

MY BEST PROFESSOR
A STUDY OF TEACHER EFFECTIVENESS
IN A CEGEP SETTING

by

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EXECUTIVE SUMMARY

The purpose of this project is to determine the qualities demanded of a professor by students at the CEGEP level. It includes a survey of literature on teacher effectiveness and the ways to define it. A review of studies that have been conducted recently is performed in the first chapter; communalities were found to exist amongst these studies with respect to the dimensions of teaching effectiveness:

- the degree of "Skill" and
- the degree of "Structure" of a professor.

A survey of students from CEGEP St-Laurent in Montreal has uncovered these same dimensions of teaching effectiveness and revealed the existence of two additional ones:

- "Student Participation" and
- "Warmth of a Professor".

Finally, differences were found to exist between male and female students, caused by the differences in their respective personal values:

- female students demand a more "Comprehensive" and
- more "Simple" professor.

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INTRODUCTION

"We must not let students interfere with the real work of the school", said a professor in response to a proposal of student involvement in course/professor evaluation. Of course, many people have interests in evaluating effectiveness of professors: students, faculty members, school administrators and of course the professor himself. Until recently, the ultimate criteria of good teaching was student learning; but is this the best measure of effective teaching in this day and age? Would not effectiveness be best defined as the achievement of specific objectives? If so, whose objectives? These questions have caused a lot of ink to be spilled and raised a lot of controversy.

The reason for this is rather obvious if one cares to consider the following facts:

1. The schools themselves have specific objectives spelled out in the course outlines;
2. Individual professors walk into class with their own specific objectives in mind;
3. Students usually have yet a third set of objectives in mind;
4. Different students, of course, have different objectives.

With such a variety of objectives to satisfy, some being diametrically opposed, a common measure of effectiveness is very difficult to devise. Because this paper deals with people of the CEGEP level, objectives of the Collèges d'Enseignement Général et Professionnel should be outlined here. The purpose of this study is to determine the qualities demanded of a professor by students at the CEGEP level.

Our hypothesis is threefold:

1. That different students will require a different type of professor;
2. That male and female students demand different qualities from a professor;
3. That the qualities demanded of a professor are related to the personal values of students.

The first part of this paper is devoted to a survey of literature on teacher effectiveness, the ways to define it and the means of measuring it. In the second part, we will try to reconcile theory with practice through a survey of students from CEGEP St-Laurent in Montreal.

CHAPTER 1

LITERATURE SURVEY & REVIEW

As was mentioned previously, the current measure of effective teaching is the achievement of specific objectives, the difficulty being to define the objectives because of a lack of agreement amongst all parties involved. However, because these objectives are determined in part by the values of society, we must first achieve an understanding of the values currently in place in the Quebec society.

1.1 - Present Values of the Quebec Society

We are presently passing through a transitional era characterized by very rapid technological and social changes. This has destroyed the balance of society, rendering it very unstable (J. Fennell, 1978). People are relying on the educational system to restore the stability. This problem is even more acute in the Quebec society due to the fact that Quebecers are presently in the process of seeking a political renewal in order to protect their cultural values and economic rights.

A study done at the University of Montreal (J. Lamontagne & R. Therrien, 1977) has shown that the values of CEGEP professors had evolved since the creation of CEGEPs in 1967. Because a person's values are transmitted to him in part by his family and in part by the education system, values of professors are likely to resemble those of society in general. Those values could be analyzed under two headings:

A) General values of CEGEP professors

Through factor analysis, Lamontagne and Therrien were able to isolate seven values: - need for autonomy,

- satisfaction with private life,
- importance of the human person,
- humanitarian ideals,
- involvement in a group,
- creativity and
- a global society (Canada and/or Quebec).

This would seem to indicate that a new dimension has been added to the social and political involvement so typical of the '60s. This new dimension is the development of personality.

B) Pedagogical values of CEGEP professors

Through the analysis of six pedagogical values namely:

- transmission of knowledge,
- expression of presentation,
- empathy for the students,
- help students to uncover their needs and values,
- planning of student education and
- student ressource for apprenticeship of a subject,

Lamontagne and Therrien were able to show an evolution towards a student centered education system.

Finally, with respect to the differences that may exist between male and female students, a study was carried out in the metropolitan Buffalo, New York, area (B.A. Putnam, T.W. Hosie & J.C. Hansen, 1978). This study as shown a significant sex difference in vocational attitude maturity but no significant sex difference in total levels of self-esteem. The conclusion of their report was that the education system must be sensitive to differences existing between students of both sexes, but bearing in mind that there are also significant differences between members of the same sex.

This short review of the present values of our society has enabled us to better understand the objectives of all parties involved. In the following pages, we will attempt to define accurately the objectives of each group involved and to pinpoint some communality amongst them.

1.2 - Objectives pursued by CEGEPs

In most countries, the education system has only three levels: Grade Schools, High Schools and Universities. In Quebec, the idea behind CEGEPs is that after High School the student, being at the crucial age of adolescence, does not belong to a University environment and yet is too old for High School. Because the student is in the process of asserting his personality and developing his intellectual and moral values, he requires a very specific environment (J-Y. Morin, Minister of Education, 1978).

There are seven objectives pursued by the "Loi des Collèges d'Enseignement Général et Professionnel" adopted by the National Assembly on June 29 1967 (J-Y. Morin & J. Girard, 1978):

- democratization and increased accessibility of higher education,
- rationalization and uniformization of structure,
- diversification and polyvalency of programs,
- formation of higher level technicians,
- revival of pedagogy,
- socio-cultural development and
- increase of all resources necessary to education.

Understanding these objectives is important, because some of them have a direct influence on the objectives of professors and students.

1.3 - Objectives pursued by professors

Because of the diversity of disciplines offered in CEGEPs, compounded with changing personalities and aspirations of professors, this list will not be exhaustive, only descriptive of four general tendencies with respect to the objectives of CEGEP professors:

- self image,
- tenure and job security,
- social and political views and
- professionalism.

Some professors are very concerned about how they are perceived by their students (N. Kroman, 1978). They want to fit the students' image of a "good teacher" in order to be accepted by the group. This can be referred to as compliance to group norms in order to keep good standing with the group (J. Kelly, 1975). Tenure and job security is probably the objective pursued by the greatest number of professors. The pursuit of this objective leads inevitably to a lack of initiative and even intellectual mediocrity, if the reward system is tied with student evaluation (N. Kroman, 1978).

