Interactive technologies for the Jepson School of Leadership studies

Alison Hettrick

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Interactive Technologies for the
Jepson School of Leadership Studies
by
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Interactive Technologies for the Jepson School of Leadership Studies

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April 20, 1994
Interactive Technologies for the Jepson School of Leadership Studies

Part I - Technology & Leadership Studies at the Jepson School

With the onset of emerging technologies in both corporate and educational settings, the need arises for institutions to incorporate the latest advancements in these technologies in order to remain competitive. This means that educational institutions like the University of Richmond must be prepared to educate students by not only incorporating the latest knowledge that can be applied to the various components of a liberal arts education, but also including applicable technologies that enhance the learning potential of liberal arts course work. The focus of this paper is to discuss a proposal regarding the most appropriate way to make a prominent school within the University of Richmond interactive with respect to latest technological advancements in hardware and software that are currently available. The school to be chosen for this proposal is the Jepson School of Leadership Studies.

The Jepson School was chosen for this proposal because it is a school that emphasizes an exclusive and unique approach to the study and practice of leadership. Students who attend this school complete a Bachelor of Arts degree with a major in leadership studies and either continue their study in other disciplines in graduate school, or they enter the work force after graduation. Regardless of students' post-graduate aspirations, the vision and curricular goals of the Jepson School are to provide students with the best possible education and preparation in both the theoretical and practical applications of leadership studies. In order to adequately prepare students to serve in leadership roles that are meaningful and productive, the Jepson School must remain on the cutting edge of leadership education. This means that it must not only attract the greatest professors and students into its program, but it must also incorporate the best methodologies for allowing students to maximize their learning potential in courses that are offered in the leadership studies curriculum. In order to accomplish this, the Jepson School needs to include those technologies that have the potential to maximize the learning potential of each course offering. The quality of leadership training currently being offered by the Jepson School, coupled with the
appropriate technologies to enhance that training, will help the school achieve its vision and expectations of being the first and foremost school of leadership throughout the country.

The vision of the Jepson School of Leadership Studies rests on the commitment and dedication of both its faculty and administration in preparing students for and about leadership. In the research phase of the development of this proposal, an interview with Dr. Howard Prince was conducted to determine his views regarding the incorporation of technology into the school's vision of providing quality leadership education. Dr. Prince believes that the Jepson School would provide a unique setting for which technology could be coupled with traditional teaching methods toward the study of leadership theory and practice. He emphasized the fact that since the inception of the Jepson School, other educational institutions have established programs and courses on leadership studies. In order for the Jepson School to remain competitive and to be considered a "leader" in providing leadership education, he supported the investment and the interest in the pursuit of integrating the latest theoretical as well as practical investments into the program. Dr. Prince stated that these investments would include the development and incorporation of technology into the leadership studies curriculum. His reasoning for including these technologies into the Jepson School is that, due to their interactive nature, they help leadership studies students' take responsibility for their own learning. According to Dr. Prince, developing this responsibility is a life-long skill that should be emphasized and fostered in the Jepson School's learning environment.

Aside from the interview with Dr. Prince, the research that was obtained for the development of this proposal also involved interviews with both faculty and students. The conclusions that I was able to draw from these interviews were a reflection of their levels of interest and commitment to the changes that would be necessary to implement technological applications into respective Jepson School courses. The majority of the faculty that were interviewed felt that the incorporation of technology into the leadership studies curriculum, though beneficial, might be too difficult to implement with the existing technologies available at the university. They also communicated the importance of addressing the issues of user involvement and the user friendliness of applications. Most members of the faculty were in favor of exploring
the possibility of using multi-media as well as other interactive technologies like Group Decision Support Systems (GDSS) and Expert Systems (ES) applications in their courses. Some had suggestions of available technologies that would be directly applicable to leadership studies courses. These applications would simulate leadership situations that would allow professors to demonstrate the practicality of the theoretical models and leadership perspectives currently being lectured on or demonstrated through more traditional approaches such as role plays in leadership studies courses. Other faculty members offered ideas and suggestions for the development or "authoring" of technical applications that would be specifically tailored to the courses that they teach.

Since the Jepson School of Leadership Studies is a school that emphasizes a collaborative learning environment between its faculty and students, candid interviews were conducted with several students about how they would feel about the incorporation of interactive technologies into their leadership studies course work. The students that were interviewed appeared to favor a pilot incorporation of technology into some of their leadership studies courses. The students, like those members of the faculty that were interviewed, were concerned with the user friendliness and the cost of using such technologies. Their primary concern was with the extent of the learning curve that would be associated with the chosen technologies in their leadership studies courses. Based on the information obtained from faculty and students, the following issues would need to be addressed with regards to the inclusion of interactive technologies into the leadership studies curriculum:

- The degree of change required to accommodate the implementation of interactive technologies.
- The amount of learning and outside preparation required to successfully implement interactive technologies into the Jepson School.
- The user friendliness of the interactive technologies.
- The extent of involvement of faculty in the development or decision process to implement these technologies into their courses.
- Whether or not current university facilities can accommodate the incorporation of
interactive technology into the leadership studies curriculum

The cost of development, implementation, maintenance, as well as upgrades of technologies to be incorporated.

Each of these issues will be carefully considered and evaluated in this proposal. A careful evaluation of these concerns will be crucial to the successful implementation of interactive technologies into the Jepson School curriculum.

