ABSTRACT The ambiguous nature of the school environment requires principals to have leadership skills that focus on the purpose of school. Case studies are being used more often as an instructional method in the preparation of school administrators because they encourage the development of critical thinking skills and develop systematic problem solving skills needed for the good school administrator. This study showed a very different result in both the identification of the problem and the solution over the traditional case study method when using an Electronic Meeting System (EMS). The results have implications for school administrator preparation programs.

Introduction
Both law and business schools have a long and extensive tradition of using cases to prepare future members of their professions. The use of case studies to prepare principals as school administrators has not nearly so long a tradition (Merseth, 1991). Current efforts to improve the preparation of prospective school administrators often include the use of case studies as an instructional strategy. The case study method provides actual situations in which participants can refine problem solving skills. The school reform movement or, as Fullan (1996) terms it, school reculturing, requires that administrators develop skills that can assist them and their staff in implementing changes that benefit students. A closer alignment between theory and practice in the developmental programs for school administrators has many advocates. Culbertson (1964) pointed out the discontinuity between the study of administration and practice. The results of a 1984-85 national survey in the USA of the status of school administration preparation advocate a closer alignment of theory to practice; since then most university programs have changed emphasis. The survey found that most preparation programs concentrated on procedural issues rather than
on ethics and leadership issues. The survey also reported that a shift in priorities was underway and predicted that future preparation programs would focus on improved instruction, field experiences, evaluation procedures, and interagency coordination (Gousha, 1988). In recent years, principal preparation programs provided by universities have changed emphasis to link theory to practice. Using case studies is another way to link theory to practice.

The 1987 report of the National Commission on Educational Administration (Leaders for America’s Schools, 1987) recommended that preparation programs for school administrators should be more like those in professional schools that emphasize theoretical and clinical knowledge, applied research and supervised practice. The relevance in professional preparation programs is not unique to the study of educational administration. Schön (1987) described the “rigor of relevance” in all professional schools (p. 42). Criticism of professional training programs has often focused on the remoteness of the academic programs from the problems in the field. The passive nature of most instruction and the failure to present theoretical constructs in ways that are meaningful to students and practitioners continue to be a problem in preparation programs. The use of case studies as an instructional method is directed to solving the problem of teaching theoretical constructs in ways that are meaningful.

Case Studies and Leadership Preparation

The public school principal of today needs to develop skills in group decision making. Group involvement is a necessary condition for site-based and total quality management. Best and prevailing practice increasingly involves collaborative methods and group consensus building and/or includes involvement of various interest groups, or representatives of groups, in educational decision making. Much of this will take place in meetings.

Professors using the case study method to prepare school administrators probably believe that the use of case studies assist in the development of skills essential for good school leadership. Generally, it is thought that through the use of case studies participants acquire analytical skills and the ability to think clearly in ambiguous situations (Merseth, 1997). Students learn to synthesize information, which helps conceptual development. The case study method helps develop mature judgment and encourages students to examine their value system and test that system against the law and others’ expectations. Using the case study method helps develop communication skills related to listening to others, seeing divergent points of view, speaking and writing clearly, understanding oneself and the use of imagination and intuition.
The case study method requires that participants be reflective at each step in the process. Thus, the procedure is not one that is linear but rather is dynamic and open to the restatement of the initial problem if necessary. This is essential in that limiting problem solving by following rigid, static steps may result in the wrong problem or the supporting problem being identified. Finally, since the method is dynamic, it requires time to use effectively. The case study method holds the possibility that if used effectively, students “... will grow in their understanding of the complexities of concepts and issues” (Wasserman, 1994, p. 11). But does the case study method meet the needs in preparing the candidates for the role of principal?

The answer to those of us who use the case study method in preparing future school administrators is that there are doubts about its effectiveness. Often, students observed using the case study method identify the problem and the solutions with superficial results. Using the case study method means accepting that there are no right solutions; however, there are better solutions than others and hopefully even better future solutions. Many of the reasons for the inadequate response from using the case study method can be found in the theories of groupthink and escalating commitment (Nelson & Quick, 1997). Group dynamics tend to guide the quality of the identification of the problem and the subsequent solutions. There are also disadvantages if there is pressure within the group to conform or if there is a forceful member or dominant clique that dictate decisions. Strong, vocal, and possibly the least knowledgeable people can become the most persuasive in the process. Once a direction has been taken, as inappropriate as it may be, more and more resources, including time, get directed toward the inappropriate result.