Several professors will take advantage of the status their position gives them to pass on to their students personal ideas about social or political issues. The result of this is a lack of knowledge for students who happen to be taking such a class. This may be confused by some with a lack of professionalism. It is not so, because the latter refers to the quality of teaching and the integrity of the professor. For example, some professors are very knowledgeable but incapable of transmitting their knowledge to other people. On the other hand, other professors are not qualified because they simply do not possess enough information about the subject they happen to be teaching. There is still another category of professors for whom teaching is simply a sideline, their main occupation being something else: this most often results in some sort of "je m'en foutisme", "I couldn't care less" attitude and again leads to a lack of professionalism.

1.4 - Objectives pursued by students

The majority of students will have one or several of the following objectives in mind when getting into a class:

- pass the course,
- acquire knowledge and/or
- exchange ideas.

At all times, but more so at the conclusion of a term, a lot of students are concerned, indeed obsessed, with passing the course and/or with the grade they will receive. In fact, they are so preoccupied with respect to this "rite de passage" that they are in no position to objectively define a good teaching method (N. Kroman, 1976). The amount of knowledge desired varies greatly from one student to another because of the different goals and interests. Different teaching styles are therefore applicable. As was mentioned before, some students' interest is to pass the course with minimal effort, no matter how much they learn. A minority of students come to class with the firm belief that they know as much as anybody else, the professor included. As such, they perceive the role of a professor as being the coordinator of class discussions.

1.5 - Communality of objectives

Is it possible to establish some sort of communality between all the objectives that we have discussed? We think that it is impossible to link up all objectives of all parties involved. However, some communality can be established between all parties. This common factor could be labeled the "formation of useful citizens". Such an objective would satisfy the CEGEPs themselves because there would be more people with a higher education, better technicians and a general increase in the socio-cultural level.

On the other hand, professors would also be satisfied because achieving this objective would bring them approval and acceptance by students. It would also bring them job security because they would have met the school's objectives. However, professors with personal centered objectives or showing a lack of professionalism would not be satisfied, but then, in our opinion, they should have no place in the education system. Finally, students would be very contented as being "useful citizens" is one of their chief concerns (as we intend to demonstrate in our survey of students at CEGEP St-Laurent). Some people will claim that students, like many of us, do not know what their long term interests are. This is true for some students, not all. And in any case, effective career counsellors in schools could deal with this problem very effectively. Those individuals who claim that students should not have input into the education system could not be farther from reality, in this day and age of women's liberation and minority movements (N. Kroman, 1978).

1.6 - Ways of measuring teacher effectiveness

This section of the study will outline the results obtained in previous studies on teacher effectiveness. It will be broken down into the following separate sub-sections:

- A) Teacher behavior dimensions, course characteristics, and student evaluation of teachers (D. Solomon, 1966);
- B) Student ratings of teacher effectiveness: validity studies (W.J. McKeachie & Y-G. Lin, 1971);
- C) Teaching styles of vocational teachers judged as more or less competent (B.W. Tuckman & H.S. Fabian, 1977);
- D) An analysis of communalities between studies.

A) A study by D. Solomon

This survey was conducted on a sample of 229 teachers of adult evening courses from five schools across the United States. The only instrument used for the evaluation was a questionnaire on which the students described their teacher's behavior. From a list of 69 descriptive items a factor analysis revealed the existence of ten factors or professors' characteristics. These were:

- lecturing vs student participation,
- energy, facility of communication vs lethargy, vagueness,
- criticism vs tolerance,
- control vs permissiveness,
- warmth vs coldness,
- obscurity vs clarity,
- dryness vs flamboyance,
- organization vs informality,
- nervousness vs relaxation and
- impersonality vs personal expression.

The only significant relationships found between the factor ratings of professors and the student evaluation of the instructors were on the first two factors as indicated by Table 1.1.

Table 1.1 - Relationship Between Teachers' Factor Scores and Student Ratings of Teachers that Are Significant at the .01 Level

Factor	Factor Score	Student Evaluations of Instructor		
		High	Low	χ^2
1	High	28	81	43.2
	Low	83	37	
2	High	83	42	35.4
	Low	28	76	

As can be seen, "student participation" and "energy & facility of communication" are two determinants of teacher effectiveness as perceived by students. The results obtained in this study were found to be quite similar to those of previous studies despite the differences between them in methods of data collection and samples. This would tend to justify a certain confidence in those dimensions of teacher behavior as measures of effectiveness.

B) A study by W.J. McKeachie and YG. Lin

What will be reported here is not a single study, but in fact a series of five studies carried out by the authors to verify a set of hypotheses. As a matter of fact, two sets of hypotheses were used. The first one was that teacher effectiveness, as measured by student performance on the "Introductory Psychology Criteria Test", would relate positively to the following factors:

- "Skill" of professor,
- amount and degree of "Group Interaction" and
- "Feedback" received by students.

The first study was conducted on a sample of 297 male and 392 female students of 33 general psychology classes and 17 professors. They selected 46 variables to represent six factors, namely: "Skill", "Difficulty" (or "Overload"), degree of "Structure", "Feedback", "Group Interaction" and "Warmth" (or "Student-Teacher Rapport"). The three hypotheses were confirmed as indicated by Table 1.2. In addition to this, the level of "Warmth" of a professor was discovered to be related to this person's teaching effectiveness.

These results led the authors to pose a second set of hypotheses:

- that "Difficulty", "Structure" and "Feedback" factors should relate more positively to success for women, than for men;
- that "Group Interaction" should be more positively related to effectiveness for men, than for women;

Table 1.2 - McKeachie & Lin, 1971, Study 1

Validity of Student Ratings of Faculty:
Correlations of Student Ratings with Average
Achievement of Teachers' Students (Study 1)

<i>Student Rating Factor</i>	<i>Correlation with Intro. Psych. Criteria Test</i>
1. Skill	.25*
2. Overload (Difficulty)	.04
3. Structure	-.03
4. Feedback	.35*
5. Interaction	.30*
6. Rapport (Warmth)	.42*

N = 37 classes

* Significant at .05 level.

Table 1.3 - McKeachie & Lin, 1971, Study 1

Validity of Student Ratings of Faculty:
Correlations of Student Ratings with Average
Achievement of Teachers' Students (Study 1)

<i>Student Rating Factor</i>	<i>Males</i>		<i>Females</i>	
	<i>Thinking</i>	<i>Knowledge</i>	<i>Thinking</i>	<i>Knowledge</i>
1. Skill	.04	-.05	.14	.13
2. Overload (Difficulty)	.08	.39*	-.18	.27
3. Structure	-.29 ²	-.30	.25 ²	-.21
4. Feedback	-.05	-.06	.33*	.40*
5. Interaction	.33*	.14	-.01	.13
6. Rapport (Warmth)	.16	-.11	.31	.29

N = 34 classes

² Significance of difference between men and women is at .05 level.

