THE USE OF SITUATIONAL LEADERSHIP THEORY

TO ENHANCE LEARNING IN HIGHER EDUCATION

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Table of Contents

Abstract

Situational leadership theory is a management-based model that has recently been studied (Bogert, 1986) as a means for examining and describing teaching styles in higher education. The authors of the situational leadership model (Hersey & Blanchard, 1972) propose that managers possess a range of styles and can vary their style in response to the environmental variables they encounter. Further, the theory maintains that managers can learn to improve their management capabilities through an understanding of the theory itself (Hersey & Blanchard, 1982, p. 171-2). This study attempted to examine this claim in an educational milieu. Specifically, the project considers whether the style flexibility and style effectiveness dimensions of a teacher's style profile increase as a result of the teacher learning about the theory itself.

To increase an individual's style range is a long-term undertaking, and as predicted, no increases in the style range scores were noted. In addition, the results of this study show that there were no significant increases in the style effectiveness scores of the teachers who were in the treatment group.

The two problems that were encountered in attempting to complete this research may have precluded any change in the effectiveness scores. Firstly, a single teaching style profile is not necessarily representative of a teacher's general capabilities. A number of classes should be surveyed to obtain a better idea of a teacher's "real" style range. The style profiles may be considered analagous to snap shots in a family album. Many snap shots over a period of time are more representative of an individual, and the changes in that individual, than is a single photo. Similarly, a portfolio made up of a number of teaching style profiles over a period of time would be a better indicator of a teacher's ability to apply the situational leadership model. Secondly, although the treatment group of faculty received information about the model at a workshop, this was a single session of only three hours. It is now apparent that more time is required for faculty to learn about the model in sufficient depth, to be able to apply it in their teaching.

It is recommended that a longitudinal study, over a period of at least three years, should be done to develop teaching style portfolios. These portfolios would contain several teaching style profiles from different classes over a period of time. An analysis of the portfolios would be a better indicator of any changes in the style range and style effectiveness scores.

Acknowledgements

Introduction

The situational leadership model was derived from management and organizational studies where it was presented as a framework for examining the leadership styles of managers. Recently, this model has been studied, and has been shown to be useful in an educational milieu (Bogert, 1986). The purpose of this study is to examine the application of situational leadership theory in education as a means of improving student/teacher interactions and ultimately of enhancing the learning process. Specifically, the project will consider whether the style flexibility and the style effectiveness dimensions of a teacher's style profile increase as a result of the teacher learning about the theory itself.

This report contains an overview of some of the pertinent literature that provided the theoretical basis for the study. A brief summary of the situational leadership model has been included in this literature review. The Results and Conclusions follow the Methodology section that outlines the procedures used in this study. A Summary and Recommendations section highlights the salient points of the research project.

Literature Review

In the management literature, situational leadership theory (situational leadership model, Hersey & Blanchard, 1982) has been presented as a behaviourally-based, yet relatively simple theoretical framework for examining the leadership styles of managers. The theory proposes that effective managers possess a range of styles and can vary their style in response to the environmental variables they encounter. Further, the theory maintains that managers can learn to improve their management capabilities through an understanding of the theory itself (Hersey & Blanchard, 1982, p. 171-2). In order to bridge the gap between the theoretical and the practical, these authors have developed the Leadership Effectiveness and Adaptability (LEAD) Questionnaire. This questionnaire was developed to measure several leadership style parameters of managers. Thus, the situational leadership model has been presented by its authors as a practical tool that managers can learn to use to improve their performance.

Some authors (Sergiovanni, 1979; Fiedler, 1979) have claimed that the model is an oversimplification of any real situation that a manager may encounter. However, the simplicity of the model can be regarded as an advantage for it can be easily learned and applied by a variety of people. An additional advantage is that the model is based on a follower's observable behaviours or "task-relevant maturity" level. A knowledgeable leader/manager or teacher can then respond in an appropriate manner to the follower's behaviour. These features of situational leadership theory make it potentially useful as a tool for teachers.

Several studies have examined the application of situational leadership theory to the educational milieu; however, these studies have focused primarily on the styles of educational administrators (Clark, 1981; Edman, 1982; Weston, 1979). The application of this theory to the teaching/learning environment has been very limited (Bogert, 1986; Boucher, 1980; Greenfield & Andrews, 1961; Salter, 1983; Saucier, 1984). The most recent study by Bogert (1986) uses situational leadership theory as a theoretical framework for the analysis of teaching

styles at the CEGEP level. In this study the author has developed the theoretical link between managers and higher education teachers, in terms of their activities, the skills that are required and the structures within which they work. A questionnaire that parallels the LEAD, the Teacher Effectiveness and Adaptability Description (TEAD), was developed in this study. Since teachers often feel that they must choose between emphasizing course content and developing the student as an independent learner, a situational leadership model may provide a solution to this dilemma.

The present study examines the Hersey and Blanchard claim that leaders, in this case teachers, can learn to improve their management capabilities, in terms of the style range and style effectiveness components, through an understanding of the theory itself.

Summary of Situational Leadership Theory

The major concept of the situational leadership theory is that leadership is made up of two components: a task accomplishment dimension (horizontal axis) and a relationship behaviour dimension (vertical axis). Combinations of these two dimensions produce four leadership styles (Figure 1). As the success of the task becomes more immediate and important, the emphasis is on telling subordinates what to do and how to do it (low relationship/high task). A sports team would best represent a high relationship/high task situation where neither component dominates the other. Team members must respect and support each other towards the common goal of winning the game. A country club atmosphere depicts the high relationship/low task quadrant while "impoverished" was the term used to describe the final quadrant, low relationship/low task behaviour. Hersey and Blanchard (1972) concluded that this two dimensional model implied that there is no one best leadership style for all circumstances and that the interaction between task and relationship must be considered as a significant variable.

From this concept of variable leadership styles, the situational leadership theory evolved. It placed emphasis on the behaviour of leaders in relationship to their followers. In situational leadership theory, "task-relevant maturity" is considered in terms of a follower's ability and willingness to perform a given task. There are four maturity levels M_1, M_2, M_3 and M_4 (Figure 1) that range from low to high task-relevant maturity. A follower who is unable and unwilling to complete a specified task is demonstrating a low, M_1, task-relevant maturity. The leader should respond with a "directing" leadership style that emphasizes the task component. The maturity of the followers then becomes a primary consideration in the selection of the "best" style. Good leaders must assess a situation and adapt their leadership behaviours accordingly. Consequently, the effectiveness of leadership styles is indicated as a curvilinear relationship on Figure 1, rather than as a straight line. As the subordinates' maturity increases, beneficial leadership requires less structuring relative to the task and less interpersonal interaction (Figure 1). This develops responsibility and independence of the subordinate or follower.

2

Relationship
Behavior
(Consideration,
Concern for
People)

low

| High Relationship Low Task Quadrant III "PARTICIPATING" | High Task High Relationship Quadrant II "SELLING" |
| Low Relationship Low Task Quadrant IV "DELEGATING" | High Task Low Relationship Quadrant I "TELLING" |

low ◄――――――― Task Behavior ―――――――► high

(Initiating Structure or Concern for Production)

MATURITY CONTINUUM

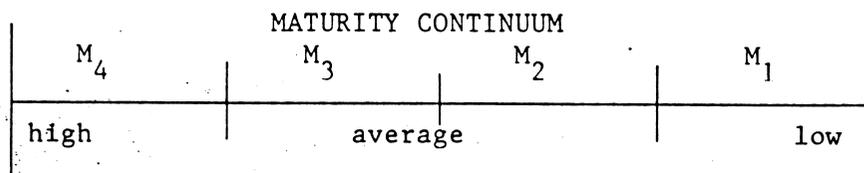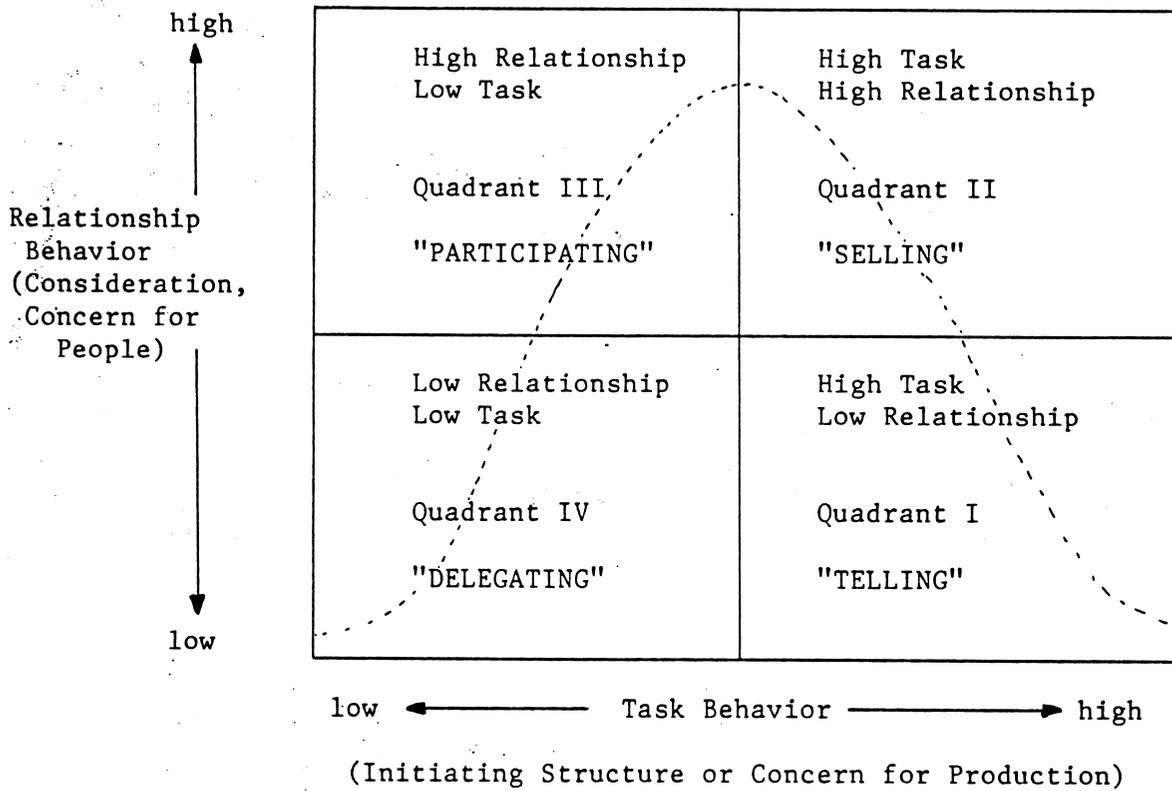| M_4	M_3	M_2	M_1
high	average		low