When using the case study approach, one case that was particularly troublesome for students was that of a recalcitrant secretary. The case was based on an actual situation and the instructor, but not the students, knew the outcome and the process used to correct the situation. The case was about a school principal who had recently been assigned by the superintendent of schools (the chief education officer for the school district) to a dysfunctional high school with a mandate to establish an improved school. The principal was an experienced school administrator and was able to create a very much improved school environment. One area where the principal had continuous difficulty was with the relationship and the performance of a recalcitrant secretary. A caveat in the case was the superintendent’s instruction to the principal that he was not to do anything to upset the secretary because she was the new president of the secretary’s association in the school district.

This case was used in a traditional manner that will be described later. Groups of five or six students were used over a period of four semesters for a total of 24 times. On all occasions, the student groups identified the secretary as the problem for the case. The groups identified some punitive
measures of progressive discipline as a solution, from reprimand to firing the secretary.

The students did not identify the systematic leadership problems that had allowed the secretary’s behavior to become so obnoxious. The possibility that the case may not have been written properly prompted the author to ask six experienced school principals (who were identified by their superintendents as successful) to read the case and react by identifying the problem and the solution. All six principals identified the main problem as the lack of leadership and support from the superintendent.

When the opportunity to use an alternative form of meeting environment known as Electronic Meeting System (EMS) became available, it seemed reasonable to use the case of the recalcitrant secretary to further explore the analysis process used by the students. Through the use of this technology, future administrators could be given the opportunity and the support for issue identification and prioritization procedures in a way which facilitates achievement of group consensus.

The Electronic Meeting System

The Electronic Meeting System (EMS) is computer-based technology that provides effective tools to generate more productive meetings. These hardware/software combinations, commonly known as EMS, have begun to find their way into a variety of educational environments (Aiken & Riggs, 1993).

The EMS used for this study was located in a computer laboratory setting. Its purpose is to facilitate decision making in meetings, and to ensure that meetings avoid groupthink and escalating commitment. The technology of the EMS is designed to improve the productivity of many collaborative planning and decision making processes (Research Institute for Computing and Information Systems (RICIS, 1994). Through the use of this technology, group involvement in decision making can be accelerated.

Nunamaker et al (1991) have presented a strategy for understanding EMS processes, focusing on the characteristics of the group to be involved in the process, the tasks to be completed, the context of the organization and culture, and the outcome to be achieved. These items provide a framework for evaluating and understanding this and other examples of EMS and also establish an organization for a research agenda on system use (Spuck et al, 1994).

The Study

The study used the case of the recalcitrant secretary as described earlier as a basis to create a decision making situation. The purpose of this study was to compare the use of the EMS and a traditional case study method in
identifying problems and solutions. Specifically, three questions were addressed:
1. Can this technology improve the analysis of a case study, particularly in identifying the problem and developing quality solutions?
2. Is there any significant difference in the level of analysis with students using the traditional approach and those using the EMS?
3. Does the EMS allow a greater depth of analysis defined by the understanding of the problem?

The participants were university students who were enrolled on a course called ‘Principalship’, which formed part of graduate classes in educational leadership. There were 39 students in the group, of whom 13 volunteered to use the EMS. The laboratory had 16 computers (two were not working); 13 were available to students and one computer was used by a lab assistant who was there to facilitate the use of the equipment as well as guide the students through the process. The remaining 26 students were grouped into five groups, with five or six students in a group. These five groups had the same case and were to follow the traditional procedures for the case study method as outlined below. These groups were to be compared if the resulting identifications of the problem were similar.

The students had become familiar with the use of cases and were accustomed to the following procedure. Their tasks were:
- to take a position after reading the case carefully and outlining the key points;
- identify the central problem and frame it in a sentence or two;
- recognize secondary problems and indicate how they relate to the central problem;
- find supporting information by looking for internal consistency and being careful about assumptions;
- develop alternative solutions and identify forces that enable or restrain and keep the status quo;
- evaluate alternative solutions, subjecting them to scrutiny. Use a T-account to give a visual representation by listing in columns the advantages and disadvantages of the solution;
- list the activities, identify responsible parties, present a timeline, and state the measures of intended outcomes to be used;
- select the alternative most likely to solve the problem or bring about the desired change, or suggest a better option;
- create an implementation plan, including a method for adjusting it if needed.