- that high "Warmth" should be more effective for women, than low "warmth";
- that "Structure" should be more positively related to "Knowledge", than to "Thinking" outcomes and "Group Interaction" more positively related to "Thinking", than to "Knowledge" measures.

The two additional dimensions, namely "Knowledge" and "Thinking", are defined as follows: a measure of "Knowledge" is a test of student knowledge in the field of psychology and a measure of "Thinking" refers to a test of psychological thinking. Hence, the data from the first was submitted to further analysis, the results of which are shown in Table 1.3. Although not all hypotheses were verified, the amount of "Feedback" received was more related to effectiveness for women, "Group Interaction" was more related to success for men and a "Warm" professor was more effective for women. The amount of "Group Interaction" also turned out to be more positively related to "thinking" measures.

The desire to prove their other hypotheses and achieve more reliable conclusions through reproduction of the same results, led McKeachie and Lin to replicate the study on a new sample of 345 male and 405 female students of general psychology, taught by 16 professors. The results of this second study are presented in Table 1.4.

Table 1.4 - McKeachie & Lin, 1971, Study 2

Validity of Student Ratings of Faculty:
Correlations of Student Ratings with Average
Achievement of Teachers' Students (Study 2)

Student Rating Factor	Males		Females	
	Thinking	Knowledge	Thinking	Knowledge
1. Skill	-.21	-.17	-.30	-.10
2. Overload (Difficulty)	.04	.33	.07	.32
3. Structure	.18	.12	.26	.07
4. Feedback	.19	.17	.28	.13
5. Interaction	-.21	-.18	-.30	-.12
6. Rapport (Warmth)	.19	.17	.31	.12

N = 32 classes; 16 teachers

Table 1.5 - McKeachie & Lin, 1971, Study 3

Validity of Student Ratings of Faculty:
Correlations of Student Ratings with Average
Achievement of Teachers' Students (Study 3)

Student Rating Factor	Males		Females	
	Essay	Knowledge	Essay	Knowledge
1. Skill	.26	-.50	.65*	.01
2. Structure	-.60	.43	.14	.56
3. Feedback	-.23	.23	-.46	-.04
4. Rapport (Warmth)	.10	-.39	.17	-.27

N = classes; 6 instructors;

Again, "Difficulty" was more related to teaching effectiveness for men as hypothesized. However, "Structure" this time was more important for women and "Feedback" remained more effective for female respondents as well as "Warmth". "Group Interaction" however, was negatively correlated to success for men, while "Structure" was again more important for women and again more related to "Thinking", not "Knowledge" outcomes.

The third study is an earlier survey conducted before the two previous ones and its results are depicted in Table 1.5. In this study, the "Thinking" measure is replaced by "Essay", or the ability of students to write an essay test in psychology. The least we can say after comparing the different results is that there are serious contradictions and that all hypotheses are far from being proven: "Skill" reentered the picture as a measure of effectiveness of professors, but in terms of "Essay", not "Knowledge". "Warmth" was still correlated with effectiveness, but more for men than women. This time, "Feedback" was more related to "Knowledge" outcomes and more important for men. "Structure" however, remained more important for women but related more to "Knowledge" instead of "Essay" measures.

The fourth study is again an earlier survey; respondents were taken from a second year French course. On this occasion, teaching effectiveness factors were studied in relation to three student success measures: a test of "Oral" expression, a test of French "Grammar" and a "Reading" test. The results are outlined in Table 1.6. "Skill" was found to be more important for women and so was "Structure". However, "Warmth" was not a reliable measure of effectiveness.

The fifth and last study was conducted on a sample of 208 students of introductory economics and 18 lecturers. It was designed to measure the correlation between the behavioral factors of professors and, "Attitude Sophistication" of students and "Grade" obtained. The results of this survey are outlined in Table 1.7. As can be seen, "Skill" was more important for women and again "Structure" was positively related to effectiveness, but only for women. "Feedback" was more important for male respondents and "Warmth" was negatively correlated for both groups. "Change in Beliefs", a new factor depicting the ability of a professor in changing the beliefs of students, was found to be related to effective teaching, even more so for women.

Three conclusions can be drawn from these five studies:

1. a "Skilled" professor is more effective for female students;
2. a "Structured" teacher is more effective for women;
3. "Warmth" or rapport between the professor and his students is related to teaching effectiveness. This relationship is seemingly more important for women.

Table 1.6 - McKeachie & Lin, 1971, Study 4

Validity of Student Ratings of Faculty:
Correlations of Student Ratings with Average
Achievement of Teachers' Students (French)

Student Rating Factor	Males			Females		
	Oral	Grammar	Reading	Oral	Grammar	Reading
1. Skill	.05	-.02	.33	.54	.48	.13
2. Structure	-.16	-.06	.13	.49	.41	.15
3. Feedback	-.51*	-.17	.01	.33*	.34	.34
4. Rapport (Warmth)	-.02	.15	.19	-.02	.32	-.19

N = 16 classes

Table 1.7 - McKeachie & Lin, 1971, Study 5

Validity of Student Ratings of Faculty:
Correlations of Student Ratings with
Average Achievement and Change in Attitude
Sophistication of Teachers' Students (Economics)

Student Rating Factor	Male		Female	
	Grade	Attitude Sophistication	Grade	Attitude Sophistication
1. Skill	.37	.11	.72*	.43*
2. Structure	-.41*	-.15	-.15	.26
3. Feedback	.33	-.05	.24	.19
4. Rapport (Warmth)	-.32	-.03	-.30	-.12
5. Change in Beliefs	.31	.09	.18	.44*
6. Value of the Course	-.14	-.10	.34	-.07

N = 18 classes

C) A study by D.W. Tuckman and M.S. Fabian

This study was designed to deal with four dimensions of teaching,

namely: - Creativity,

- Dynamism,

- Organization & Control and

- Warmth & Acceptance.

Its purpose was twofold:

1. to determine if teachers judged by their principals to be more competent, differed from those judged to be less competent, on the four dimensions of teaching;
2. to determine if teachers rated as more competent on a competency instrument, differed from those rated as less competent, again on the four dimensions of teaching.