Figure 1 - Integration of Life Cycle Leadership Model, Maslow's

Hierarchy of Needs, and Maturity-Immaturity Continuum.

(Hersey & Blanchard, 1982, p. 248)

A familiar illustration of the theory is the parent-child relationship. Parents provide a lot of structure for young children, telling them what to do and how to do it (quadrant 1, Figure 1). As the child matures, there is an appropriate decline in the structuring by the parents and an increasing acceptance by the offspring of responsibility. "Experience shows that if the parents provide too much relationship before a child is somewhat mature, this behaviour is often misinterpreted by the child as being permissive" (Hersey and Blanchard, 1972. p. 135). Young teenagers who have earned the trust and respect of their parents, but who actively seek their advice would have progressed to quadrant II. As individuals move to high school or college, they begin to seek and accept more responsibility for their own behaviour. They rely on parental support of an emotional nature but control the structuring of their lives themselves (quadrant III). When young adults leave home to make their own living, start their own family, and accept full responsibility for their actions, a decrease in parental support is appropriate (quadrant IV). Parental (supervisory) behaviours associated with quadrants I through IV are "directing", "coaching", "supporting" and "delegating" respectively (Blanchard, Zigarimi & Zigarimi, 1985). When parents are unable to modify their behaviour at the appropriate developmental stages, serious conflicts between parent and offspring are likely to result. Some parents are reluctant to allow their offspring to become independent, while others promote too much independence and responsibility too early. An inappropriate leadership style on the part of the parent can be detrimental to a child's development and ultimate maturity.

In higher education, CEGEP students have a broad range of abilities with respect to any task that must be completed. Thus, in situational leadership terms, they possess a wide range of task-relevant maturity levels. Teachers who are knowledgeable about the theory can assess the student's behaviours and respond with the most appropriate style.

This model emphasizes the need for flexibility of leadership styles in management and education. Effective leaders must be able to assess the variables and apply the theoretical principles to the particular situation. Even if a leader is an accurate diagnostician, someone who lacks the skills and flexibility to vary his or her style would be ineffective.

Figure I depicts the dual nature (task and relationship) of leadership and shows that task-relevant maturity of the followers is an essential consideration. The "bell-curve" line indicates the most appropriate task/relationship behaviour combination to provide effective leadership. The flexibility of a supervisor to employ a variety of leadership styles cannot be overemphasized.

Questionnaires

The LEAD questionnaire, that was developed by Hersey and Blanchard (1972) to assess a leader's style, evaluates three style dimensions. In the event that a leader has a preferred style, this will be identified as the dominant leadership style. Secondly, a leader's ability to utilize the four styles of the model is designated as the leader's style range or style flexibility. Thirdly, a style adaptability or effectiveness score indicates if, according to the model, the leader is responding to the followers with the most appropriate leader style. The three style parameters

that may be determined by this questionnaire then, are the preferred or dominant style, the style range and the style effectiveness or adaptability. These three dimensions will be referred to collectively as the style profile. It appears that the LEAD is sufficiently management-oriented that students would have difficulties in making predictions about their instructor's behaviour or style. An analogous questionnaire, the Teacher Effectiveness and Adaptability Description (TEAD), that is based on situational leadership theory, has recently been developed to determine teaching styles in higher education (Bogert, 1986). It is this TEAD questionnaire that was used in this study to assess teaching styles.

Methodology

Since the TEAD questionnaire is presently available only in English, faculty from the Anglophone colleges in the Montreal area were contacted and invited to participate in the project. The teachers who volunteered to participate represent a variety of disciplines, teaching backgrounds and years of teaching experience. The faculty participants selected one or more classes (6-40 students) from whom they wished to receive information about their teaching styles. The students were mostly 16-22 years old, and were enrolled in a variety of CEGEP programs. In the fall semester (1987) all volunteers' classes were visited by the researcher and the data were collected. See the following subtitle that outlines the classroom procedure that was followed for the data collection The data were analyzed and teaching style profiles were prepared from the class data for the teachers.

In January (1988), about half of the faculty participants, selected in a random fashion, were invited to participate in a half-day workshop. The workshops exposed the faculty participants to the situational leadership model. The participants also received feedback from their classes in the form of a teaching style profile (Appendix III) . The information presented in the teaching style profiles permitted the teachers to compare their own responses from the TEAD questionnaire with the data from their class for all three style dimensions. These profiles outlined three style dimensions : the preferred or dominant teaching style, the teacher's ability to use the four styles of the model, and the effectiveness of the selected style in the situations described. These teachers who attended the January workshop were considered to be the **treatment** group. The teachers were tested after the workshop to determine their knowledge about the theoretical framework. (All participants had been tested for their knowledge about situational leadership theory at the time of the classroom visits). The other teachers received no information in January and were considered as the **control** group.

A class, parallel to that sampled in the fall semester, was visited in the spring semester (1988), to distribute the TEAD questionnaires and collect data from both students and teachers. All teachers were again tested to determine their knowledge of the situational leadership model. Once more, teaching style profiles were prepared from the data, and workshops were scheduled for teachers in the control group. Teachers from the treatment group requested follow-up workshops to further discuss the model and their style profiles.

An initial analysis of some of the data from the treatment group showed that many of the teachers had forgotten some of the information presented in the January workshop. In an

attempt to improve participants' retention of this information, a second workshop format was devised for the May sessions. It was anticipated that this project would be extended for a second year and that a better workshop format would then be able to be determined. The project was not supported for the second year as had been requested; therefore a comparison of the workshop formats has not been possible.

Data Collection Procedures

After the teacher introduced the researcher to the class, he or she left the room to complete the teacher's version of the questionnaire (TEAD-Self). At this time the teachers also responded to a quiz that had been developed to assess their knowledge of the situational leadership model. In the classroom, the students were told the following.

Your teacher has volunteered to participate in this project that is examining the teaching styles of CEGEP teachers. Your participation is essential and you are now being invited to participate in the project. Your involvement will require about twenty minutes to answer a questionnaire. This questionnaire asks you to predict how your teacher would respond in sixteen, hypothetical student-teacher situations. As your teacher may be making decisions about his/her teaching, based on the data collected, I would encourage you to be serious.

There are two things I would like to emphasize. Firstly, this is not a teacher, nor a course evaluation. Secondly, all data collected are completely confidential. Your teacher will never see your answer sheets, so you can afford to be completely open, honest and candid in your response to the questionnaire. Your teacher will receive only a summary of the data collected. This information is not being collected for the college administration, so you do not need to worry about any consequences for your teacher.

Questionnaires and answer sheets were distributed, and the directions at the top of the questionnaire were reviewed. As students finished, both the questionnaire and the answer sheet were collected. The students were thanked for their participation and their questions were answered before the researcher left.

Objectives and Hypotheses

1) To determine if knowledge about the situational leadership model enables faculty to respond more effectively in the teaching/learning milieu.
    Hypothesis 1 - Hersey and Blanchard indicate that to increase a leader's style range is a long-term, difficult undertaking. Based on the assumption that style range scores represent a teacher's ability to utilize the four styles of the model, it is hypothesized that no significant increase in these scores will result as a consequence of a teacher's increased knowledge about the theoretical model.
    Hypothesis 2 - Based on the assumption that the style effectiveness scores measure a teacher's ability to respond appropriately to student behaviours, it is hypothesized that increased knowledge about situational leadership theory will significantly increase a teacher's style effectiveness scores.

2) To provide faculty with an opportunity to participate in a professional development activity and to learn about a potentially useful pedagogical model.

3) To provide empirical research to support the application of situational leadership in the CEGEP.