For the purposes of this study, the EMS group of students used an approach based on the Nominal Group Technique (RICIS, 1994). Other approaches can be used and in some corporations the system is used from various and remote distances (Nelson & Quick, 1997). The Nominal Group Technique approach is a refinement of brainstorming that focuses on generating
alternatives and choosing one. This approach is recommended where group members fear criticism or need to be anonymous. The following steps were taken: members silently list their ideas; all ideas are listed on chart with discussion allowed for clarification but no criticism; and finally a written vote is taken (Van de Ven & Delbecq, 1974). This process encourages members to pool their judgments in order to solve the problem and then determine a satisfactory course of action.

The group using the EMS used the following agenda:

1. Introduction
2. Identify the problem
3. Determine agreement
4. Generate solutions
5. Identify the most important problems
6. Determine the advantages and disadvantages of the identified problem
7. Plan for implementation.

The actual agenda turned out as follows:
- Introduction to the EMS lab by a professor and a lab assistant (30 minutes).
- Identify the problems the principal confronted in the case and categorize the problems (30 minutes).
- Determine agreement and identify the crucial/important problems using a consensus process. Fifteen problems were agreed on but not ranked in order (60 minutes).
- Determine agreement (vote) on the rank order list of these problems. (30 minutes)
- Generate solutions and categorize them, then generate suggestions/solutions to overcome problems (for the top 5 problems). (30 minutes)
- Identify the most important problems. Vote to identify the two most important problems, then review the solutions (30 minutes).
- Identify advantages/disadvantages and categorize them. Identify the advantages/disadvantages of implementing each solution (30 minutes).

Total time: 4 hours.

Results

Using the traditional method, the five groups of five or six students again identified the secretary as the problem and as a solution recommended punitive action and progressive discipline. All these groups finished the task within an hour, compared to the EMS group which took four hours.

The group of 13 graduate students using the EMS identified 61 problems. The 61 possible problems had many similarities about them and an attempt to group them together into categories was not successful. To try and get agreement on the identification of the problem that the case
presented, the students were asked to vote to narrow the selection to the top 15. The group was then asked to list the 15 voted in order of priority. The EMS software displayed the sum of the rank ordering and the mean as well as the standard deviation from the mean. The ballot showed that most of the students identified the main problem as the lack of support from the superintendent but the result was not significant.

The significance level is found by the EMS program by calculating the consensus threshold using Ventana’s Coefficient of Consensus (VCC). The value of 1.00 represents complete consensus and the value of 0.00 represents no consensus. The VCC = 1.00 \((\text{STD}/ \text{high limit} - \text{low limit}) * 2\)

To understand the value of VCC, 1.00 represents complete consensus and 0.00 represents no consensus. In the vote described above, the VCC resulted in a significance level of 0.18, which showed little consensus. The lab assistant then narrowed the choices to five and the students voted. This time, the VCC was calculated at 0.26, which again showed no significant agreement among the graduate students in the decision making lab.

The next step in the process was to generate solutions. Each of the five problems identified was presented for solutions. The graduate students in the decision making lab created 45 solutions for problem one, 15 solutions for problem two, 11 solutions for problem three, 11 solutions for problem four, and nine solutions for problem five. After identifying solutions to the problems, the students were asked to vote again on the critical problem. The students were then directed by the professor and lab assistant to brainstorm on the advantages and disadvantages of the various proposed solutions for the problems. The generated lists of advantages and disadvantages then needed to be sorted.

The result using the EMS more closely followed the analysis of experienced school administrators. This 4-hour session produced a very different result than that obtained using the traditional method for case analysis. Although the assumption is that the EMS helped to produce a different result, one needs to be aware that other conditions could have caused this result. The EMS group took longer to examine the case than during the normal routine. The unique composition of the 13 students could also have been a factor, as well as the size of the group.

Some Problems using the EMS

Using the EMS can be more time-consuming than using the traditional method of working in a group on a case study. The groups not using the EMS finished their conclusions much earlier than the EMS student group. The anonymous nature of the meeting can also encourage frivolity and distract others from the task, although some humor does add to the meeting. Students would sometimes comment aloud on some of the ideas presented. Another problem with anonymity is that it encourages
irresponsibility and the lack of accountability has ethical implications. Educational settings cannot be anonymous because they frequently require public accountability. Using the EMS is and can be fun; hence, the need to be careful of the ‘halo effect’ which singles out one trait and uses this to make judgments about other measures (Hellriegel et al, 1992).