The curricular goals of the Jepson School exemplify an emphasis on experiential learning. Relating leadership theory into practice is one of the principal components of the leadership studies curriculum, thereby, allowing for the impact of interactive technologies to simulate experiences that would attain this objective to be an important enhancement. Current courses in the Jepson School relate to both the context and competencies of leadership. The curricular goals of the Jepson School that exemplify the overall objectives of both context and competency courses are listed as follows:

- Serve effectively in formal and informal leadership roles in a range of settings.
- Help others exercise leadership and hold other leaders accountable.
- Develop cooperation and teamwork while inspiring commitment and trust.
- Combine knowledge with judgment and imagination to creatively solve problems with others.
- Apply the modes of inquiry and knowledge bases of many disciplines to the study and practice of leadership.
- Think critically about leadership knowledge and practice.
- Exercise moral judgment, imagination, and courage in the practice of leadership.
- Imagine worthwhile visions of the future and inspire others to join in bringing about change when desirable or necessary.
- Continue their development as leaders by self directed learning.
Through the incorporation of various interactive technologies into the Jepson School of Leadership Studies curriculum, it is predicted that the potential for enhancement of the Jepson School's curricular goals will be successfully attained.

The term "interactive technology" as defined by this proposal is any technology that involves direct, hands-on interaction by either faculty or students. Current technologies being considered for this proposal include Group Decision Support Systems (GDSS), Expert Systems (ES) and Authoring Tools, and Multi-media interactive software. In order to evaluate the extent of change that the Jepson School might potentially undergo with the introduction of interactive technologies into the leadership studies curriculum, an understanding of the scope of technologies being considered for this proposal must be included. The specific nature of these technologies will be discussed in the following paragraphs with respect to the specific core, context and competency courses currently offered by the Jepson School.

Part II - Interactive Technology in Leadership Studies Courses

The curriculum of the Jepson School is centered around both the contexts and the competencies of leadership. Students begin their study at the Jepson School with a course in Foundations of Leadership Studies. Because the Foundations of Leadership Studies course emphasizes an introduction to the discipline of leadership studies, each of the interactive applications that will be discussed in the following paragraphs for both the context and competency courses could be applicable and relevant to Foundation's students' study of leadership. This course could be potentially supported by each suggested interactive application or system being proposed by this report; however, because it is a course designed to introduce students to the leadership studies discipline, I recommend that an "authored" learning tool be incorporated.

Authored learning tools and software allow a professor to tailor lecture highlights in such a way as to promote discussion on various bullet points of a lecture. This type of software is appropriate for the Foundations of Leadership Studies course for several reasons. First, it encourages group and individual participation in discussion which is often one of the challenges of
teaching this course. Second, it allows the professor to “build the foundations out of which the 
curriculum emerges and out of which leadership study and practice seem to emerge” (Hickman, 
1994). For example, professors would be able to “author” this software in such a way as to 
emphasize important distinctions between the basic definitions, theories and approaches to 
leadership that are an integral part of the Foundations course objectives. This can be accomplished 
through the creation of interactive presentations that can foster class discussion on those leadership 
topics highlighted by the professor. Although the Jepson School recently invested in software 
called Toolbook that might achieve this purpose, I do not recommend its use due to the learning 
curve and time commitment required to get the software operational for a Foundations of 
Leadership lecture. Instead, research for authoring applications that would better meet the Jepson 
School’s requirements of user involvement, user friendliness, and cost, show that Authority is a 
better system. The complete profile of Authority as well as Toolbook has been included in Table 
1 for a basis of comparison.

(INsert TABLE 1 HERE)

In order for students to complete their Bachelor of Arts degree with a major in leadership 

studies, they must complete several courses in the core curriculum. These courses are designed to 
build off of many of the topics introduced in the Foundations of Leadership Studies course. The 
first of these courses is a course called History & Theories of Leadership. The objectives of this 
course are to introduce students to historical concepts used in the study of leadership by examining 
how the history of leadership has been shaped by great men and women. This course traces 
leadership from ancient civilizations to the 20th century. The second part of the History & 
Theories course deals with the contemporary theories and models of leadership. Among the 
contemporary theories that are included in the objectives of this course are: the trait, behavioral, 
and contingency theories, power and influence approaches, vertical dyad linkage, multiple 
influence theory, and the transformational leadership theory.

Determining different types of interactive software to support this course presented some 
interesting challenges. Due to the multi-faceted nature of the History & Theories of Leadership
course objectives, it was essential that interactive applications could be available to enhance the learning potential of both the historical and theoretical perspectives of leadership. In order to accomplish this, two different applications should be incorporated into this course. One suggested interactive application for the historical component of the course would be a multimedia version of news programs such as those found on CNN. The application, *CNN Newsroom Global View*, provides an interesting enhancement to the study and evaluation of 20th century leaders by providing interactive presentations of speeches and public appearances of some of the greatest leaders of recent history. This application would provide a good compliment to students' study of 20th century leadership provided in both text and lecture, as well as promote their critical and analytical skills in analyzing the effectiveness of these leaders in the settings and contexts in which they served in leadership roles.

Another course for which the *CNN Newsroom Global View* application could also be effective for enhancing the learning potential would be the Problems, Policy, & Leadership course that deals with the evaluation of how real life issues and problems are being dealt with by leaders on both a national and international scale. The Problems, Policy, & Leadership course is a course that allows students to further their competence in policy issues with respect to acquiring the skills to know how to identify and approach the problems that encompass both the private and public sector. A detailed description and systems requirements for the *CNN Newsroom Global View* application is found in Table 2.