Results and Conclusions
A Summary of Teacher's Teaching Styles

The TEAD questionnaire was used to determine teachers' teaching styles. The questionnaire (TEAD-Self) was completed by the teacher while the TEAD-Other was completed by the students. These questionnaires assess three style dimensions:

1) preferred or dominant style(s)
2) style range
3) style effectiveness or adaptibility

The data from this study for these style dimensions have been summarized in tables found in Appendix IV. In these tables each class has been considered as a unit and has been assigned a numeric code for the purposes of identification. These numeric codes are not consecutive since the data have been edited and some of the classes have been deleted. For the purposes of data analysis, only those classes with 10 or more students have been included in this report. Some smaller classes were sampled but since much of the data have been reported as class averages, values for very small groups are not meaningful. Also, only the data from those teachers who taught either the same or similar courses in the two semesters, have been presented. From the edited data, four of the sixty-one teachers had two classes surveyed instead of one. Thus, class numbers 50 and 93 are different classes but the same instructor. The three other pairs of classes are 20 and 102, 38 and 90, and 28 and 97.

Style Preference

Tables 1 through 8 show the preferred style data in different arrangements. Tables 1 to 4 show the data for the treatment group of teachers, while the data for the control group are displayed in tables 5 through 8. Tables 1 and 2 show a comparison of the students' perceptions with those of their instructor for the fall and winter semesters respectively. Table 3 compares the teachers' self perceptions about the style usage between the two semesters, while Table 4 summarizes the students' views for the two semesters. In the winter semester, many teachers failed to answer or return the TEAD-Self questionnaire. As a result, these data are absent in Tables 2, 3, 6 and 7. Tables 5 through 8 are parallel comparisons for the control group.

In Table 1 the teacher's own view represents a single perception of the teacher's style profile while the class mean values represent the views of a number of people. Direct comparisons between these two sets of figures are difficult and likely meaningless. Meaningful comparisons can be made by calculating the standard deviation interval for each of the style values, and then comparing the teacher's score with that interval. When the teacher's score lies within the interval then there is congruency of perception. A lack of congruency exists when the teacher's value lies outside the one standard deviation interval. Since comparisons of student and teacher perceptions is not one of the objectives of this study, these congruency calculations have not been included in this report.

In his analysis of the preferred style concept, Salter (1983), has classified style

combinations and has developed a coding system so that comparisons could be made. He has defined two-style profiles "...in two ways; equal ability in two of the styles or a basic style with a strong supporting style." (Salter, 1983, p. 78). Teacher number 17 in Table 1, with S2 and S3 scores of 6.0 and 4.9 respectively, is an example of the equal ability type of profile. Teacher number 4 is an example of a basic/supporting profile, where the S2 is the preferred style and the S3 is the supporting one. The following style profile codes have been used in the Tables to simplify comparisons. These differ from those used by Salter, due to the prevalence of different style combinations.

STYLE CODE	PREFERRED TEACHING STYLES
1	any single dominant style - ie. S_1 or S_2 or S_3 or S_4
2	S_2 and S_3
3	S_1 and S_2
4	any three styles - ie. S_1, S_2, S_3 or S_2, S_3, S_4
5	all four styles - ie. S_1 and S_2 and S_3 and S_4
6	any other combination of two styles other than code 2, or 3 above.

The student data in Tables 1 through 8 have been recorded as class means. To determine the significance of these scores, one-tailed t tests were completed in a step down fashion between pairs of style scores for each teacher after the basic style was chosen. For example, teacher 17 has, as a basic style, style S_2 (score = 6.0). The codominant style in this case is style S_3 (score = 4.9). The S_1 and S_4 values for this teacher were 2.7 and 2.3 respectively. T test comparisons between the S_2 and S_3 values indicate no significant difference ($p>.05$). However, between the S_3 and S_1 scores there was a significant difference ($p<.05$). Thus, only styles S_2 and S_3 were included as the preferred styles in this teacher's style profile. Styles used to determine the code have been marked with an asterisk (*) in these tables. Style S_2 appears to be the basic or preferred style in the majority of profiles; however, styles S_1 and S_3 are important, highly used styles.

Table 9 summarizes the teachers' preferred or dominant styles showing only the style codes for the two semesters. These data show that 20/34 control groups and 12/31 treatment groups were seen, by the students, as having different preferred style patterns from one semester to the next, for the same teacher. It is interesting to note that there were more changes in the style codes, between semesters, in the control group than in the treatment group. This suggests that teachers may vary not only their dominant style, (ie. from an S_2 to an S_3) but also the frequency with which they use a given style in their interactions with any given class. This notion was supported by comments made by the participants in the workshops. Thus, the style profile appears to depict a specific interaction between the teacher and that particular group of students. The profiles don't necessarily represent the breadth of a teacher's ability in a general way. For example, a teacher may choose to use predominantly an S_1 style with a first year,

introductory level course, but this does not mean that this instructor is limited to this S1 style or that this is necessarily the dominant style.

Table 10, showing the frequencies of the different style profile codes, indicates that most teachers have either a single dominant style (code 1) or a S2-S3 style combination (code 2). These data suggest that most of the teachers have a somewhat limited style range or chose to use a limited style range in their interactions with their students. Again, there is greater variation between semesters in the control than the treatment group with respect to these style codes.

Conclusion - Style Preference

It appears that teachers should be encouraged to survey a number of classes, using the TEAD questionnaire, and obtain several teaching style profile summaries of their interactions with several classes. A teaching style portfolio, made up of numerous profiles, over a period of time, would show a teacher's preferred style(s). The style profiles may be considered analagous to snap shots in a family album. Many snap shots over a period of time are more representative of an individual, and the changes in that individual, than is a single photo. Similarily, a portfolio made up of a number of teaching style profiles over a period of time would be an indicator of a teacher's ability to apply the situational leadership model.

In hindsight, it appears that the research design for this project would have been better if all classes taught by an instructor had been surveyed so that a portfolio of teaching style profiles could have been prepared for each instructor. This would have involved fewer teachers, but the teaching styles of each participant would have been examined in greater depth.

Style Range

The style range value may be calculated by using the following formula, which is similar to the one that was used by Hambleton & Gumpert (1982, p. 241).

$$Style\ Range = 24 - [(4 - S_1) + (4 - S_2) + (4 - S_3) + (4 - S_4)]$$

For an individual whose styles were 16,0,0,0, the style range value would be zero, whereas if the style profile had been 4,4,4,4, the style range score would have been 24. Therefore the style range scale extends from zero to 24, with a value of 24 representing a broad style range. As the style range value for a style profile of 0,0,16,0, would also be zero, it should be noted that this scale gives no indication about a teacher's dominant or preferred style.

Table 11 (Appendix IV) shows a summary of the style range values for the treatment group in both the fall and winter semesters while Table 12 summarizes the parallel information for the control group. These tables includes style range scores from the teachers as well as from the students. It is interesting to note that there is good agreement between the teachers and their students about their ability to use the four styles of the model. In the event that there is a discrepancy, invariably the teacher's own score is lower than that of the students.

The style range scale has been divided into quadrants, and the distribution of the scores has been summarized in Table 13. Most of the teachers are seen, and see themselves in the third quadrant (between 13 and 18). Ideally, only those teachers who have a high style range score (ie. the top quadrant) should be considered for the analysis of the effectiveness scores. If a teacher is limited in her/his ability to use the four styles, then this will automatically reduce the style effectiveness scores, and no changes would be evident, even after instruction about the model had taken place. The data, in some cases, have been insufficient to demonstrate that the teachers have a broad style range or an ability to use all four styles of the model. However, since most of the style range scores are in the top half of the scale, an analysis of the style effectiveness scores has been included in this report.

As an interesting side line, in a comparison of the style range scores from one semester to the next, there was a greater number of participants in the treatment group who registered no change (10 people - see Table 14) in their style range scores. More of the members in the control group (13 people - see Table 14) indicated a positive net change (ie. increase in the style range score) from the fall to the winter semester. When a sum of all the changes for all the teachers within a group was calculated, the value for the control group was +24 (about 2 points per individual) while that for the treatment group was minus 5. More of the control group participants were minimally more positive answering the questionnaire the second time, whereas a greater number of the treatment group were more consistent, registering a neutral response.

Conclusions - Style Range

Hersey and Blanchard indicate that to increase a leader's style range is a long-term, difficult undertaking. As hypothesized (Methodology), there has been no significant increase in the style range scores of the treatment or the control groups. The clustering of the student scores in the third quadrant is likely due to the averaging that was done. In returning these data to the participants, histograms, showing the distribution of these style range scores, were included with the teaching style profiles. The histograms give a better idea of the variability of opinion within a class. These histograms have not been included in this report due to the sheer volume of material.

Style Effectiveness

The third dimension that can be determined from the questionnaire is that of style effectiveness or adaptability. This score is a measure of whether a teacher is responding, according to the situational leadership theory, in the most desirable manner. In this case the scale ranges from a low of zero to a high value of 48. An instructor can receive three points for responding to a situation in the correct manner. A score of 2, 1, or 0 would be recorded for each of the other three style behaviours. Thus, in the event that a teacher responds correctly to all sixteen situations in the questionnaire, a maximum score of 48 may be obtained. However, by responding in the worst way possible in all situations, a low score of zero would be

obtained.

