication skills, 15 oral communication skills, and 6 interpersonal skills, the respondents ranked the top five skills in each area. These choices were perceived by the respondents as the most important communication skills for IS graduates. The responses were then weighted. A respondent's first choice was given five points, second choice four points, etc. The points for each choice from all the respondents were summed and then ranked from highest to lowest points received. Each skill could have received a maximum of 480 points if all respondents had given it the top ranking.

#### 4. DISCUSSION/CONCLUSIONS

The following are the top five rated communication skills for IS undergraduates in the areas of written, oral, and interpersonal skills (see Table 1).

Table 1

Written Communication Skills	Points
Write Clear Directions or Instructions	275
Write Analytical Reports	216
Write Routine Letters or Memos	197
Write Procedures	192
Write Software Documentation	169
Oral Communication Skills	Points
Give Clear Directions or Instructions	320
Give Briefings to Colleagues or Superiors as an Individual	320
Give Briefings to Colleagues or Superiors with a Group	259
Deliver Oral Interpretation of Written Reports	156
Practice Correct Telephone Etiquette	140
Interpersonal Communication Skills	Points
Listen Effectively	437
Practice Correct Business Etiquette	285
Proofread	237
Interpret Non-verbal Signals	211
Practice Culturally Sensitive Communication	205

##### Undergraduate

From the findings, it is evident that IS undergraduates need general communication skills such writing routine documents, making presentations, and listening effectively.

Information systems undergraduates must also acquire communication skills specific to the IS field such as writing software documentation, delivering oral briefs, and practicing proper telephone etiquette.

Overall, effective listening and the ability to give clear directions were the most highly ranked communication skills. As many IS professionals spend the majority of their time receiving information from or providing information to users, it is important to note the necessity of these skills.

The following are the top five rated communication skills for IS graduates in the areas of written, oral, and interpersonal skills (see Table 2).

Table 2

Written Communication Skills	Points
Write Analytical Reports	235
Write Clear Directions or Instructions	205
Write Proposals	197
Write Informational Reports	132
Write Routine Letters or Memos	124
Oral Communication Skills	Points
Direct a Meeting	243
Give Clear Directions or Instructions	209
Give Briefings to Colleagues or Superiors as an Individual	194
Give Briefings to Colleagues or Superiors with a group	154
Deliver Oral Interpretation of Written Reports	99
Interpersonal Communication Skills	Points
Listen Effectively	409
Practice Correct Business Etiquette	288
Practice Culturally Sensitive Communication	215
Interpret Non-verbal Signals	201
Proofread	198

##### Graduate

From the findings, it is evident that IS graduate students must also be able to routinely communicate effectively. Proposal writing and analytical and informational report writing were highly ranked written communication skills for graduate IS students.

The ability to direct meetings was considered the most highly valued oral communication skill for graduate IS students as much of a middle manager's time is spent in meetings. As these students enter the marketplace, it is essential that they are aware of not only proper meeting etiquette, but also recognizing the purpose for the meeting, developing and following an agenda, and interacting with attendees.

Practicing culturally sensitive communication was ranked more important for graduate students than undergraduate students. At the middle management level, the ability to interact with multicultural populations is essential due to our global business environment.

## 5. RECOMMENDATIONS

Job opportunities for information graduates will continue to increase. Nevertheless, employers will still want to find the best employees. Those applicants who can demonstrate the critical communication skills found in this study should be in the highest demand. With this thought in mind, the following recommendations are made.

### Undergraduate

Undergraduates should be required to successfully complete at least one business communication course in an undergraduate program to obtain the necessary general communication skills. In addition to a general business communication course, IS professors must incorporate specific IS communication skills into the major program area. This incorporation lends itself well to a collaborative effort between professors of business communication and information systems. Furthermore, as IS professors must prioritize the time spent on the communication topics, major emphasis should be given to skills including listening and the ability to give clear directions.

### Graduate

To obtain the upper-level communication skills, a graduate managerial communications course is essential to achieve skills in giving clear directions, listening effectively, and presenting oral briefs. As, graduate IS students are often employed at the middle or upper management level and focus much of their time on proposal and report writing, these topics should be covered in a specific IS graduate level communication course to allow graduate students to develop or refine these skills. Group work should be implemented into IS course so that students can more effectively learn how to direct meetings. Courses throughout the graduate degree curriculum should also incorporate cultural diversity topics, scenarios, and projects.

## 6. FUTURE RESEARCH

Future studies in this area should:

1. survey IS professionals focusing on the top five overall communication skills found in this study.
2. survey IS professors to compare their perception of communication skills to the perception of IS professionals.
3. investigate the availability of business communication courses in IS graduate and undergraduate curricula.

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