(INsert Table 2 HERE)

The theoretical component of the History & Theories of Leadership course requires an interactive application that should enhance students’ learning potential of the theoretical perspectives of leadership. Although there are currently no applications that deal with specific theories or models of leadership, like the path-goal theory, or the vertical dyad linkage model, there are interactive applications that address the leadership issues that these theories attempt to articulate. One such application is the *Situational Leadership Interactive Video Instruction*. This application provides students with insights about developing a practical framework to effectively lead others.
Its full description and hardware requirements are also listed in Table 2.

One of the most important core courses for the development of leadership is Critical thinking & Methods of Inquiry. This course aims to develop students’ abilities to think critically and analytically and raise questions about information that is presented to them. One of the practical applications of this course is that students develop their critical listening, reading, and writing skills by analyzing several visions, arguments, ideas, and those theories that gain adherents, while others that do not. An interactive software application that would help accomplish some of the learning objectives of the Critical Thinking & Methods of Inquiry course is called *Perception: Identifying Information*. This application would support the development of these skills. Its complete description is provided in Table 3.

**(INSERT TABLE 3 HERE)**

Another interactive application called the *NewBook* editor is being used to improve students “ability to decipher complex events, issues or statements” (Thurber, Macy, & Pope, 1991) at the University of San Diego. This software program emphasizes the incorporation of critical thinking into an interactive software application. *NewBook* is an authoring tool in which professors are able to design applications that will relate to topics being covered in their courses. The aforementioned *Authority*, and *Toolbook* have the same specifications as those found in the *NewBook* editor. The professors at the University of San Diego developed a prototype application from NewBook called *Warsaw, 1939*. This application places students in the Warsaw ghetto in 1939 and asks them to make decisions about what they might do in that situation and time period. The students’ decision making determines what takes place in the ghetto. This application fosters students to think both critically and analytically about their surroundings. One of the outcomes from using *Warsaw, 1939* is that students write essays that have to explain or support the decisions that they have made throughout their reading of the interactive book. This application provides a simulated analytical experience for students to help enhance and improve their analytical skills.
In researching possible interactive software programs to address the ethical issues associated with leadership, it was determined that authored programs could best support the objectives of the Ethics & Leadership course. Ethics & Leadership is a course with the following objectives as indicated by the Ciulla (1994) syllabus:

- To develop moral vision and imagination
- To analyze the moral obligations of leadership in different contexts
- To explore the relationship between public and private morality
- To learn how leaders shape the moral environment
- To broaden students' understanding of different moral perspectives
- To develop students' ability to present and critique moral arguments

Throughout the Ethics & Leadership course, discussions of cases that present ethical dilemmas are an integral part of the learning process. One of the ways that an authoring tool like Authority or NewBook could enhance the quality of these discussions would be if the cases that are to be discussed were placed into these tools so that the students could see the outcomes of the ethical decisions that they make. They would then be able to record these outcomes and take them to class to analyze and compare with classmates. The quality of discussions would be improved and students would potentially learn more about the impact of making ethical choices when confronted with the complexities of real-life leadership situations.

The competency courses offered at the Jepson School deal with helping students to attain the capacity to function or develop as leaders who engage with others in a productive and meaningful manner. According to Bill Howe, a leadership instructor at the Jepson School, "...the Jepson School seeks to educate students so that they have the potential to exercise leadership, and does not claim to be producing future leaders..." (Howe, 1993). Nevertheless, competency courses at the Jepson School focus on such topics as: decision making and leadership, problems and policies of leadership, leadership and motivation, understanding and leading individuals, conflict resolution, and the leader as a change agent. The research conducted for this report found several different interactive applications and systems to support these aforementioned
competencies.

A Jepson School core course as well as a competency course that would be adequately supported through the use of one interactive system would be Leading Groups and Decision Making. The purpose of Leading Groups, according to Dr. Karin Klenke, is "...to help students develop a conceptual framework and practical understanding of how groups function and to further develop their leadership skills in the context of groups" (Klenke, 1994). Some of the objectives of the Decision Making course are similar to those of Leading Groups with respect to their emphasis on collaborative processes and small group interaction. Decision Making is a competency course taught at the Jepson School to emphasize the importance of understanding and practicing the art of decision making and its implications for leadership. The learning processes that take place in both Leading Groups and Decision Making could be appropriately enhanced through the incorporation of a Group Decision Support System (GDSS).

The design of a GDSS system varies with the decision making purpose for which the system was intended. However, all GDSSs influence group interactions such as removing common communication barriers, providing techniques for structuring decision analysis, and systematically directing the pattern, timing, or content of discussion. The fundamental goals of all GDSSs are to support collaborative work activities such as idea creation, message exchange, project planning, document preparation, mutual product creation, joint planning, and decision making (Fulk & Steinfeld, 1990). The more sophisticated the GDSS technology, the greater the impact of its intervention into unstructured group decision making processes.

There are three different levels of GDSS that provide varying degrees of structure to decision support and group interaction. Each of these levels increases in degree of technical sophistication, thereby making a more dramatic intervention into the group process exchange. Based on the capabilities of current technology, only two levels of GDSSs will be discussed in this proposal with respect to their potential support and enhancement of the Jepson School's Leading Groups and Decision Making courses. Their capabilities in meeting both the problems and needs of decision making groups that may be incorporated into both Decision Making and Leading
Groups courses are profiled in Table 4 and Table 5, respectively.