Table 15 summarizes both the teachers' and students' views for the fall and winter semesters about the style effectiveness dimension, while Table 16 shows the equivalent data for the control group. Comparisons of the class scores with those from the teacher (self score) show that in many instances the self score is higher than the class score. However, in most instances the instructor's score is within one standard deviation of the class mean score, indicating agreement between the teacher and the students. An examination of the individual pairs of scores (fall and winter) shows no change in the style effectiveness scores from one semester to the next. This is true for both the treatment and control groups. If any change is to be noted, a comparison of the self scores in the treatment group shows slightly higher values in the winter and a somewhat higher (though not significant) overall average. The data do not support the hypothesis; that increased knowledge about situational leadership theory (treatment group) would significantly increase the style effectiveness scores.

Conclusions - Style Effectiveness

The style effectiveness scores were not higher after the participants had learned about situational leadership. This lack of change may be due to the limited time that was available for the participants to learn about the model. Also, the fact that there was only a single workshop exposing participants to this theory with no follow-up sessions precluded an in depth knowledge of the model. The workshops appear to be a more significant variable than originally foreseen.

Knowledge of Situational Leadership Theory - Quiz Score Analysis

The participants were asked to complete a quiz to determine their knowledge about situational leadership. This was done in the fall and again in the spring during the class data collection period. The treatment group members were also tested immediately following the workshop. Table 17 summarizes the test scores from all three testings. Twenty-nine faculty of the treatment group completed all three tests, while 36 of the control group completed the fall, pretest and the spring quiz.

The mean values for the two testings for the control group show no significant difference ($p = 0.8$). There was a significant difference ($p < 0.05$) in the pre and post workshop scores from the treatment group, indicating that the participants learned something about the model at the workshops. An examination of the spring scores shows that 18 of the 29 participants' scores showed a decrease. It is apparent that more time is required for faculty to learn about the model in sufficient depth to be able to apply it in their teaching.

12

<u>The Workshops</u>

A workshop for the treatment group had been planned to provide faculty participants with some information about the theory, as well as some feedback about the data that had been collected in their classes. These data were summarized in a personalized teaching style profile (Appendix III). However, to understand the information in the profile, approximately half of the three hour workshop was allocated to an explanation of the model and its potential in education.

Since a single workshop could not be scheduled for all participants, five sessions were given in January (1988), which undoubtedly introduced an additional element of variation. A modified lecture format was selected to introduce the content to the participants. This format was chosen to ensure some uniformity of content and some degree of similarity among the workshops. This particular format was not necessarily the best one for content retention. Activities, such as role playing might have helped the participants integrate this model with their pedagogy, but time was a limiting factor. In addition, the single exposure of the participants to the theory without any follow-up sessions was undesirable.

Generally, the faculty response about the model was very positive. Towards the end of the workshop, the faculty were asked: "Could you apply the information from the situational leadership model in your teaching?" Replies of "Definitely!" and "I like the plausibility of the model; it fits my intuitive sense of what is right!" are examples of the comments that were received. The model was seen as a useful framework upon which decisions could be made for better interactions with students. The major concern was about actually applying the theory. Participants lacked confidence in their own ability to implement the theory.

Even though the information the teachers received in their style profiles was of a personal nature, and was potentially, professionally threatening, during the workshops, individuals readily shared information with other participants. The workshops provided faculty with an opportunity to professionally reassess themselves. The workshops were a success!

In general, faculty were supportive of using situational leadership theory in higher education, and they found the feedback to be useful and interesting. As a result of the bulk of information that was presented at these sessions, most teachers wanted time to digest it on their own before organizing an additional seminar. It was the treatment participants who requested a follow-up session for further discussion of the model.

13

Summary and Recommendations

Two major problems were encountered in attempting to complete this research project. Firstly, faculty members explained that they might interact differently with different groups of students. Therefore, although the teaching style profile may reflect their style with a particular group, it was not necessarily representative of their general capabilities. To correct this problem, a number of classes would need to be surveyed with the TEAD questionnaire for each faculty participant. A teaching style profile would be prepared for each class and a portfolio, containing several teaching style profiles, would be created. This would provide a base line for a longitudinal study over several semesters or years.

In January 1988, the teachers in the treatment group were exposed to the theoretical framework for approximately a three hour session. Although the theory is not difficult to grasp, as demonstrated by the post workshop quiz scores, a longer session or perhaps several shorter sessions may have increased the participants' retention of the information about this model. In an attempt to ensure some uniformity, the information about the theoretical model was presented in a lecture format by the researcher. This was not necessarily the best format to use. Since the quiz scores in the post-workshop were somewhat low (average = 69%), it is clear that the depth of knowledge about the model was lacking. It is therefore unrealistic to expect any changes in the effectiveness scores for the treatment group from one semester to the next.

The workshops which exposed the faculty to the situational leadership model appear to be a major problem. This problem was foreseen, and a different workshop format was developed to present the theoretical model to members of the control group. Since the application for continuing this project was rejected, no post-workshop quiz was given in May to determine the effectiveness of the alternate workshop format. Thus, no conclusions can be drawn about the best way to inform instructors about this potentially useful model.

It is recommended that a longitudinal study, over a period of at least three years, should be done to develop teaching style portfolios for a group of approximately twenty teachers. These portfolios would contains a number of teaching style profiles from different classes. The value of the portfolio could then be assessed as a means for describing a teacher's teaching style.

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APPENDIX I

DEFINITION OF TERMS

Definition of Terms

Leadership Effectiveness and Adaptability Description (LEAD) - is a standardized instrument that was developed to measure a leader's style, style range and style effectiveness. There are two versions of this instrument; the LEAD-Self, designed to measure the self perception, and the LEAD-Other, designed to provide leaders with their subordinates' perceptions.

Leadership Style - "is the behaviour patterns that a person exhibits when attempting to influence the activities of others... as perceived by those others" (Hersey and Blanchard, 1982. p. 233). As it is used in situational leadership theory, it is stated in terms of task behaviour and relationship behaviour. The four basic leadership styles may be defined as follows:

S1 (directing) - high task behaviour and low relationship behaviour.
S2 (coaching) - high task behaviour and high relationship behaviour
S3 (supporting) - low task behaviour and high relationship behaviour
S4 (delegating) - low task behaviour and low relationship behaviour

Relationship Behaviour - is "the extent to which leaders are likely to maintain personal relationships between themselves and members of their group (followers) by opening channels of communication, providing socioemotional support, 'psychological strokes', and facilitating behaviours" (Hersey & Blanchard, 1982. p. 96).

Situational Leadership Theory (Situational Leadership Model) - maintains that there are two dimensions to leadership; relationship behaviour and task behaviour. Some combination of these two behaviours defines a leader's style (S1, S2, S3, S4). A leader would use one of these four styles in response to a follower's behaviour that reflects his/her task-relevant maturity (M1, M2, M3, M4).

Style Effectiveness - is the ability to change one's style, in any given situation, so that the leadership style (S1, S2, S3, S4) matches with the follower maturity level (M1, M2, M3, M4).

Style Range (Flexibility) - is the leader's ability to vary his or her style in response to different situations. Style Range should not be confused with effectiveness, as style range represents the variety of styles available to a leader whereas effectiveness reflects a leader's ability to select the appropriate style to respond to a follower's maturity level.

Task Behaviour - is "the extent to which leaders are likely to organize and define the roles of members of their group (followers); to explain what activities each is to do and when, where, and how tasks are to be accomplished; characterized by endeavouring to establish well-defined patterns of organization, channels of communication, and ways of getting jobs accomplished" (Hersey & Blanchard, 1982. p. 96).

Task-Relevant Maturity - "is defined in situational leadership model in terms of job maturity and psychological maturity. These two dimensions refer to a follower's ability and willingness to complete a given task" (Clark, 1981. p. 9). Four levels of maturity may be defined as follows:

> M1 - is low on both ability and willingness,
> M2 - is low on ability but high on willingness,
> M3 - is high on ability but low on willingness,
> M4 - is high on both ability and willingness.

Hersey and Blanchard (1982, p. 151) emphasize that these maturity levels should be considered in relation to a specific task to be performed.

Teacher Effectiveness and Adaptability Description (TEAD) - is a new questionnaire that parallels the LEAD but reflects educational situations, rather than management-oriented situations. Again there are two versions of this instrument: the TEAD-Self, designed to measure the self perception, and the TEAD-Other, designed to provide teachers with their subordinate's perceptions.

APPENDIX II

TEACHING STYLE PROFILE

TEACHING STYLE PROFILE

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PREFERRED TEACHING STYLE(S)

	STYLES		OWN SCORES	CLASS AVERAGES
S_1	TELLING	(DIRECTING)	0	2.7
S_2	SELLING	(COACHING)	9	6.0*
S_3	PARTICIPATING	(SUPPORTING)	6	4.9*
S_4	DELEGATING		1	2.3

Note : An * indicates the preferred style(s), while the numbers
themselves represent the frequency of usage for each style.