The Advantages of Using the EMS

There are also several advantages to using the EMS over the traditional case study method that should be noted. There is what at first seems an overwhelming amount of data that is produced, which is sorted using the EMS system. The variety of ideas makes the groups’ work more focused on solving the problem rather than defending a solution. Olaniran (1994) observed that using electronic brainstorming produces significantly more fresh ideas. The use of the EMS allows the calculation of data to be produced by the system and the results are available throughout the meeting as well as in the summary at the end of the session. A complete record of the meeting is available for analysis at the end of the meeting. All participants can input their ideas simultaneously. Equal participation by all group members can be provided. Large groups can work together to provide more information, knowledge and skills to work on the task.

The EMS presents ideas without identifying who put them forward. This encourages members of the decision making team to think and create solutions rather than playing the politics of supporting an ally or friend. Nelson & Quick (1997) report that the Boeing Company study of its face-to-face meetings found that 20% of the team members did 80% of the talking. Using the EMS frees members’ participation and relationships become less important as the focus is on determining the best result. Although time can be considered a liability, it can also become an asset when using the EMS, particularly for certain decisions and when used in different ways.

Conclusions and Discussion

The students’ identification of the problem when using the EMS system focused on the superintendent and his/her lack of support for the principal in handling the difficulty with the secretary. The other five groups of five or six students identified the problem as being a difficult secretary and the need for the principal to proceed with progressive discipline. The EMS students focused more on the problem of lack of leadership in the organization and the relationship between the principal and the superintendent. It should be noted again that there is no one correct answer when using the case study approach, because a case reports the author’s bias, not all the details are provided and the assumptions that the students
make in determining the analysis cannot be controlled. The differing outcomes when using the traditional case study method and when using the EMS suggest that there are better ways of identifying the problem. The EMS students identified a different problem, and so their solutions were different. Principals need to be able to identify the right problem if they are going to provide good leadership (Cuban, 1988).

In summary:
1. The EMS technology can help improve the analysis of a case, particularly in identifying the problem and the solutions.
2. There was a significantly different level of analysis when students used the EMS. It took a great deal more time and generated many more possibilities for the problem and hence for the solutions. In their analysis of the case, students using the EMS identified a problem which differed from that identified by the students using the traditional method.
3. The students using the EMS showed significantly greater depth of analysis, defined by the understanding of the problem and evidenced by the volume of suggestions for the problem and the solutions that were accumulated by the EMS.

As was observed, the case study method is often used in a superficial manner and resulted in the identification of problems and solutions that are inappropriate for a school environment. Students tend to look for a right answer and were likely to focus on surface problems rather than underlying problems. Thus, the solutions would ultimately not solve the root of the problem and were unsatisfactory for the school setting. The awareness of these obstacles when using the case study method makes it necessary to look at what has been found in research. It creates a need for more study and analysis on the reasons for the different outcomes and more study as to why the process of using the traditional case study method produced more superficial results.

Issues and problems occurring within schools are becoming increasingly complicated and require more innovative solutions. The preparation of administrators continues to focus on developing systematic decision making skills. These strategies have come out of a business model. While some of the activities school leaders engage in are similar to those found in business, the more critical areas that administrators are required to address deal with individuals; both staff and students. Therefore, the factors that need to be considered in decision making become more complex (Sergiovanni, 1996). Case study methods as adopted from law and business schools need to be re-examined as a method of instruction for use in the preparation of school leaders.

The EMS approach, used with a case study for preparing future principals, was thought to be helpful in the process of preparing a more reflective school principal. Through the use of this technology, future administrators are given the opportunity and the support for issue
identification and prioritization procedures, which facilitates achievement of group consensus. An immediate feedback and real-time results are positive features of using the EMS. The importance of having a complete record of the meeting is a distinct advantage of the EMS. Both the entries and the process are recorded and are available for analysis.

Some decisions are better suited to the use of the EMS. The EMS would best serve decisions that tend to be very emotional or those that require expedient action. Decisions that will result in hurt feelings and poor relationships, causing an organization to become dysfunctional, could be best served by the EMS. Decisions that need to be made avoiding the groupthink phenomena can be made using the EMS. Meetings that require new or better solutions that can be best achieved using brainstorming have the advantage of simultaneous input using the EMS. The importance of rapid polling on decisions is important for decision making that requires immediate feedback and real-time results. Decisions that require planning and sophisticated levels of problem solving with task assignments can benefit from the EMS. With this system, computer support is available for problem identification and prioritization procedures, which supports the achievement of group consensus.

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