(INSERT TABLE 4 & TABLE 5 HERE)

The first level is a Level 1 GDSS. Level 1 GDSSs have technological features that aim to remove the common communication barriers. These systems improve the decision process by soliciting information exchange among group members (DeSanctis & Gallupe 1987). Level 2 GDSS incorporate decision modeling and group decision techniques that make them more sophisticated than a simple communication device. Any Level 2 GDSS might provide such features as automated planning tools and other aids that will allow group members to work and view their progress simultaneously on a large screen. By providing risk analyses of judgment formation, Level 2 GDSSs provide representation of the group's best interests in obtaining its most effective collaborative decision.

It is apparent that both Level 1 and Level 2 GDSSs would significantly enhance the learning potential of the Leading Groups and Decision Making courses. Both a Level 1 GDSS and a Level 2 GDSS, through their respective nature of structuring group interactions, would meet the following course objectives for Leading Groups:

- Explain behavior in both formal and informal groups
- Understand leadership in the context of group dynamics
- Develop the ability to understand and integrate various properties of groups into a meaningful theoretical framework.
- Define methods of inquiry such as interaction process analysis, and network analysis.
- Develop personal leadership skills in the context of a real or simulated group.

In accordance with Leading Groups, Level 1 and Level 2 GDSSs provide some striking enhancements to the Decision Making course objectives. For example, both levels of GDSS would assist the learning potential of exploring decision making through the various pedagogical
strategies like small group interaction and the distinction between individual, group, and the collective effect of individual and group decision making processes. Both Level 1 and Level 2 GDSSs could structure decision making processes to further enhance students understanding of these pedagogies with respect to their impact on leader behaviors and processes.

Currently, there are several GDSS systems that are commercially available. Many have the capacity to perform effectively on most Local Area Networks (LANs). An evaluation of the LAN in Jepson Hall was conducted with respect to the potential impact that the addition of this system might have on network capacity and communication protocols with other networked applications. It was determined that this system could be placed in one or more of the teaching laboratories that currently house networked PC's running Windows environment software. The realistic potential of adding a GDSS application to the network is very feasible with respect to cost and user friendliness. It is for these reasons that a recommendation for the purchase and use of a GDSS for the Jepson School of Leadership Studies should be seriously considered.

Although a GDSS would adequately enhance the learning potential of most topics discussed in Decision Making, there are multi-media applications that should also be considered. Two of these multi-media applications are called Decision Making: Reaching Conclusions and Decisiveness: Reaching Conclusions. Their respective profiles and system requirements are included in Table 6.

The respective components of these two systems applications would focus on the interactive potential that multimedia can offer for topics related to decision making. These two applications would enhance the learning potential of decision making because they address decision effectiveness, the obstacles to decision making, and the importance of critical thinking, and ethics to the decision making process.
One of the Jepson School of Leadership Studies courses that is closely related to the Decision Making course is the Conflict Resolution course. While decision making refers to selecting a particular course of action from a set of alternatives, conflict resolution refers to the process of dealing with parties who have incompatible interests or goals. The similarity between these two courses lies in the fact that conflict resolution requires considerable decision making. Although interactive software that deals with decision making may be useful for conflict resolution topics, it is not adequate to address all of the finer points of conflict resolution including: negotiation and bargaining skills, understanding the origins of conflict, the role of the leader as a peacemaker, the role of power in conflict, and how to resolve conflicts. These issues demand the incorporation of simulations and other applied experiences to allow students to observe the dynamics of conflict resolution, as well as develop their own skills in bargaining and negotiation. Although a search was conducted, without success, for interactive applications that would directly meet all of the objectives for the Conflict Resolution course, there is an interactive application that deals with conflict in the context of groups. This application is called Advancing Team Performance. Although this application makes a significant enhancement to the learning that takes place in the Leading Groups course, some of its components would be very useful to incorporate into the Conflict Resolution course. Its specifications and hardware requirements are included in Table 7.

(INSERT TABLE 7 HERE)

Another competency course offered at the Jepson School that has the potential to have interactive technology incorporated to enhance its learning objectives is the Leader as a Change Agent course. This course is designed to give students the opportunity to evaluate the concept of change as both a process and an outcome. The objectives of this course include: analyzing the leadership role in the change process, exploring the impact of different contexts on the change process, examining both the outcomes and the rewards of leading change, and understanding the consequences involved in leading change. The mastery of these objectives for the Leader as a Change Agent course can be further enhanced through the incorporation of the interactive multimedia application called Flexibility: Adapting to Change. The capabilities and system
requirements for this application are included in Table 8.

*(INSERT TABLE 8 HERE)*

The Jepson School's curriculum also includes two other competency courses whose objectives and goals relate to topics associated with the individual. These courses are Leadership & Motivation and Understanding & Leading Individuals. Leadership & Motivation is a competency course designed to help students become more aware of what motivates them, what does not motivate them, and how changes may occur with respect to self-motivation. This course also helps students understand the theoretical and practical applications of motivation with respect to leadership. The Understanding & Leading Individuals course deals with leadership and the individual in terms of addressing the following objectives: leaders development and how leadership changes in individuals as a function of maturation and experience, the analysis of moral development from several theoretical perspectives, the relationship of personality variables, attitudes, needs, and values to leadership, as well as understanding how leaders and followers organize their respective perceptions. Because both of these courses deal with issues and competencies that relate to the individual, the incorporation of an interactive application that focuses on these concepts would enhance their specific learning objectives. One multimedia application that deals with how people interact with one another, as well as how to develop and improve interpersonal skills is called *Interpersonal Relations: Interacting With Others*. The specified capabilities of this application to enhance the Leadership & Motivation and Understanding & Leading Individuals courses are included in Table 9.