The survey was carried out with a sample of 62 professors. These teachers were first rated by their supervisors on a scale from zero to ten (barely competent to exceedingly competent) with respect to each of the four dimensions of teaching mentioned. The results of this are reported in Table 1.8. Another measure of teacher effectiveness was derived from the "Pedagogic Competency Instrument" (PedaComp). The results of this second rating are shown in Table 1.9. The professor's teaching style was measured on a semantic differential scale called the "Tuckman Teacher Feedback Form" (TTFF, see Exhibits 1-a & 1-b).

Table 1.8 - Correlations of teacher competency as judged by supervisors
with the four dimensions of the TTF (Tuckman & Fabian, 1977)

<u>Dimension</u>	<u>More Competent</u>		<u>Less Competent</u>		<u>t-test</u>	<u>Significance</u>
	<u>χ^2</u>	<u>sd</u>	<u>χ^2</u>	<u>sd</u>		
Creativity	26.42	5.20	21.53	5.83	3.48	.001
Dynamism	26.69	6.20	23.03	7.16	2.15	.001
Control	35.60	5.85	29.58	6.85	3.76	.001
Warmth	33.23	5.40	30.98	5.11	1.68	.05

Table 1.9 - Correlations of teacher competency rated on PedaComp with
the four dimensions of the TTF (Tuckman & Fabian, 1977)

<u>Dimension</u>	<u>PedaComp</u>	<u>Significance</u>
Creativity	.27	.05
Dynamism	.31	.05
Control	.68	.001
Warmth	.26	.05
Average	.60	.001

Person Observed _____ Observer _____

Date: _____

TUCKMAN TEACHER FEEDBACK FORM (Short Form)

1.	ORIGINAL	___	:	___	:	___	:	___	:	___	:	___	CONVENTIONAL
2.	PATIENT	___	:	___	:	___	:	___	:	___	:	___	IMPATIENT
3.	COLD	___	:	___	:	___	:	___	:	___	:	___	WARM
4.	HOSTILE	___	:	___	:	___	:	___	:	___	:	___	AMIALE
5.	CREATIVE	___	:	___	:	___	:	___	:	___	:	___	ROUTINIZED
6.	INHIBITED	___	:	___	:	___	:	___	:	___	:	___	UNINHIBITED
7.	ICONOCLASTIC	___	:	___	:	___	:	___	:	___	:	___	RITUALISTIC
8.	GENTLE	___	:	___	:	___	:	___	:	___	:	___	HARSH
9.	UNFAIR	___	:	___	:	___	:	___	:	___	:	___	FAIR
10.	CAPRICIOUS	___	:	___	:	___	:	___	:	___	:	___	PURPOSEFUL
11.	CAUTIOUS	___	:	___	:	___	:	___	:	___	:	___	EXPERIMENTING
12.	DISORGANIZED	___	:	___	:	___	:	___	:	___	:	___	ORGANIZED
13.	UNFRIENDLY	___	:	___	:	___	:	___	:	___	:	___	SOCIABLE
14.	RESOURCEFUL	___	:	___	:	___	:	___	:	___	:	___	UNCERTAIN
15.	RESERVED	___	:	___	:	___	:	___	:	___	:	___	OUTSPOKEN
16.	IMAGINATIVE	___	:	___	:	___	:	___	:	___	:	___	EXACTING
17.	ERRATIC	___	:	___	:	___	:	___	:	___	:	___	SYSTEMATIC
18.	AGGRESSIVE	___	:	___	:	___	:	___	:	___	:	___	PASSIVE
19.	ACCEPTING (people)	___	:	___	:	___	:	___	:	___	:	___	CRITICAL
20.	QUIET	___	:	___	:	___	:	___	:	___	:	___	BUBBLY
21.	OUTGOING	___	:	___	:	___	:	___	:	___	:	___	WITHDRAWN
22.	IN CONTROL	___	:	___	:	___	:	___	:	___	:	___	ON THE RUN
23.	FLIGHTY	___	:	___	:	___	:	___	:	___	:	___	CONSCIENTIOUS
24.	DOMINANT	___	:	___	:	___	:	___	:	___	:	___	SUBMISSIVE
25.	OBSERVANT	___	:	___	:	___	:	___	:	___	:	___	PREOCCUPIED
26.	INTROVERTED	___	:	___	:	___	:	___	:	___	:	___	EXTRAVERTED
27.	ASSERTIVE	___	:	___	:	___	:	___	:	___	:	___	SOFT-SPOKEN
28.	TIMID	___	:	___	:	___	:	___	:	___	:	___	ADVENTUROUS

Figure 1.-The Tuckman Feedback Form (TTFF)
(Reprinted by permission of the author)

Person Observed _____ Observer _____

Date: _____

TUCKMAN TEACHER FEEDBACK FORM -- FEEDBACK SUMMARY SHEET

A. Item Scoring

I. Under the last set of dashes of the sheet of 28 items write the numbers 7-6-5-4-3-2-1. This will give a number value to each of the seven spaces between the 28 pairs of adjectives.

II. Determine the number value for the first pair, Original-Conventional. Write it into the formula given below on the appropriate line under Item 1.

For example, if you place an "X" on the first dash next to "Original" in Item 1, then write the number 7 on the dash under Item 1 in the summary formula below.

III. Do the same for each of the 28 items. Plug each value into the formula.

IV. Compute the score for each of the 4 dimensions in the Summary formula.

B. Summary Formula and Score for the Four Dimensions

I. Creativity

$$\text{Item } (1 + 5 + 7 + 16) - (6 + 11 + 28) + 18 \\ (_ + _ + _ + _) - (_ + _ + _) + 18 = _$$

II. Dynamism (dominance and energy)

$$\text{Item } (18 + 21 + 24 + 27) - (15 + 20 + 26) + 18 \\ (_ + _ + _ + _) - (_ + _ + _) + 18 = _$$

III. Organized Demeanor (organization and control)

$$\text{Item } (14 + 22 + 25) - (10 + 12 + 17 + 23) + 26 \\ (_ + _ + _) - (_ + _ + _ + _) + 26 = _$$

IV. Warmth and Acceptance

$$\text{Item } (2 + 8 + 19) - (3 + 4 + 9 + 13) + 26 \\ (_ + _ + _) - (_ + _ + _ + _) + 26 = _$$

Figure 2.—The feedback summary and scoring sheet for the Tuckman Teacher Feedback Form

The sole reliable conclusion that could be drawn from the results of the study was that more competent professors were better organized and more in control of their classes than the less competent ones. Caution must be exercised not to confuse this "Organization & Control" dimension with "Directiveness", as good "Organization & Control" often reduce the need for strong "Directiveness".