==

STYLE RANGE SCORES

OWN SCORE   10

CLASS AVERAGE   16.8
Std. Dev. Value   3.2

Note : Style range scores may vary from zero to 24. Plot your scores on
the scale below.

```
    0           6          12          18          24
    +-----+-----+-----+-----+-----+-----+-----+-----+
```

==
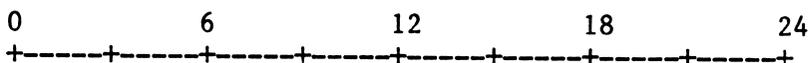
STYLE EFFECTIVENESS SCORES

OWN SCORE   31

CLASS AVERAGE   25.0
Std. Dev. Value   4.1

Note : Style effectiveness scores may vary from zero to 48.
Plot your scores on the scale below.

```
0              12          24          36           48
+-------+-------+-------+-------+-------+-------+-------+-------+
```

==

21
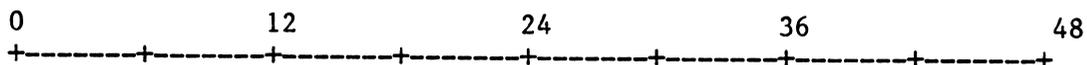
APPENDIX III

DATA TABLES

Table 1

A Comparison of Class and Self Perceptions of Teachers' Use of the

Four Styles as Determined by the TEAD Questionnaire

Treatment Group – Fall Data

| | TEACHER'S OWN VIEW | | | | CLASS PERCEPTIONS[a] | | | | STYLE |
CLASS	S_1	S_2	S_3	S_4	S_1	S_2	S_3	S_4	CODE
3	2	6	7	1	2.5	4.9*	4.8*	3.7*	4
4	3	4	5	4	3.5	6.2*	4.4	1.9	1
6	2	7	6	1	2.5	6.7*	4.5	2.4	1
13	3	7	5	1	3.0	6.2*	4.4	2.4	1
16	0	11	2	3	1.9	6.0*	4.4	3.8	1
17	0	9	6	1	2.7	6.0*	4.9*	2.3	2
19	1	6	7	2	2.6	6.6*	4.5	2.2	1
24	0	9	6	1	3.1	5.7*	5.1*	2.1	2
26	2	5	8	1	2.3	4.9*	6.0*	2.8	2
27	1	5	8	2	1.7	5.2*	5.8*	3.3	2
28	1	5	8	2	1.5	6.0*	5.2*	3.3	2
29	4	5	4	3	5.0*	3.0*	3.6*	4.5*	5
32	0	5	8	3	2.4	3.7	5.7*	4.2	1
33	2	7	5	2	2.2	5.4*	6.4*	2.0	2
34	2	6	5	3	3.1	5.4*	4.2	3.3	1
38	0	6	9	1	2.1	5.5*	6.2*	2.2	2
51	1	7	6	2	2.7	4.6	7.2*	1.5	1
52	3	3	9	1	2.9	5.4*	4.0	3.6	1
57	1	6	8	1	1.9	6.9*	5.3*	1.9	2
68	0	2	7	7	2.2	5.3*	6.2*	2.3	2
70	4	5	4	3	4.7*	5.3*	3.2*	2.8*	5
71	3	7	4	2	1.8	7.2*	4.4	2.5	1
72	1	7	5	3	3.0	6.2*	4.7	2.1	1
73	2	5	8	1	3.2	6.4*	4.3	2.0	1
76	0	5	9	2	2.5	4.5	6.9*	2.1	1
82	2	7	6	1	3.2*	5.8*	4.5*	2.4*	5
86	2	3	7	4	2.2	5.8*	5.9*	2.1	2
87	2	5	9	0	4.4*	4.8*	3.7*	3.2*	5
90	0	6	9	1	1.9	5.6*	6.3*	2.2	2
97	1	5	8	2	3.9	6.3*	4.0	1.8	1
99	1	7	5	3	1.9	5.1*	5.6*	3.4	2

[a]Except for the style code figures, values represent class averages.

*Styles used to determine the style code.

Table 2

A Comparison of Class and Self Perceptions of the Teachers' Use of the

Four Styles as Determined by the TEAD Questionnaire

Treatment Group – Winter Data

| | TEACHER'S OWN VIEW | | | | CLASS PERCEPTIONS[a] | | | | STYLE |
CLASS	S_1	S_2	S_3	S_4	S_1	S_2	S_3	S_4	CODE
3					4.1*	4.2*	3.9*	3.8*	5
4	0	4	10	2	3.5	6.3*	4.2	2.0	1
6	2	7	6	1	2.3	7.3*	4.5	1.7	1
13	2	7	7	0	3.8	5.7*	4.1	2.4	1
16	2	9	3	2	2.4	5.6*	4.4	3.5	1
17					3.2	5.3*	3.7	3.8	1
19					2.7	5.9*	5.1*	2.6	2
24					2.5	6.0*	5.0	2.5	1
26	0	6	9	1	1.3	5.3*	6.0*	3.5	2
27	2	5	8	1	2.2	4.3*	6.8*	2.6	2
28	2	6	7	1	2.4	5.7*	4.7*	3.2	2
29	5	6	4	1	3.4*	4.1*	4.9*	3.6*	5
32	0	7	6	3	2.7*	4.6*	5.4*	3.2*	5
33	2	6	7	1	2.8	5.9*	5.2*	2.1	2
34	4	5	4	3	3.7	5.2*	3.6	3.4	1
38	0	5	10	1	2.8	4.8*	5.3*	3.1	2
51	1	5	8	2	2.3	5.2	6.9*	1.6	1
52	1	3	7	5	3.3	5.1*	3.8	3.8	1
57	1	8	6	1	2.6	5.5*	4.5	3.4	1
68	3	6	4	3	2.0	5.0*	6.2*	2.8	2
70	3	5	6	2	5.0*	4.7*	3.9*	2.4	4
71	1	6	4	5	3.8	6.1*	3.5	2.6	1
72	1	7	5	3	2.3	5.8*	5.8*	2.1	2
73	3	4	7	2	2.8	6.5*	4.4	2.4	1
76	1	3	9	3	3.0	5.8*	5.3*	1.9	2
82	2	7	6	1	2.6	5.8*	4.3	3.3	1
86	1	5	6	3	3.3*	5.4*	4.8*	2.5	4
87					3.2	5.3*	4.5*	2.9	2
90	0	5	10	1	2.0	4.9*	6.1*	3.0	2
97	2	6	7	1	2.3	6.2*	4.7	2.8	1
99					2.0	6.2*	5.6*	2.2	2

[a]Except for the style code figures, values represent class averages.

*Styles used to determine the style code.

Table 3

A Comparison of the Self Perceptions of the Teachers' Use of the

Four Styles as Determined by the TEAD Questionnaire

Treatment Group – Fall and Winter Data

	FALL DATA				WINTER DATA			
CLASS	S_1	S_2	S_3	S_4	S_1	S_2	S_3	S_4
3	2	6	7	1				
4	3	4	5	4	0	4	10	2
6	2	7	6	1	2	7	6	1
13	3	7	5	1	2	7	7	0
16	0	11	2	3	2	9	3	2
17	0	9	6	1				
19	1	6	7	2				
24	0	9	6	1				
26	2	5	8	1	0	6	9	1
27	1	5	8	2	2	5	8	1
28	1	5	8	2	2	6	7	1
29	4	5	4	3	5	6	4	1
32	0	5	8	3	0	7	6	3
33	2	7	5	2	2	6	7	1
34	2	6	5	3	4	5	4	3
38	0	6	9	1	0	5	10	1
51	1	7	6	2	1	5	8	2
52	3	3	9	1	1	3	7	5
57	1	6	8	1	1	8	6	1
68	0	2	7	7	3	6	4	3
70	4	5	4	3	3	5	6	2
71	3	7	4	2	1	6	4	5
72	1	7	5	3	1	7	5	3
73	2	5	8	1	3	4	7	2
76	0	5	9	2	1	3	9	3
82	2	7	6	1	2	7	6	1
86	2	3	7	4	1	5	6	3
87	2	5	9	0				
90	0	6	9	1	0	5	10	1
97	1	5	8	2	2	6	7	1
99	1	7	5	3				