*(INSERT TABLE 9 HERE)*

The context courses offered at the Jepson School provide students with exposure to the various contexts of leadership. These contexts include: political systems, social movements, community and volunteer organizations, and formal organizations. In researching possible interactive technologies to enhance the learning potential of each of these courses, several applications and systems came to the forefront. The first of these includes the Authoring Tools that
have been previously evaluated and discussed in this report. Since there are currently no available applications that deal with leadership in political systems, community and volunteer organizations, formal organizations, or social movements, some of the finer points of these context courses could be placed into an interactive program that would enhance professors' teaching effectiveness in presenting material associated with these topics. For example, the Leadership in Social Movements course provides students with an extensive background in the leadership issues associated with the context of the Civil Rights Movement. Currently, a great deal of class time is spent watching film footage of the major events of this movement. This film footage could be incorporated into an authored program that highlights the points that the professor teaching the course wants to make about the leadership context being presented. This enhances the learning potential of context courses like Leadership in Social Movements because it promotes discussion and emphasizes the issues that need to be presented and evaluated. The customized authored programs that have the capability enhance the curricular objectives of the Leadership in Social Movements course could also be created for the other context courses.

The Leadership in Formal Organizations course was the only context course evaluated that could be supported with currently available multimedia interactive software. One of the critical components of the Leadership in Formal Organizations course is the fact that students have the opportunity to establish and develop their own formal organization. Currently, there are two multimedia applications that would help enhance or structure the learning process associated with starting a formal organization. These applications are respectively called The Business Disk and The Versatile Organization. The Business Disk provides the support and direction necessary to help students start their own corporation. Its full description and hardware requirements are included in Table 10. The Versatile Organization is the second multimedia program that provides students with simulated experiences that focus on the practical components of communication, decision making, and conflict resolution associated with being involved in a formal organization. The complete description and components of this package are also included in Table 10.

(INSERT TABLE 10 HERE)
promote the marketing and development of their latest hardware and software products. One of these companies, IBM, provides extensive support and technical consulting services to its clients. According to an article published in the *McGraw-Hill Handbook of Multimedia*, "A multimedia consultant can make that critical link by using a structured, transferable methodology to make multimedia an integral part of business processes and strategies" (Gruskin, 1994). Although the Jepson School of Leadership Studies is not a business, its needs and goals with respect to increasing communications and incorporating the latest technologies are similar to the needs and goals of corporate America.

The business of enhancing the capabilities of normal PC's through the attachment of a combination of speakers, video cards, and new software should not be taken lightly by the leadership responsible for its design, development, and implementation. The financial ramifications of poor decision making in the planning process of introducing these technologies into any organization like the Jepson School could be disastrous. The rapid nature of technological developments in interactive and multimedia software should give the leadership of the Jepson School some pause for thought about the extent to which they want to commit themselves to carrying out this kind of endeavor. If they are committed to bringing the best of the interactive applications available, they should definitely consider the intervention of outside resources to assist them in this type of undertaking.

Finding a good technical consultant for an institution like the Jepson School is not an easy process. Most technical consultants deal with corporate issues, exclusively, and the fee required to obtain them for an entire course of a project, as would be needed by the Jepson School, would be well beyond what the school could afford. Still, the advantages of having these services outweigh their costs. The Jepson School must be aware; however, that many traditional consulting firms that claim to offer technical expertise in the planning and implementation of these technologies are not able to do so. Several articles have been written in *Unix World* and *Multimedia Today* about the importance of knowing the difference between the "good" and "bad" consultants. These articles have made recommendations that are noteworthy of mention if the Jepson School seriously considers the option of technical consulting for multimedia and interactive systems. Both articles
include information related to fact that any type of interactive media consultant should approach the issues involved with the implementation of these technologies from the perspective of complete project management. Complete project management refers to the fact that the provided consultation and services should continue throughout the proposal, design, implementation, and follow-up phases of any technology-based project.

The IBM Multimedia Consulting Practice is a unit of the IBM Consulting Group that was recommended by *Multimedia Today* for providing superior services and strategies. The IBM Multimedia Consulting Practice has developed a unique, client-centered methodology for planning and executing multimedia projects. The methodology is flexible enough to work for corporate wide distributed business process solutions or for stand alone training solutions (Keyes, 1994). The combined expertise of their consultants are what make their practice very unique. The Jepson School should evaluate the services of IBM, as well as other multimedia consultants when planning their implementation of multimedia software for leadership courses.

**Part V - The Final Analysis**

The research and the interviews that were conducted for this report and proposal brought together some very basic leadership issues that face organizations on a regular basis. These issues relate to the impact and the tolerance of changes that need to be made when any type of technology is planned to be included into the learning or work environment of an organization. It was determined from interviews with students, faculty, and administration that there is, in fact, an interest in having interactive software and hardware support the leadership studies curriculum; however, there are concerns about whether or not this is even a realistic option for the Jepson School in light of its existing technological limitations. Most of the people who were interviewed agreed that it is an idea that should be pursued by the school once it is properly outfitted with the appropriate hardware, software, and network connections.