D) An analysis of communalities amongst studies

Although a unique dimension of teaching, predictive of effectiveness, cannot be found common to all three studies, two measures of effectiveness are each found in two different studies:

- degree of "Skill" of a professor and
- degree of "Structure" of a professor.

"Skill" is found in Solomon's study as factor 2, "Energy and Facility of Communication" and in McKeachie's and Lin's study as their "Skill" factor. "Structure" is outlined in McKeachie's and Lin's survey as their "Structure" factor and presented in Tuckman's and Fabian's research as their "Organization and Control" dimension. One can therefore be fairly confident about the ability of these factors to predict reliably effectiveness of professors. Other factors that were mentioned but for which a communality could not be established were, "Student Participation" in Solomon's study and "Warmth" in McKeachie's and Lin's.

What conclusion(s), if any, can be drawn from all this? Consider the fact that students come to class with certain objectives in mind, objectives that may or may not be the same as those of the professor. In addition to this, we have also said that different students, and of course males and females, may pursue different goals. Therefore, a professor's effectiveness can only be determined in terms of specific objectives. If we were asked the question, "Which teachers are most effective?", we would be forced to answer as McKeachie and Lin did: "For which students?".

CHAPTER 2

FIELD RESEARCH OF CEGEP STUDENTS

In the course of this project, a survey of students from CEGEP St-Laurent was conducted. The following pages will depict the conditions under which the research was carried out and the results that were obtained. At this point, the author wishes to remind you that the following hypotheses were being tested:

1. That different students will require a different type of professor;
2. That male and female students demand different qualities from a professor;
3. That qualities demanded of a professor are related to the personal values of students.

2.1 - Methodology

Any given research can be conducted in many ways. The method that will be utilized must be determined before the survey is carried out, much in the same way that blueprints must be established before a house is built (G.A. Churchill, Jr., 1979). Furthermore, whatever methodology is used, it will have some influence on the results of the research. This is why it is important to report the research methods, in any serious study.

A) Research design

Our research design is "descriptive" in nature. It is intended to describe the characteristics of a good professor with respect to a demographic variable: sex. Although the words "study" and "survey" are used interchangeably in this report, this research is undoubtedly a "cross-sectional" "field study", because it is more concerned with the in-depth analysis of a few situations: the size of the sample utilized is insufficient to qualify it as a "field survey" representative of some universe.

B) Data collection method

In our attempt to collect primary data, we decided to rely on the communication method, that is, questioning people using a data collection instrument called a questionnaire. Ours is a translation of a questionnaire used previously. The original can be found in APPENDIX I and the translation in APPENDIX II. All questions were undisguised, meaning that their purpose was known to the respondents. Two types of questions were utilized in this first draft: structured and unstructured (answers are suggested & open ended answers).

C) Pretest

The first version of our questionnaire was tested on a sample of 29 students (18 males and 13 females). The results of this can be found in APPENDICES IV & V. Our purpose was twofold:

- to state the problem and formulate the hypotheses, and
- to detect shortcomings and improve the questionnaire.

Four changes were made in the final version of our questionnaire (see APPENDIX III):

- the demographics section was redesigned to make it easier to answer,
- all unstructured questions were removed to make analysis and interpretation easier,
- 16 additional semantic scales were added to the semantic differential scale, based on answers obtained in questions 1, 2, 3,
- 9 questions seeking to determine personal values of students were added. These were taken from a survey conducted at "Université de Montréal" (J. Lamontagne and R. Therrien, 1977).

D) Sampling

Before speaking about the sampling procedures and the sample itself, certain facts must be kept in mind with respect to CEGEP St-Laurent's total student population (see Table 2.1).

Table 2.1 - Student population by sector, level and sex (CEGEP
St-Laurent's 1978-79 annual report)

<u>Sector</u>	<u>Level</u>	<u>Males</u>	<u>Females</u>	<u>Total</u>	<u>Percentage</u>
General	I	417	378	795	23.9%
	II	511	446	957	28.8%
	Total	928	824	1,752	52.7%
Professional	I	355	297	652	19.6%
	II	280	292	572	16.0%
	III	242	142	384	11.7%
	Total	877	691	1,568	47.3%
<i>Techniques Administratives (incl in total)</i>	I	—	—	105	—
	II	—	—	86	—
	III	—	—	78	—
	Total	—	—	269	8.1%
Total		1,805	1,515	3,320	
%		54.4%	45.6%		100.0%

There were no complicated sampling procedures involved here. The respondents were simply the students of three classes taught by the author and one class taught by a colleague. Originally, the sample was to be over 100 respondents but a prolonged strike in the collegial sector forced us to restrict this number to 69. There were 48 males and 21 females in the sample and all respondents were students of the department of "Techniques Administratives". More detailed information about the age and level distribution of the sample can be found in APPENDIX VII.

E) Limitations

The first and most obvious drawback of our study is the lack of representativity of our sample due to its small size and composition with respect to the total population. We will therefore have to exercise caution with respect to the conclusions we draw from our survey: the findings may establish meaningful factors and interrelationships, but these cannot be considered to accurately and reliably represent the dimensions of effectiveness as perceived by an "average" student from CEGEP St-Laurent. The implication of this is that our results call for further research on larger samples.

2.2 - Findings on attributes of professors

The data collected from our sample was submitted to various statistical analysis. This was performed on a Cyber 174 computer with a program called Statistical Package for the Social Sciences (SPSS); version "3.0" of SPSS was utilized.

A) Frequency analysis

The first operation to be performed on our data was a frequency analysis. The detailed results of this can be found in APPENDIX VII. However, Table 2.2 summarizes the means and standard deviations (Δ) in a graphical form. It reveals that of the 34 semantic variables, only 15 have a standard deviation of less than 1.0. What this means is that there are only 15 variables that are reliable:

1, 2, 6, 9, 10, 14, 19, 22, 24, 27, 28, 29, 31, 33 and 34 (see Table 2.3).

Students of our sample perceived the most effective professor as being somewhat "Optimistic", very "Friendly" and extremely "Fair". They preferred a very "Honest" teacher who would also be very "Kind" and also very "Cooperative". They wanted an instructor to be extremely well "Informed" (Renseigné), very "Available" and very "Precise". They perceived an effective professor as being very "Comprehensive", very "Open" and extremely "Human". Finally, they preferred an extremely "Competent", very "Reliable" person who would also be very "Responsible".