Table 4

A Comparison of the Students' Perceptions from the Two Semesters

of Their Teacher's Use of the Four Styles

as Determined by the TEAD Questionnaire

	STYLES – FALL DATA[a]				STYLES – WINTER DATA[a]				STYLE CODES	
CLASS	S_1	S_2	S_3	S_4	S_1	S_2	S_3	S_4	FALL	WINTER
3	2.5	4.9*	4.8*	3.7*	4.1*	4.2*	3.9*	3.8*	4	5
4	3.5	6.2*	4.4	1.9	3.5	6.3*	4.2	2.0	1	1
6	2.5	6.7*	4.5	2.4	2.3	7.3*	4.5	1.7	1	1
13	3.0	6.2*	4.4	2.4	3.8	5.7*	4.1	2.4	1	1
16	1.9	6.0*	4.4	3.8	2.4	5.6*	4.4	3.5	1	1
17	2.7	6.0*	4.9*	2.3	3.2	5.3*	3.7	3.8	2	1
19	2.6	6.6*	4.5	2.2	2.7	5.9*	5.1*	2.6	1	2
24	3.1	5.7*	5.1*	2.1	2.5	6.0*	5.0	2.5	2	1
26	2.3	4.9*	6.0*	2.8	1.3	5.3*	6.0*	3.5	2	2
27	1.7	5.2*	5.8*	3.3	2.2	4.3*	6.8*	2.6	2	2
28	1.5	6.0*	5.2*	3.3	2.4	5.7*	4.7*	3.2	2	2
29	5.0*	3.0*	3.6*	4.5*	3.4*	4.1*	4.9*	3.6*	5	5
32	2.4	3.7	5.7*	4.2	2.7*	4.6*	5.4*	3.2*	1	5
33	2.2	5.4*	6.4*	2.0	2.8	5.9*	5.2*	2.1	2	2
34	3.1	5.4*	4.2	3.3	3.7	5.2*	3.6	3.4	1	1
38	2.1	5.5*	6.2*	2.2	2.8	4.8*	5.3*	3.1	2	2
51	2.7	4.6	7.2*	1.5	2.3	5.2	6.9*	1.6	1	1
52	2.9	5.4*	4.0	3.6	3.3	5.1*	3.8	3.8	1	1
57	1.9	6.9*	5.3*	1.9	2.6	5.5*	4.5	3.4	2	1
68	2.2	5.3*	6.2*	2.3	2.0	5.0*	6.2*	2.8	2	2
70	4.7*	5.3*	3.2*	2.8*	5.0*	4.7*	3.9*	2.4	5	4
71	1.8	7.2*	4.4	2.5	3.8	6.1*	3.5	2.6	1	1
72	3.0	6.2*	4.7	2.1	2.3	5.8*	5.8*	2.1	1	2
73	3.2	6.4*	4.3	2.0	2.8	6.5*	4.4	2.4	1	1
76	2.5	4.5	6.9*	2.1	3.0	5.8*	5.3*	1.9	1	2
82	3.2*	5.8*	4.5*	2.4*	2.6	5.8*	4.3	3.3	5	1
86	2.2	5.8*	5.9*	2.1	3.3*	5.4*	4.8*	2.5	2	4
87	4.4*	4.8*	3.7*	3.2*	3.2	5.3*	4.5*	2.9	5	2
90	1.9	5.6*	6.3*	2.2	2.0	4.9*	6.1*	3.0	2	2
97	3.9	6.3*	4.0	1.8	2.3	6.2*	4.7	2.8	1	1
99	1.9	5.1*	5.6*	3.4	2.0	6.2*	5.6*	2.2	2	2

[a]Except for the style code figures, values represent class averages.

*Styles used to determine the style codes.

26

Table 5

A Comparison of Class and Self Perceptions of the Teachers' Use of the

Four Styles as Determined by the TEAD Questionnaire

Control Group - Fall Data

	TEACHER'S OWN VIEW				CLASS PERCEPTIONS				STYLE CODE
CLASS	S_1	S_2	S_3	S_4	S_1	S_2	S_3	S_4	
1	2	7	4	3	2.3	6.0*	5.4*	2.3	2
2	0	4	10	2	2.3	5.7*	4.9*	3.0	2
5	2	5	8	1	1.7	6.5*	6.8*	1.1	2
7	1	7	6	2	2.4	3.2	2.9	7.4*	1
9	2	5	8	1	4.1*	5.8*	3.3*	2.7*	5
10	2	8	5	1	3.2	6.1*	5.2*	1.5	2
11	5	3	5	3	4.2*	5.1*	3.5*	3.2*	5
12	3	7	6	0	4.3*	5.5*	3.5	2.6	3
14	7	2	6	1	4.6*	5.1*	4.1*	2.0	4
15	1	5	6	4	3.4*	5.2*	4.4*	3.0	4
18	2	8	2	4	2.9	5.6*	4.7*	2.8	2
20	2	5	7	2	3.3*	6.0*	4.7*	1.9	4
21	2	8	3	3	2.8	7.2*	4.1	1.8	1
22	1	5	8	2	1.9	7.9*	4.6	1.5	1
31	3	8	4	1	3.6	5.8*	4.2	2.4	1
36	2	5	6	3	1.3	5.0	6.5*	3.2	1
41	1	4	8	3	2.6	5.6*	4.7*	3.0	2
42	1	7	7	1	3.7	6.4*	3.7	2.2	1
43	3	8	4	1	3.4*	5.8*	4.4*	2.3*	5
50	2	9	3	2	4.0	5.7*	3.6	2.7	1
53	2	5	7	2	4.3*	5.6*	3.5*	2.6*	5
55	0	5	10	1	2.6	6.7*	4.9	1.8	1
56	2	10	3	1	3.1	6.4*	4.5	2.0	1
58	1	7	7	1	1.6	5.3*	6.0*	3.1	2
59	1	10	3	2	6.6*	3.3	2.5	3.6	1
60	6	5	3	2	2.6	7.0*	4.4	2.0	1
63	2	5	5	4	3.3	6.1*	4.1	2.5	1
64	1	4	9	2	1.9	5.5*	5.6*	2.9	2
67	2	5	6	3	1.5	5.0	6.4*	3.2	1
74	2	7	5	2	4.2	6.0*	3.1	2.6	1
75	0	8	6	2	3.0	5.0*	5.1*	2.9	2
78	4	5	7	0	3.5	5.7*	4.3	2.3	1
93	2	9	3	2	5.2*	5.2*	2.6	3.0	3
102	2	5	7	2	2.4	5.8*	5.7*	2.1	2

[a]Except for the style code figures, values represent class averages.

*Styles used to determine the style code.

27

Table 6

A Comparison of Class and Self Perceptions of the Teachers' Use of the

Four Styles as Determined by the TEAD Questionnaire

Control Group – Winter Data

	TEACHER'S OWN VIEW				CLASS PERCEPTIONS[a]				STYLE CODE
CLASS	S_1	S_2	S_3	S_4	S_1	S_2	S_3	S_4	
1					2.4	5.6*	5.4*	2.7	2
2	4	7	4	1	2.1	5.7*	5.4*	2.8	2
5	2	4	9	1	2.0	6.8*	5.4*	1.8	2
7	2	9	4	1	3.3	4.9*	3.2	4.5*	6
9	6	5	3	2	4.5*	5.6*	3.5*	2.4*	5
10	3	7	5	1	3.3	6.5*	4.5	1.7	1
11	5	5	4	2	4.7*	4.1*	3.5*	3.6*	5
12	4	8	4	0	5.4*	5.1*	3.5	2.1	3
14	5	6	5	0	5.0*	5.3*	3.0	2.7˙	3
15	1	6	7	2	6.0*	4.3	2.8	2.9	1
18					3.0	6.1*	4.6	2.3	1
20					2.0	5.5*	6.3*	2.2	2
21	2	8	4	2	3.5	6.4*	4.5	1.6	1
22	2	5	8	1	3.5*	4.6*	5.0*	2.9*	5
31	1	6	5	4	4.1*	5.2*	3.2*	3.4*	5
36	1	7	6	2	1.6	5.3*	5.9*	3.2	2
41					2.6	5.7*	5.8*	1.9	2
42					3.1	5.9*	4.4	2.5	1
43	4	6	3	3	4.0	6.7*	3.7	1.7	1
50	1	5	5	5	4.7*	5.7*	2.9	2.6	2
53	2	4	9	1	5.1*	4.7*	2.8*	3.3*	5
55					2.5	5.5*	6.2*	1.9	2
56	2	9	4	1	3.6	6.4*	3.8	2.2	1
58	0	6	9	1	2.2	5.5*	5.6*	2.8	2
59	3	9	2	2	6.3*	2.6	2.5	4.7*	6
60					3.8	5.6*	4.1	2.6	1
63	2	6	6	2	5.3*	4.5*	3.0	3.1	2
64					2.8	6.0*	5.1*	2.1	2
67					1.0	4.9*	5.7*	4.4*	4
74	1	6	7	2	3.8*	5.3*	3.5*	3.4*	5
75	4	7	4	1	3.2	6.3*	4.1	2.4	1
78	5	5	5	1	3.7*	5.1*	4.9*	2.3	4
93	1	5	5	5	4.3*	5.1*	4.0*.	2.5	4
102					2.7	4.4	6.0*	2.9	1

[a]Except for the style code figures, values represent class averages.

*Styles used to determine the style code.