Completing this project was a very interesting and challenging endeavor due to the fact that it provided me with a great deal of insight about the leadership processes that currently occur at the
Jepson School. I learned a lot about the hierarchical leadership at the school from the continuum of its students and support staff, to its faculty and administration. Discussing technological issues with many different leaders throughout the school is what made this project rewarding in many respects. From a leadership perspective, my involvement in completing this project demanded the leadership competencies of effective communication, and the ability to think both critically and analytically. The greatest challenges of this project involved the research process for each of the interactive hardware and software systems that could meet the needs and requirements of the school.

The type of work that I completed for this project was relevant to my background in leadership studies and computer science. Because I will be entering the field of consulting that emphasizes project management for implementing technology strategies, the nature of this project directly related to my career objectives. I hope that what I have proposed in this project will be helpful to the Jepson School's search for new technologies to support its curriculum. I also hope that the Jepson School will critically evaluate its goals and ambitions concerning the use and development of technology to support the leadership studies curriculum, and that this evaluation is used to begin addressing the roadblocks and limitations that currently inhibit the school's chances for success in this type of endeavor. I look forward to learning more about the impact that interactive technologies may have on supporting and enhancing the learning environment at the Jepson School of Leadership Studies if implemented. With the appropriate planning and preparation required to make an implementation of these technologies successful, the Jepson School will undoubtedly reach its objectives of providing students with the most innovative and highest quality leadership preparation possible.
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<th>AUTHORITY</th>
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<td><strong>Hardware Requirements</strong></td>
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<tr>
<td>• 640K RAM; 80286 CPU or larger; DOS 3.0 (DOS 5.0 for multi-media version); EGA/VGA display; hard disk drive.</td>
<td>• 1.5MB RAM; 80286 CPU or larger; DOS 3.1 or higher; Microsoft Windows version 3.0 or higher; EGA/VGA display; hard disk drive</td>
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<td><strong>Description</strong></td>
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<td>Authority is a visual system for building interactive DOS software without having to write code. Users click and drag with the mouse to create educational software or multi-media presentations. Users can combine text and graphics to lay out screens and windows, add sound, MIDI music, CD audio, and full motion video. Authority also provides an onscreen map that shows the flow of a program, so users will never get lost. Authority comes complete with all of the tools necessary to create interactive applications and presentations. These tools include: the development system for building and testing their program, and utilities that create a single executable file and make distribution disks. The runtime version of Authority is royalty free.</td>
<td>A software construction set that can be used to develop applications. A Toolbook application consists of one or more books that are designed for a particular purpose such as training, information management, or entertainment. Books that can be created can range from a simple collection of information, to an interface for another application, to a self-contained application that can be sold for profit. Toolbook can be effectively used to develop training packages, courseware, or presentations that incorporate graphics and animation capabilities. Some written code may be required to develop Toolbook applications. Prototypes for applications can be created and developed. The Toolbook package includes online and print documentation, as well as online help and tutorials.</td>
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<td><strong>Manufacturer</strong></td>
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</tr>
<tr>
<td>• Interactive Image Technologies Ltd.; 700 King St. W, Ste. 815; Toronto, Ontario Canada M5V 2Y6; (800) 263-5552</td>
<td>• Asymetrix Corporation 110 - 110th Avenue N.E. Suite 717 Bellevue, Washington 98004 (206) 637-1500</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th></th>
<th>CNN Newsroom Global View</th>
<th>Situational Leadership Video Interactive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardware Requirements</td>
<td>• IBM PC or compatible; 640K of RAM; 1 MB of free space on hard disk; MS-DOS 3.3 or later; DOS 2.0 extensions; VGA graphics card and monitor; CD-ROM drive.</td>
<td>• IBM PC or compatible; VideoLogic DVA-4000; IBM InfoWindow; SonyView 5000.</td>
</tr>
<tr>
<td>Description</td>
<td>• In the CNN Newsroom &quot;studio,&quot; users can select video essays from the simulated video monitors and see CNN's most compelling coverage of important global trends - specially edited for a computer monitor. It includes more than one hour of narrated video to listen and watch. Users explore different points of view from articles, charts, and maps drawn from world-wide publications - hundreds of commentaries by leading authorities, transcripts of speeches by world leaders, pros and cons and analyses from international newspapers and magazines - unique perspectives from around the world. Users can select the GLOBE and zoom in on detailed maps of every country and region; examine information and analyze trends from a unique database of world statistics; and build their own charts and analyses.</td>
<td>• Situational Leadership is an easy-to-use and world wide proven model of how to positively influence others. This program presents a practical framework for developing people, reversing performance problems, and increasing productivity. With Situational Leadership Interactive Video Instruction, leaders can learn to effectively manage people and to develop their abilities and performance. When implemented throughout an organization, it can integrate with and compliment existing programs, such as team-building, quality, empowerment, values and vision. This learner-directed program is rich with full-screen video vignettes and powerful learning activities and is completed in 4 to 6 hours. Key features include engaging in simulations, style assessment, thoughtful feedback, and results tracking.</td>
</tr>
<tr>
<td>Cost</td>
<td>• $99.95 retail - CNN Newsroom Global View</td>
<td>• $3500 retail - Situational Video Interactive</td>
</tr>
<tr>
<td>Manufacturer</td>
<td>• Compact Publishing, Inc.; 5141 MacArthur Blvd.; Washington, D.C. 20016 (800) 964-1518</td>
<td>• Center for Leadership Studies; 230 W. 3rd Ave.; Escondido, CA 92025 (619) 741-6595</td>
</tr>
</tbody>
</table>
Table 3

Perception: Identifying Information

System Requirements

• IVD Level III; IBM InfoWindow; Ultimedia or M-Motion; Sony View 5000 or Sony SMI 3082; VideoLogic MIC 4000.