Table 2.2 - Means & Standard Deviations of Semantic Variables, Ungrouped Data

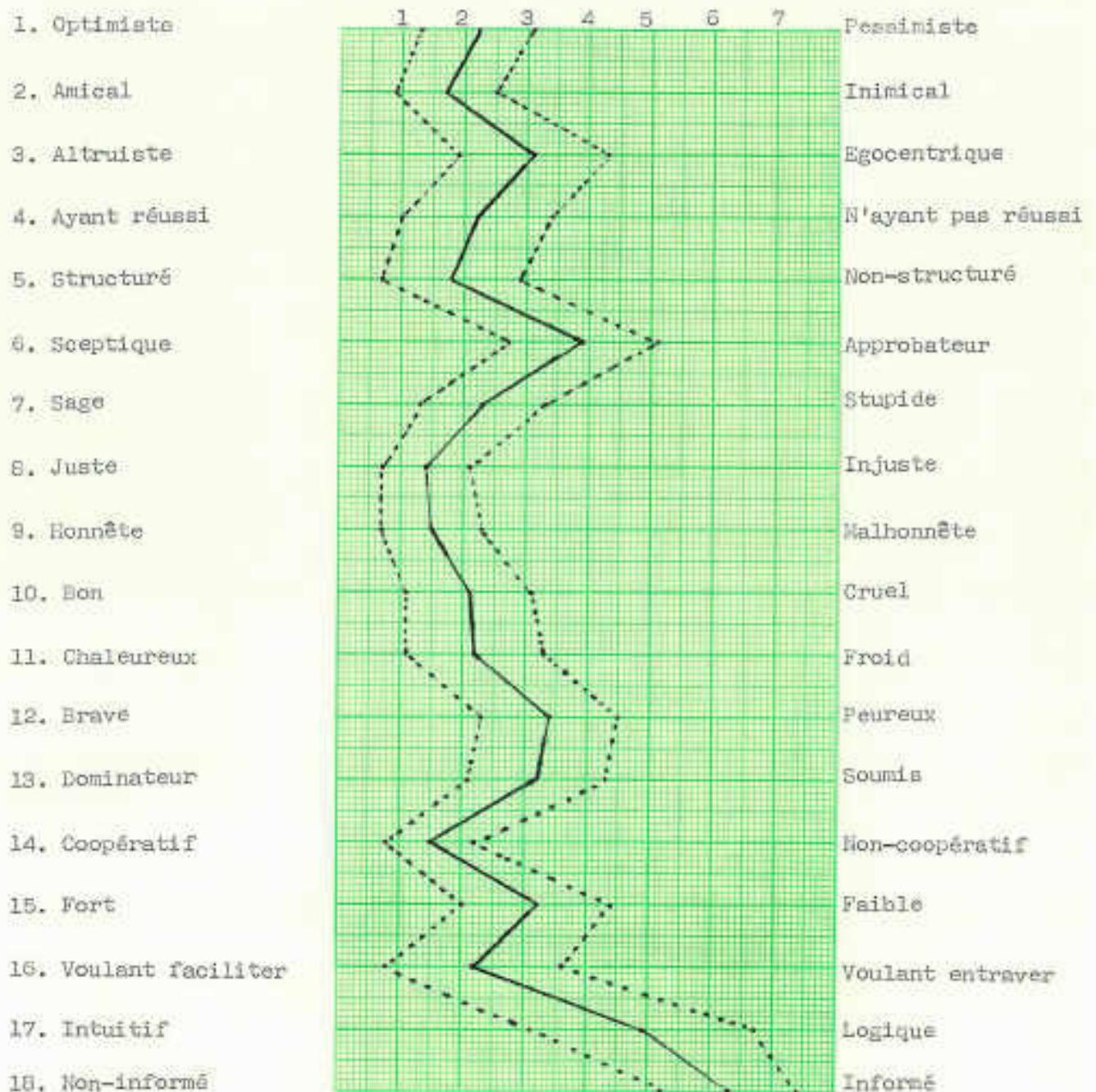


Table 2.2 - (Continued)