Table 7

A Comparison of the Self Perceptions of Teachers' Use of the

Four Styles as Determined by the TEAD Questionnaire

Control Group – Fall and Winter Data

	FALL DATA				WINTER DATA			
CLASS	S_1	S_2	S_3	S_4	S_1	S_2	S_3	S_4
1	2	7	4	3				
2	0	4	10	2	4	7	4	1
5	2	5	8	1	2	4	9	1
7	1	7	6	2	2	9	4	1
9	2	5	8	1	6	5	3	2
10	2	8	5	1	3	7	5	1
11	5	3	5	3	5	5	4	2
12	3	7	6	0	4	8	4	0
14	7	2	6	1	5	6	5	0
15	1	5	6	4	1	6	7	2
18	2	8	2	4				
20	2	5	7	2				
21	2	8	3	3	2	8	4	2
22	1	5	8	2	2	5	8	1
31	3	8	4	1	1	6	5	4
36	2	5	6	3	1	7	6	2
41	1	4	8	3				
42	1	7	7	1				
43	3	8	4	1	4	6	3	3
50	2	9	3	2	1	5	5	5
53	2	5	7	2	2	4	9	1
55	0	5	10	1				
56	2	10	3	1	2	9	4	1
58	1	7	7	1	0	6	9	1
59	1	10	3	2	3	9	2	2
60	6	5	3	2				
63	2	5	5	4	2	6	6	2
64	1	4	9	2				
67	2	5	6	3				
74	2	7	5	2	1	6	7	2
75	0	8	6	2	4	7	4	1
78	4	5	7	0	5	5	5	1
93	2	9	3	2	1	5	5	5
102	2	5	7	2				

Table 8

A Comparison of the Students' Perceptions from the Two Semesters

of Their Teacher's Use of the Four Styles

as Determined by the TEAD Questionnaire

| | STYLES – FALL DATA[a] | | | | STYLES – WINTER DATA[a] | | | | STYLE CODES | |
CLASS	S_1	S_2	S_3	S_4	S_1	S_2	S_3	S_4	FALL	WINTER
1	2.3	6.0*	5.4*	2.3	2.4	5.6*	5.4*	2.7	2	2
2	2.3	5.7*	4.9*	3.0	2.1	5.7*	5.4*	2.8	2	2
5	1.7	6.5*	6.8*	1.1	2.0	6.8*	5.4*	1.8	2	2
7	2.4	3.2	2.9	7.4*	3.3	4.9*	3.2	4.5*	1	6
9	4.1*	5.8*	3.3*	2.7*	4.5*	5.6*	3.5*	2.4*	5	5
10	3.2	6.1*	5.2*	1.5	3.3	6.5*	4.5	1.7	2	1
11	4.2*	5.1*	3.5*	3.2*	4.7*	4.1*	3.5*	3.6*	5	5
12	4.3*	5.5*	3.5	2.6	5.4*	5.1*	3.5	2.1	3	3
14	4.6*	5.1*	4.1*	2.0	5.0*	5.3*	3.0	2.7	4	3
15	3.4*	5.2*	4.4*	3.0	6.0*	4.3	2.8	2.9	4	1
18	2.9	5.6*	4.7*	2.8	3.0	6.1*	4.6	2.3	2	1
20	3.3*	6.0*	4.7*	1.9	2.0	5.5*	6.3*	2.2	4	2
21	2.8	7.2*	4.1	1.8	3.5	6.4*	4.5	1.6	1	1
22	1.9	7.9*	4.6	1.5	3.5*	4.6*	5.0*	2.9*	1	5
31	3.6	5.8*	4.2	2.4	4.1*	5.2*	3.2*	3.4*	1	5
36	1.3	5.0	6.5*	3.2	1.6	5.3*	5.9*	3.2	1	2
41	2.6	5.6*	4.7*	3.0	2.6	5.7*	5.8*	1.9	2	2
42	3.7	6.4*	3.7	2.2	3.1	5.9*	4.4	2.5	1	1
43	3.4*	5.8*	4.4*	2.3*	4.0	6.7*	3.7	1.7	5	1
50	4.0	5.7*	3.6	2.7	4.7*	5.7*	2.9	2.6	1	2
53	4.3*	5.6**	3.5*	2.6*	5.1*	4.7*	2.8*	3.3*	5	5
55	2.6	6.7*	4.9	1.8	2.5	5.5*	6.2*	1.9	1	2
56	3.1	6.4*	4.5	2.0	3.6	6.4*	3.8	2.2	1	1
58	1.6	5.3*	6.0*	3.1	2.2	5.5*	5.6*	2.8	2	2
59	6.6*	3.3	2.5	3.6	6.3*	2.6	2.5	4.7*	1	6
60	2.6	7.0*	4.4	2.0	3.8	5.6*	4.1	2.6	1	1
63	3.3	6.1*	4.1	2.5	5.3*	4.5*	3.0	3.1	1	2
64	1.9	5.5*	5.6*	2.9	2.8	6.0*	5.1*	2.1	2	2
67	1.5	5.0	6.4*	3.2	1.0	4.9*	5.7*	4.4*	1	4
74	4.2	6.0*	3.1	2.6	3.8*	5.3*	3.5*	3.4*	1	5
75	3.0	5.0*	5.1*	2.9	3.2	6.3*	4.1	2.4	2	1
78	3.5	5.7*	4.3	2.3	3.7*	5.1*	4.9*	2.3	1	4
93	5.2*	5.2*	2.6	3.0	4.3*	5.1*	4.0*.	2.5	3	4
102	2.4	5.8*	5.7*	2.1	2.7	4.4	6.0*	2.9	2	1

[a]Except for the style code figures, values represent class averages.

*Styles used to determine the style codes.

Table 9

A Summary of Students' Perceptions of Teachers' Preferred Styles

by Style Code

| | TREATMENT GROUP | | | CONTROL GROUP | |
CLASS	FALL	WINTER	CLASS	FALL	WINTER
3	4	5	1	2	2
4	1	1	2	2	2
6	1	1	5	2	2
13	1	1	7	1	6
16	1	1	9	5	5
17	2	1	10	2	1
19	1	2	11	5	5
24	2	1	12	3	3
26	2	2	14	4	3
27	2	2	15	4	1
28	2	2	18	2	1
29	5	5	20	4	2
32	1	5	21	1	1
33	2	2	22	1	5
34	1	1	31	1	5
38	2	2	36	1	2
51	1	1	41	2	2
52	1	1	42	1	1
57	2	1	43	5	1
68	2	2	50	1	2
70	5	4	53	5	5
71	1	1	55	1	2
72	1	2	56	1	1
73	1	1	58	2	2
76	1	2	59	1	6
82	5	1	60	1	1
86	2	4	63	1	2
87	5	2	64	2	2
90	2	2	67	1	4
97	1	1	74	1	5
99	2	2	75	2	1
			78	1	4
			93	3	4
			102	2	1

Table 10

Teaching Style Profile Frequencies: Students' Perceptions

STYLE CODE	STYLES	FREQUENCY OF PROFILE				FREQUENCY AS A %			
		TREATMENT		CONTROL		TREATMENT		CONTROL	
		FALL	WINTER	FALL	WINTER	FALL	WINTER	FALL	WINTER
1	S_1 or S_2 or S_3 or S_4	14	14	15	10	45	45	44	29
2	S_2 and S_3	12	12	10	11	39	39	29	32
3	S_1 and S_2	--	--	2	2	--	--	6	6
4	any three styles	1	2	3	3	3	6	9	9
5	all four styles	4	3	4	6	3	10	12	18
6	any other 2 style combination	--	--	--	2	--	--	--	6
	TOTALS	31	31	34	34	100	100	100	100

Table 11

A Summary Of Both Class and Self Perceptions of the Style Range

Dimension as Determined by the TEAD Questionnaire for

Treatment Groups

	FALL SEMESTER			WINTER SEMESTER		
CLASS	SELF SCORE	CLASS SCORE x^a	SD^b	SELF SCORE	CLASS SCORE x^a	SD^b
3	14	17.1	3.0		18.3	2.1
4	22	16.8	2.9	12	16.7	2.9
6	14	16.4	3.5	14	15.4	3.3
13	16	17.2	2.7	12	17.4	2.8
16	10	17.6	3.1	14	17.4	2.8
17	10	16.8	3.2		17.4	2.7
19	14	16.1	3.3		16.9	2.8
24	10	16.5	3.3		16.4	3.1
26	14	16.9	3.2	10	15.7 ·	3.2
27	14	16.6	2.8	14	16.7	2.1
28	14	16.3	2.5	14	17.9	3.1
29	22	18.6	2.4	18	17.6	3.4
32	14	18.1	2.5	14	17.3	2.9
33	16	16.0	3.5	14	16.2	3.9
34	18	16.4	3.4	22	18.1	2.7
38	10	15.5	3.6	10	18.1	2.2
51	14	15.0	3.2	14	14.8	3.5
52	14	17.8	2.8	16	18.7	2.2
57	12	14.7	4.2	12	18.2	2.6
68	12	15.5	3.0	20	16.0	3.5
70	22	16.6	2.2	18	17.4	2.2
71	18	15.8	2.9	18	17.4	2.2
72	16	16.4	3.2		16.3	3.0
73	14	16.1	2.3	18	16.4	3.0
76	12	15.3	3.6	14	16.1	3.4
82	14	16.5	1.9		18.4	3.5
86	18	15.9	3.8	17	16.7	3.4
87	12	18.5	2.1		17.3	3.4
90	10	15.2	3.6	10	16.2	2.8
97	14	16.9	2.4	14	16.7	2.9
99	16	16.8	3.0		15.0	2.8

^{a} Mean class scores. ^{b}Standard deviation values.