Description

• Components of this program include: Searching for Information; Recognizing Characteristics; Determining Essential Factors; Identifying Relationships; and Interpreting Information. This module improves an individual's skills in utilizing effective perception skills. It identifies sources of information, seeks information from others, recognizes patterns of performance, recognizes the influences of own biases, organizes, analyzes, and summarizes data, is aware of varying personal styles, looks for relationship factors among data and generates explanations.

• Call for pricing.

Manufacturer

• Wilson Learning Corp.; 7500 Flying Cloud Dr.; Eden Prairie, MN 55344; (800) 328-7937

Table 4

Problems and Needs of Decision-Making Groups with Corresponding Features for a Level 1 GDSS.

<table>
<thead>
<tr>
<th>Group Problem or Need</th>
<th>GDSS Feature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sending and receiving information efficiently</td>
<td>Electronic messaging, broadcast or point to point</td>
</tr>
<tr>
<td>among all parties or specific group members</td>
<td></td>
</tr>
<tr>
<td>Access to personal data files or corporate data</td>
<td>Computer terminal for each group member; gateway to a local area network or</td>
</tr>
<tr>
<td>during the course of a meeting.</td>
<td>central computer</td>
</tr>
<tr>
<td>Display of ideas, votes, graphs, or tables to all members</td>
<td>Large common viewing screen or &quot;public&quot; screen at each group member's terminal</td>
</tr>
<tr>
<td>simultaneously</td>
<td></td>
</tr>
<tr>
<td>Reluctance of some members to speak due to their shyness,</td>
<td>Anonymous inputs of ideas and votes</td>
</tr>
<tr>
<td>low status, or controversial ideas</td>
<td></td>
</tr>
<tr>
<td>Failure of some members to participate due to laziness or</td>
<td>Active solicitation of ideas or votes from each group member</td>
</tr>
<tr>
<td>&quot;tuning out&quot;</td>
<td></td>
</tr>
<tr>
<td>Failure to efficiently organize and analyze ideas and votes</td>
<td>Summary and display of ideas; statistical summary and display of votes</td>
</tr>
<tr>
<td>Failure to quantify preferences</td>
<td></td>
</tr>
<tr>
<td>Failure to develop a meeting strategy or plan</td>
<td>Provide rating scales and/or ranking schemes; solicit and display ratings and ranks</td>
</tr>
<tr>
<td>Failure to stick with the meeting plan</td>
<td>Provide a mock agenda which the group can complete</td>
</tr>
<tr>
<td></td>
<td>Continuously display the agenda; provide a time clock; automatically display agenda items at the appropriate time</td>
</tr>
</tbody>
</table>

Taken from DeSANCTIS & GALLUPE (1987)
Table 5

Problems and Needs of Decision Making Groups with Corresponding Features for a Level 2 GDSS

<table>
<thead>
<tr>
<th>Group Problem or Need</th>
<th>GDSS Feature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Need for problem structuring, planning, and scheduling</td>
<td>Planning models, e.g., PERT, CPM, Gantt</td>
</tr>
<tr>
<td>Decision-analytic aids for uncertain future events</td>
<td>Utility and probability assessment models, e.g., decision trees, risk assessment</td>
</tr>
<tr>
<td>Decision-analytic aids for resource allocation problems</td>
<td>Budget allocation models</td>
</tr>
<tr>
<td>Decision analytic aids for data oriented tasks</td>
<td>Statistical methods, multi-criteria decision models</td>
</tr>
<tr>
<td>Decision-analytic aids for preference tasks</td>
<td>Social judgement models</td>
</tr>
<tr>
<td>Desire to use a structured decision technique but insufficient knowledge or time to</td>
<td>Automate the Delphi, Nominal, or other idea gathering and compilation technique(s); provide an online tutorial for the group or a human facilitator</td>
</tr>
</tbody>
</table>

Taken from DeSANCTIS & GALLUPE (1987)
Decision Making: Reaching Conclusions

Hardware Requirements

• IVD Level III; IBM InfoWindow; Ultimedia or M-Motion; Sony View 5000 or Sony SMI 3082; VideoLogic MIC 4000.

Description

• Components of this program include: Identifying Problems, Generating Alternatives, Evaluating Alternatives, Reaching Decisions and Choosing Strategies. This module improves an individual's skills in utilizing effective decision making skills. It reviews and compares information, locates decision areas, consults and researches, lists options, specifies criteria, lists pros and cons, carefully examines facts, interprets available data, considers feasibility and communicates with those affected.

Cost

• Call for Pricing

Manufacturer

• Wilson Learning Corp.; 7500 Flying Cloud Dr.; Eden Prairie, MN 55344; (800) 328-7937

Decisiveness: Reaching Conclusions

Hardware Requirements

• IVD Level III; IBM InfoWindow; Ultimedia or M-Motion; Sony View 5000 or Sony SMI 3082; VideoLogic MIC 4000.

Description

• Components of this program include: Taking the Initiative, Giving Opinions, Making Rapid Decisions, Defending Decisions & Taking Risks to Achieve Results. This module improves an individual's skills in utilizing effective decisiveness skills. It resolves problems by action, improvises and changes priorities independently, expresses ideas on issues, supports opinions with data, uses information at hand, avoids undue hesitation, concentrates on the issues, uses structured techniques and weighs risks against outcomes.