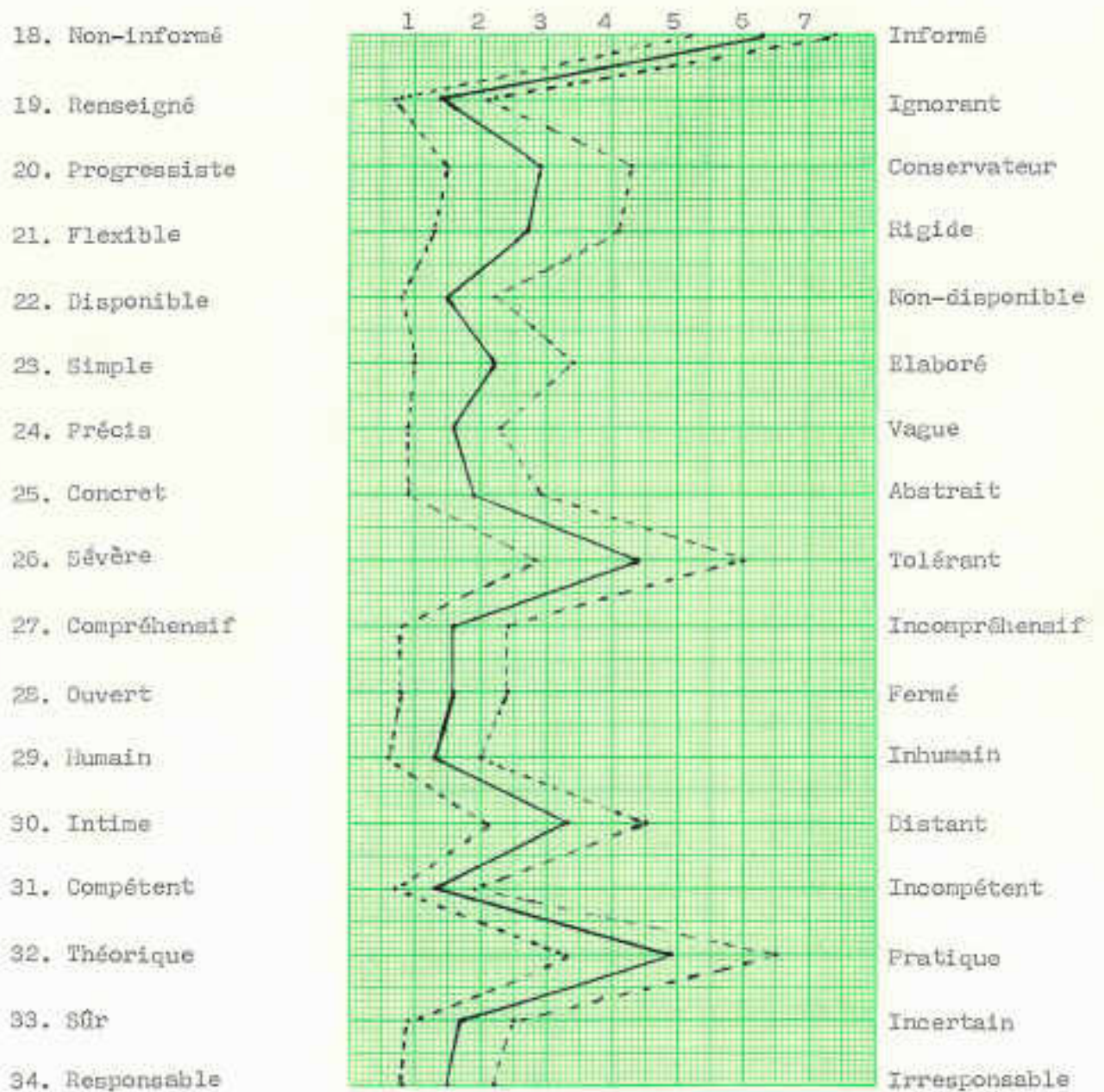


Table 2.3 - Means and Standard Deviations of Meaningful Variables.

Ungrouped Data

<u>Variable</u>	<u>Semantic Description</u>	<u>sd</u>	<u>Mean</u>
Seman1	Optimiste	.901	2.159
Seman2	Amical	.802	1.725
Seman3	Juste	.714	1.406
Seman9	Honnête	.797	1.493
Seman10	Bon	.996	2.067
Seman14	Coopératif	.720	1.507
Seman19	Renseigné	.717	1.435
Seman22	Disponible	.740	1.507
Seman24	Précis	.734	1.594
Seman27	Compréhensif	.806	1.623
Seman28	Ouvert	.776	1.565
Seman29	Humain	.660	1.348
Seman31	Compétent	.610	1.333
Seman33	Sûr	.769	1.710
Seman34	Responsable	.720	1.493

B) Factor analysis

In an attempt to make more sense of the results, we submitted the data to factor analysis. This was performed through the "Principal Component" method which generated 10 factors explaining 66.7% of the total variation (see Exhibit 2-a). There were two methods of rotation used to verify the accuracy of the factor loadings: orthogonal "Varimax" and oblique. The results of this can be found in APPENDIX VIII. The factors were labelled as following:

1. competence to teach and evaluate,
2. strong personality and control,
3. adaptiveness to different situations,
4. reliability figure with respect to information transmitted,
5. orderly, social oriented morals and conduct,
6. ease and clarity of presentation,
7. accuracy of information transmitted,
8. warm and approbatory attitude,
9. considerate towards others and
10. encouragement to active participation.

Exhibit 2-a - Percentage of Variation explained by each Factor

FACTOR	EIGENVALUE	PCT OF VAR	CUM PCT
1	5.94865	17.5	17.5
2	2.97367	8.7	26.2
3	2.55420	7.5	33.8
4	2.13006	6.3	40.0
5	1.93679	5.7	45.7
6	1.68897	5.0	50.7
7	1.56950	4.6	55.3
8	1.35414	4.0	59.3
9	1.29737	3.8	63.1
10	1.24032	3.6	66.7
11	1.13099	3.3	70.1
12	1.06290	3.1	73.2
13	.93246	2.7	75.9
14	.89534	2.6	78.6
15	.80387	2.4	80.9
16	.75620	2.2	83.2
17	.63245	1.9	85.0
18	.60093	1.8	86.8
19	.55263	1.6	88.4
20	.51727	1.5	89.9
21	.45728	1.3	91.3
22	.44173	1.3	92.6
23	.38634	1.1	93.7
24	.31300	.9	94.6
25	.27791	.8	95.5
26	.27911	.8	96.3
27	.26376	.8	97.1
28	.22351	.7	97.7
29	.19783	.6	98.3
30	.15242	.4	98.7
31	.13289	.4	99.1
32	.12155	.4	99.5
33	.10492	.3	99.8
34	.06705	.2	100.0

C) Differences between male and female students

Common sense and the fact that the author is married led me to suspect that what might be true for men might not necessarily be true for women. In our attempt to find any differences between male and female respondents and how significant these were, we have performed a "Oneway" analysis of variance, the results of which can be found in APPENDIX IX. This analysis reveals that there are only 3 semantic variables on which males differ from females, at a 95% level of significance: 12, 23, 27 (see Table 2.4). In Tables 2.5 and 2.6, you will find the means and standard deviations for respectively males and females, summarized in a graphical form.

Table 2.4 - Analysis of variance, significant differences only (.95 level)

<u>Variable</u>	<u>Semantic Description</u>	<u>Male</u>		<u>Female</u>		<u>F.Prob.</u>
		<u>Mean</u>	<u>sd</u>	<u>Mean</u>	<u>sd</u>	
Seman12	Drave	3.604	1.05	2.952	1.12	.0227
Seman23	Simple	2.458	1.25	1.571	0.90	.0054
Seman27	Compréhensif	1.771	0.86	1.286	0.56	.0203

