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A Multi-Media Learning Module Approach to Communication Skills Enhancement and Assessment

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Introduction

The need to improve communication skills of all business majors has been widely recognized in both the popular and the academic literature. Furthermore, this deficiency has been especially noted among the more technical business majors, such as business computer information systems specialists. This study built upon a six-component communication skills model (reading, writing, speaking, listening, presentation, and nonverbal skills) which was developed in earlier phases of the study [Becker, Insley & Breshears, 1993 and Insley, Becker & Breshears, 1996]. The actual content for the multi-media training modules was developed over a two year period. The purpose of this study is to discuss the development of a multi-media communication learning and assessment module for Listening Skills. Although the module content was tailored expressly for undergraduate information systems majors, the software could be used across the business curriculum.

Summary of Prior Research

Our prior research reaffirmed the perceived importance of communication skills by business professionals, but raised the serious problem of defining what is meant by "good or bad" communication skills. To begin our systematic study of this issue, a communication skills model was defined to include the following six components: reading, writing, speaking, listening, presentation, and nonverbal skills.

A nine-page questionnaire was developed to assess the relative importance of each of the six communication skills components. In addition each of the six components were decomposed into between eight to thirty-two subcategory (or micro-level) skills. For example, writing skills included subcategory skills such as: write clearly for understanding, organize and present information logically, incorporate proper writing mechanics, etc.

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Information systems managers were also asked to rate the perceived skill levels of their information systems employees and to estimate the actual amount of time they are actively engaged in each of the six communication skills components. The results showed considerable variations in communication skills across different IS job categories and educational backgrounds. Interestingly, listening skills consistently were perceived as the most important communication skill area and the most desired skill for good IS management.

The need for assessment tools to measure the level of communication skills present continued to surface throughout our research. A review of the literature found little in the way of metrics to measure student's communication skills. Biersteker [1986] proposed using the 1986 Proficiency Guidelines developed by the American Council on the Teaching of Foreign Languages (ACTFL) as an instrument for measuring communication skills of business students. This instrument followed the Speaking/Listening/Reading/Writing model and categorizes subjects' skills for each part of the model

according to the following levels: (1) novice-low, (2) novice-mid, (3) novice-high, (4) intermediate-low, (5) intermediate-mid, (6) intermediate-high, (7) advanced, (8) advanced-plus, (9) superior, and (10) distinguished. She suggested that by analyzing the ACTFL language proficiency interview style in a different way, business programs and prospective employers can predict communication competencies in actual situations and diagnose areas where the training of the student should be concentrated. Kennedy [1988] proposed a critique sheet for peer/instructor review of oral presentations. Conventional pen and paper testing instruments can be used to test basic reading and writing skills. However, in order to assess proficiency in the more aural and visual communication skills, such as speaking, listening, presentation, and nonverbal, more creative and active testing instruments are required.

In the period 1994 to 1995, we developed and formally introduced communication skill learning modules in a systems design and implementation class (BCIS 4640). We adopted a curriculum design methodology similar to the one used in building the DPMA/ACM/AIS-ICIS Model Undergraduate Information Systems Curricula [Longenecker, *et al*, 1991 and Gogone, *et al*, 1994] to design the required communications skills modules. We believe that this approach is transferable to other skills training across the curriculum. Our assessment of the success of this program is quite positive and deserving of expansion into other courses.

Multi-Media Learning Modules

Multi-media instructional technologies are becoming not just popular, but expected for selected areas of instruction. Communication skills such as listening, speaking, and presenting require active engagement and participation of students, which can appropriately be addressed with computer-assisted learning tools. Communication skills modules for Listening and Presentations have wide applicability for many courses in

the university curriculum and could even be used in special programs such as the Executive MBA program.

The content for the "traditional" lecture format versions of four separate communication skills learning modules were first tested in the capstone undergraduate information systems course (1993 - 1995). The four modules which were developed in hardcopy form were: 1) Group Communication and Collaborative Writing; 2) Listening; 3) Suggestions and Aids to Assist in Report Writing; and 4) Presentations.

Based on its high importance and the general lack of coverage, a prototype for the multi-media Listening Skills Training Module was developed using Macromedia's Authorware tool during 1994. Initially, it was believed that the traditional system development life cycle (SDLC) approach to development would suffice. All principals involved had extensive experience with traditional business application systems implementations. However, it became apparent during both the design and development phase that a much more iterative, learning-by-trail-and-error approach would be required. In large measure, this was due to our lack of experience with the multi-media programming tools and with multi-media type applications in general. In essence, a prototyping methodology, which utilized the traditional marketing storyboard approach to advertising design was eventually employed.

The first Listening Module prototype, which was built in 1994, consisted of the following design components: 1) The actual listening training materials (course content); 2) the course navigational software; 3) testing and assessment components; and 4) course management software for tracking student progress and storing test results. Because the Authorware product provided little in the way of navigational aids or course management tools, most of the construction effort was devoted to this portion of the implementation. The content portion and the testing portion were only partially implemented after more than six months of development. We concluded that although Authorware was among the most highly touted multi-media programming languages, it lacked sophisticated, generalizable, built-in routines and functions to assist with even modestly rapid application development.

Shortly after completing the first prototype, we discovered the AMR World Tutor software product. This product, which was written in Authorware, included a preprogrammed navigational tool and their proprietary course management software. The course management tools permitted the instructor to monitor

the progress of individual students and multiple classes of students in a network environment. Course-related security access and control software was also included. To effectively use the AMR World Tutor Software, however, a three-day training course was required, which we highly recommend for even the most experienced Authorware programmers.

The final Listening Module was developed over a six month period in 1995 using AMR's World Tutor software. Most of our development time could now be devoted to the actual course content and the assessment instrument, because of its navigational structure, its Course Management Software, and its compatibility with Authorware. The three hour Listening Module is undergoing beta testing at this time.

Assessment Tools

Several assessment tools were also investigated. In particular, the Watson-Barker Listening Test [1992], a performance- based test, was field tested. Additional pen and paper tests for listening skills were also developed and tested. Manual communication skills assessment methods were found to be both extremely labor intensive and time consuming. Multimedia software was thought to provide a means of addressing both problems. The assessment instrument portion could be administered to all business majors as a pre-test, when they are first admitted to the College at the beginning of their junior year. In turn, other multimedia communication skills assessment instruments could be administered as a post-test just prior to graduation.

Summary

An exhaustive analysis of the communication skills requirements for undergraduate information systems majors at the University of North Texas was conducted using curriculum design tools developed for the DPMA/ACM Model Curriculum studies. It was concluded that perceived communication skills deficiency could be resolved by including specially targeted course modules within selected existing courses. After field testing the course content portions using traditional lecture and "pen and pencil" techniques, it was decided that a multi-media approach to certain communication skills areas would be appropriate and perhaps even more effective. A prototyping approach, which utilized marketing storyboarding design principles, was adopted. Although there was a steeper than anticipated learning curve for multi-media course development, it is believed that by utilizing pre-packaged courseware tools for navigation and course management, such as AMR's World Tutor Software, more rapid application development will be possible in the future. The three-hour Listening Module, which was developed, is still in beta testing.

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