Cost

• Call for Pricing

Manufacturer

• Wilson Learning Corp.; 7500 Flying Cloud Dr.; Eden Prairie, MN 55344; (800) 328-7937

Table 7

Advancing Team Performance

System Requirements
- CDI (Compact Disk Interactive) hardware.

Description
- Advancing Team Performance is a compact-disc interactive program. The program is designed to meet the team skill requirements of individuals and groups. The program has a total of 15 lessons, covering five key areas of team development. Alignment provides team members with an understanding of the importance of team vision; how to create a team vision; and supporting a team’s vision to deal with issues associated with conflict resolution. The Change Management feature of this application describes the Passages Model and its relationship to what the team may be experiencing. Team members can manage change by understanding the nature of change; managing emotions related to change; and overcoming team barriers to change. Communication will help team members to identify barriers to communication and learn to more effectively communicate by establishing team ground rules; improving listening skills; and giving and receiving feedback. Problem Solving provides an understanding of a problem-solving process and describes several problem-solving tools. Conflict Management teaches the team how to manage interpersonal conflicts before they escalate into larger issues.

- Call for pricing.

Manufacturer
- Wilson Learning Corp.; 7500 Flying Cloud Dr.; Eden Prairie, MN 55344; (800) 328-7937

Table 8

**Flexibility: Adapting To Change**

**System Requirements**
- IVD Level III; IBM InfoWindow; Ultimedia or M-Motion; Sony View 5000 or Sony SMI 3082; VideoLogic MIC 4000.

**Description**
- Components of this program include generating new perspectives, developing new options, reordering priorities, revising goals and taking adaptive action. This module improves an individual's skills in utilizing effective flexibility skills. It teaches to deliberately look at situations from the opposite view, reexamine one's one point of view after evaluation, list all possibilities, identify current priorities, identify new information that may influence priorities, adjust goals to account for change, alter schedules to meet deadlines, react constructively to criticism, and resolve conflicts productively.

- Call for pricing.

**Manufacturer**
- Wilson Learning Corp.; 7500 Flying Cloud Dr.; Eden Prairie, MN 55344; (800) 328-7937

*Taken from: Multimedia Today, Vol. II, Issue I - 1994*
Table 7

Interpersonal Relations: Interacting With Others

System Requirements

• IVD Level III; IBM InfoWindow; Ultimédia or M-Motion; Sony View 5000 or Sony SMI 3082; VideoLogic MIC 4000.

Description

• Components of this program include developing/maintaining rapport, listening to others, displaying sensitivity, eliciting ideas and feelings, and presenting feedback. This module improves an individual's skills in utilizing effective interpersonal relations skills. It teaches to show interest in others, be supportive in their manner, rephrase to show understanding, attend to implied messages, respect privacy, express a willingness to listen, ask open-ended questions, discuss issues rather than people, request input and be specific and solution oriented.

• Call for pricing.

Manufacturer

• Wilson Learning Corp.; 7500 Flying Cloud Dr.; Eden Prairie, MN 55344; (800) 328-7937

<table>
<thead>
<tr>
<th>Hardware Requirements</th>
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</thead>
<tbody>
<tr>
<td>IBM PC or PS/2; 512K of RAM; DOS 2.1 or later.</td>
<td>IVD Level III; IBM InfoWindow; Ultimedia or M-Motion; Sony View 5000 or Sony SMI 3082; VideoLogic MIC 4000.</td>
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<tr>
<th>Description</th>
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<tbody>
<tr>
<td>Part I of The Business Disk simulates the first six months of crucial decision making involving business formation. The interactive nature of the disks turns the tasks of teaching and learning into an exciting experience. The kind of business, its location, the organizational structure, insurance coverage, advertising, income requirements, employee issues, start-up capital requirements and community relations are some of the issues encountered. Live action, animation, illustrations, graphs and slides make the learning process clear and enjoyable. Every decision that is made is stored by the computer and is figured into later events that occur in Part II, one year of business operation.</td>
<td>The Versatile Organization is a high-quality interactive videodisc course that engages participants in realistic situations using interpersonal skills. System Orientation explains the operation of the videodisc system and gives an overview of the program. Introduction to Social Styles acquaints users with the basic concepts of assertiveness and responsiveness and introduces the social style grid. Social Styles Identification, Expectations and Versatility helps users understand the value of recognizing patterns of human behavior. Social Styles &quot;Backup&quot; Behaviors presents enactments of the four social styles as they tend to behave in conflict situations. Users are introduced to strategies that can be used in dealing with conflict, as well as self-management techniques. Social Style Simulation &quot;Game&quot; involves participants in a real world business simulation involving 100 different social style interactions.</td>
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<tr>
<th>Cost</th>
<th>Cost</th>
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<tbody>
<tr>
<td>Free to qualified sites.</td>
<td>Call for pricing</td>
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<tr>
<th>Manufacturer</th>
<th>Manufacturer</th>
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</thead>
<tbody>
<tr>
<td>Maryland Interactive Technologies (MITEC); PO Box 1054; Reisterstown, MD 21136 (800) 526-0526.</td>
<td>Wilson Learning Corp.; 7500 Flying Cloud Dr.; Eden Prairie, MN 55344; (800) 328-7937</td>
</tr>
</tbody>
</table>

References


Thurber, Barton D.; Macy, Gary; & Pope, Jack. (1991) The Book, the computer and the humanities; creating an interactive technology to teach the humanities. THE Journal (Technical Horizons In Education. Vol. 19; No. 1; pg. 57; August, 1991.