Table 12

A Summary Of Both Class and Self Perceptions of the Style Range

Dimension as Determined by the TEAD Questionnaire for

Control Groups

	FALL SEMESTER			WINTER SEMESTER		
CLASS	SELF SCORE	CLASS SCORE x[a]	SD[b]	SELF SCORE	CLASS SCORE x[a]	SD[b]
1	18	16.1	3.5		17.2	2.4
2	12	17.3	2.9	18	16.6	2.7
5	14	13.3	2.7	14	15.1	3.0
7	14	15.5	4.5	14	18.7	1.7
9	14	16.7	3.7	18	17.5	3.4
10	14	15.2	2.8	16	16.2	2.5
11	20	18.4	2.6	20	18.3	1.5
12	14	17.6	3.3	16	16.9	2.4
14	14	17.5	3.5	16	17.2	2.7
15	18	18.2	2.9	14	16.6	2.9
18	16	16.8	2.5		16.4	2.8
20	16	16.6	2.7		16.0	3.0
21	16	14.9	2.8	16	15.6	2.8
22	14	14.4	3.2	14	17.7	2.7
31	16	16.3	3.5	18	18.1	2.6
36	18	15.4	2.9	14	16.3	2.7
41	16	17.6	3.0		16.2	3.4
42	12	16.9	3.4		17.0	2.7
43	16	17.2	2.7	20	16.4	2.8
50	14	17.7	2.5	18	16.8	2.8
53	16	17.6	2.7	14	17.8	2.2
55	10	15.3	3.7		15.6	2.8
56	12	16.4	2.8	14	16.3	3.0
58	12	15.9	2.9	10	14.2	2.8
59	12	16.1	3.2	14	15.6	4.2
60	18	15.8	2.8		17.4	2.4
63	20	17.2	1.8	16	16.9	2.2
64	14	16.3	2.7		16.9	3.3
67	18	16.2	2.7		16.4	3.0
74	16	17.8	2.6	14	18.2	3.0
75	12	17.9	2.4	18	16.7	2.9
78	16	17.3	2.5	18	16.1	2.4
93	14	17.0	2.5	18	17.3	2.5
102	16	16.0	3.1		16.8	2.9

[a] Mean class scores.   [b] Standard deviation values.

Table 13

Distribution Of The Style Range Scores

GROUP	SEMESTER	TEAD QUESTIONNAIRE	0 - 6	7 - 12	13 - 18	19 - 24	TOTALS
				SCORE FROM STYLE RANGE SCALE			
Treatment	Fall	Self	---	9(29%)	19(61%)	3(10%)	31
Treatment	Fall	Other	---	---	31(100%)	---	31
Treatment	Winter	Self	---	6(26%)	15(65%)	2(9%)	23
Treatment	Winter	Other	---	---	31(100%)	---	31
Control	Fall	Self[a]	---	7(21%)	25(73%)	2(6%)	34
Control	Fall	Other	---	---	34(100%)	---	34
Control	Winter	Self[a]	---	1(4%)	21(88%)	2(8%)	24
Control	Winter	Other	---	---	34(100%)	---	34

[a] Some teacher participants failed to complete or return the TEAD-SELF Questionnaire in the Winter Semester.

Table 14

A Comparison Of The Changes In The Style Range Scores Between Semesters

GROUP	POSITIVE	NEGATIVE	NONE	TOTAL
	TYPE OF CHANGE IN STYLE RANGE SCORE			
Treatment	6(26%)	7(30%)	10(44%)	23
Control	13(54%)	6(25%)	5(21%)	24

Table 15

A Summary of Both Class and Self Perceptions for the Fall and Winter

Semesters of the Style Effectiveness Scores - Treatment Group

| CLASS | FALL SEMESTER | | | WINTER SEMESTER | | |
| | SELF | CLASS SCORE | | SELF | CLASS SCORE | |
	SCORE	x^a	SD^b	SCORE	x^a	SD^b
3	32	23.8	4.6		21.9	3.0
4	23	28.8	4.3	27	28.4	3.8
6	26	23.8	3.9	30	26.4	5.1
13	33	24.1	3.9	39	25.1	4.0
16	31	24.4	4.7	39	24.6	4.6
17	31	25.0	4.1		24.2	5.4
19	33	26.0	3.5		27.0	5.1
24	27	26.0	4.6	34	23.8	5.0
26	30	24.4	3.7	29	24.6	3.0
27	28	23.6	3.1	31	26.0	5.3
28	28	24.8	2.4	32	25.7	4.8
29	28	26.5	4.2	31	24.8	4.5
32	22	27.3	5.1	25	27.3	4.3
33	29	27.5	2.8	35	27.9	5.3
34	29	24.9	4.1	33	27.5	5.2
38	26	26.3	3.5	31	24.4	5.7
51	33	24.2	5.5	34	27.0	3.6
52	35	25.4	4.0	36	24.4	5.2
57	26	25.7	3.7	34	23.5	2.6
68	22	26.1	4.7	38	28.7	4.2
70	32	27.3	4.7	38	25.7	5.0
71	29	26.0	3.8	32	25.9	4.7
72	31	28.4	4.1	38	28.0	4.4
73	29	25.0	4.3	38	27.0	3.4
76	30	24.6	3.9	27	24.7	3.8
82	20	25.9	2.8		24.1	3.9
86	27	25.7	4.3	32	25.3	4.6
87	28	26.0	5.3		28.0	5.7
90	26	26.3	3.5	31	26.1	4.1
97	28	24.6	5.8	32	25.5	4.4
99	27	26.2	2.7		25.7	4.1
Overall Mean	28.3	25.6	----	33.0	25.8	----

[a]Class mean scores. [b]Standard deviation values.

Table 16

A Summary of Both Class and Self Perceptions for the Fall and Winter

Semesters of the Style Effectiveness Scores – Control Group

| CLASS | FALL SEMESTER | | | WINTER SEMESTER | | |
	SELF SCORE	CLASS SCORE x^a	SD^b	SELF SCORE	CLASS SCORE x^a	SD^b
1	30	27.0	3.6		27.4	4.7
2	29	25.5	4.7	30	25.8	4.7
5	32	28.2	3.8	31	27.3	3.5
7	25	18.0	2.7	28	21.2	4.5
9	32	26.7	3.9	28	26.1	2.9
10	27	25.9	3.0	33	25.1	4.3
11	25	29.0	2.9	35	26.2	4.6
12	27	25.4	3.3	29	26.8	4.6
14	27	26.8	4.0	24	28.3	3.6
15	30	27.6	4.2	34	24.9	4.2
18	24	26.0	4.2		27.4	3.9
20	33	27.4	2.7		27.5	4.2
21	29	26.5	4.1	35	27.1	4.1
22	26	28.1	3.2	35	24.9	5.2
31	28	27.6	5.4	30	25.1	4.6
36	28	25.1	3.5	32	24.6	3.8
41	29	24.0	4.3		27.6	4.7
42	34	26.8	4.5		27.7	4.2
43	27	26.9	4.0	24	27.3	4.6
50	23	26.1	4.7	23	25.5	3.7
53	29	25.7	3.4	30	27.3	4.5
55	29	24.0	4.4		23.7	4.1
56	28	25.3	3.0	30	23.7	4.4
58	33	23.1	3.3	34	27.0	3.1
59	23	25.6	3.8	25	26.4	4.8
60	29	26.9	4.3		26.1	4.3
63	32	25.6	4.6	30	24.3	4.2
64	22	24.7	4.9		24.0	3.9
67	40	23.6	4.1		26.6	5.2
74	28	27.6	4.0	26	26.6	5.5
75	32	23.2	4.1	32	24.7	5.4
78	31	25.9	4.4	33	27.0	3.4
93	23	26.3	4.0	23	25.5	4.1
102	28	24.3	4.3		24.5	4.0
Overall Mean	28.9	25.7	---	29.7	25.9	---

[a]Class mean scores. [b]Standard deviation values.

Table 17

A Summary of the Quiz Scores

| | TREATMENT GROUP QUIZ SCORE[a] | | | | CONTROL GROUP QUIZ SCORE[a] | |
TEACHER	FALL	POST[b]	WINTER	TEACHER	FALL	WINTER
4	11	9	10	2	7	8
13	6	19	14	5	14	11
16	11	14	13	7	8	10
17	10	14	19	10	7	11
19	6	12	15	11	10	8
24	10	15	12	12	6	8
26	5	13	13	14	9	6
27	5	14	8	15	8	11
28	10	14	15	18	8	9
29	6	14	12	20	9	10
31	7	11	14	21	10	8
32	10	17	14	22	5	8
33	9	15	8	23	12	11
34	8	16	7	36	8	11
38	5	13	10	37	10	8
40	5	12	16	39	10	10
51	9	15	13	42	10	12
52	10	14	14	43	8	6
57	6	15	13	45	8	11
68	11	14	13	46	5	8
70	8	16	13	48	6	6
71	5	17	14	50	8	6
72	9	12	18	53	7	8
73	12	16	13	55	6	8
76	6	14	11	56	7	6
82	7	16	12	58	7	8
86	5	8	12	59	5	6
87	7	14	16	60	9	7
99	6	10	9	61	7	7
				63	8	10
				67	10	11
				74	10	10
				75	14	6
				78	13	7
				79	14	15
				83	6	6
Mean	7.5	13.8	12.5		8.1	8.4

[a]Score on quizzes out of a total possible 20 points.

[b]Post-workshop test session

38