Table 2.5 - Means & Standard Deviations of Semantic Variables, Male Respondents

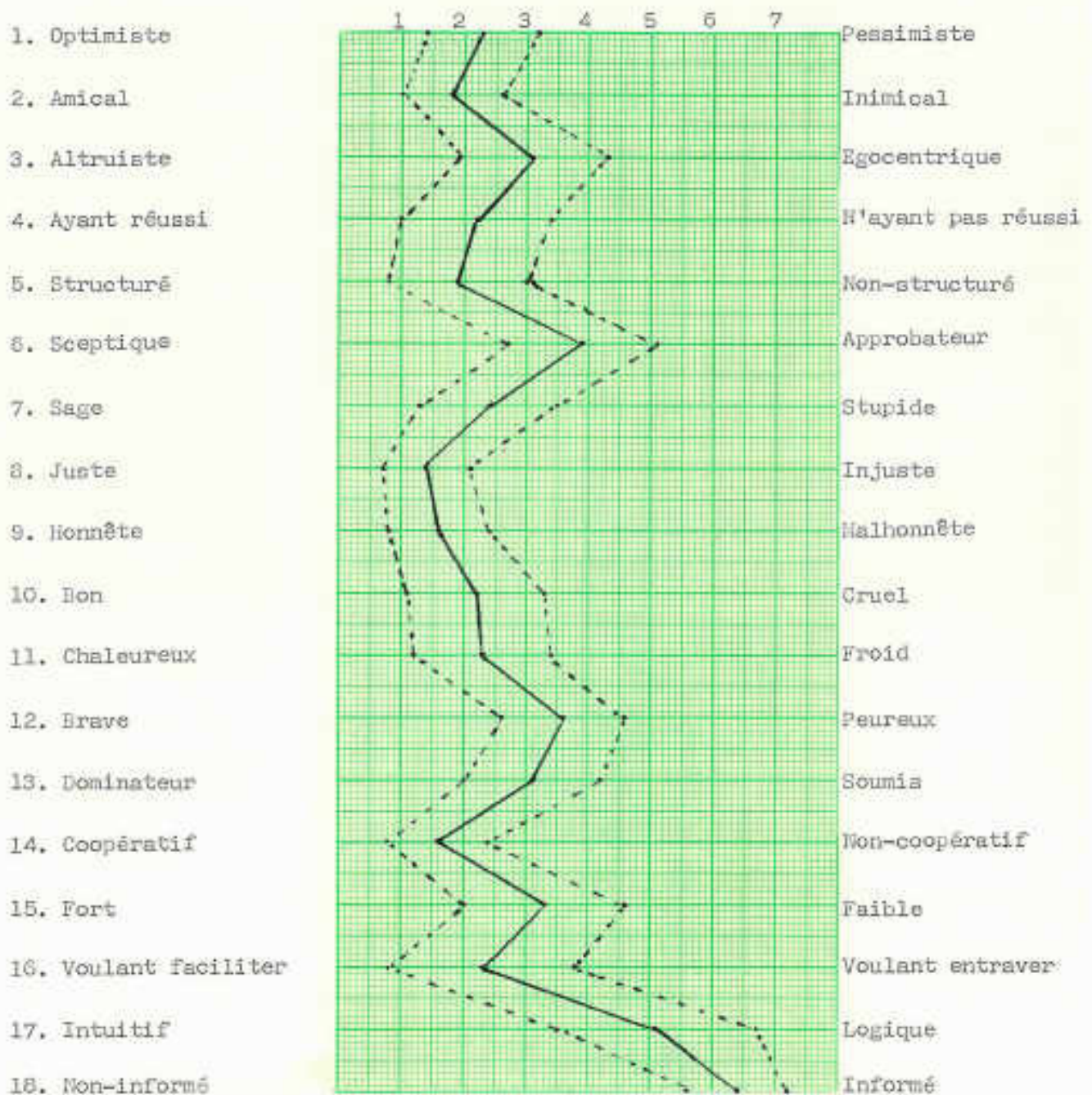


Table 2.5 - (Continued)

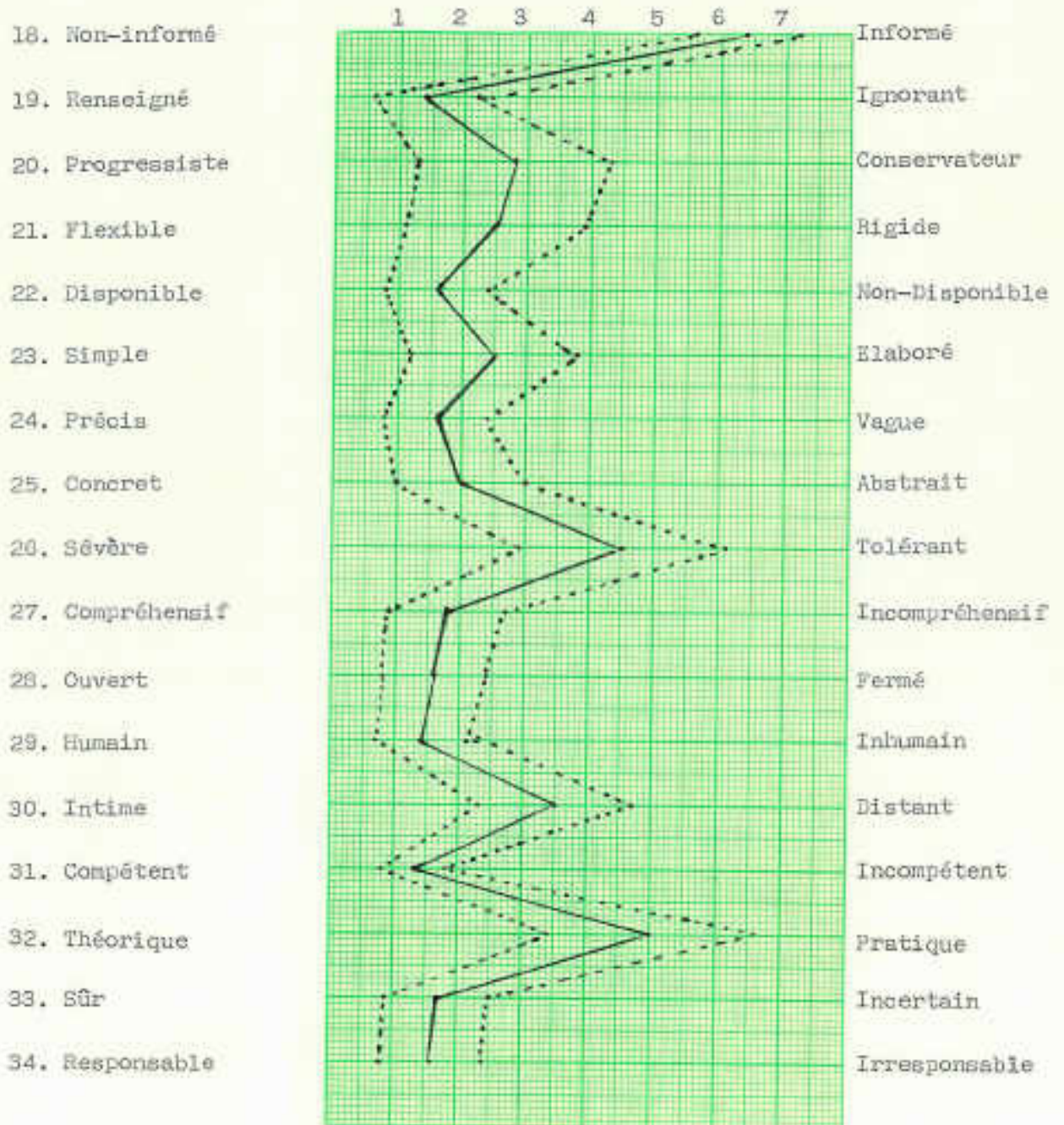


Table 2.6 - Means & Standard Deviations of Semantic Variables, Female Respondents

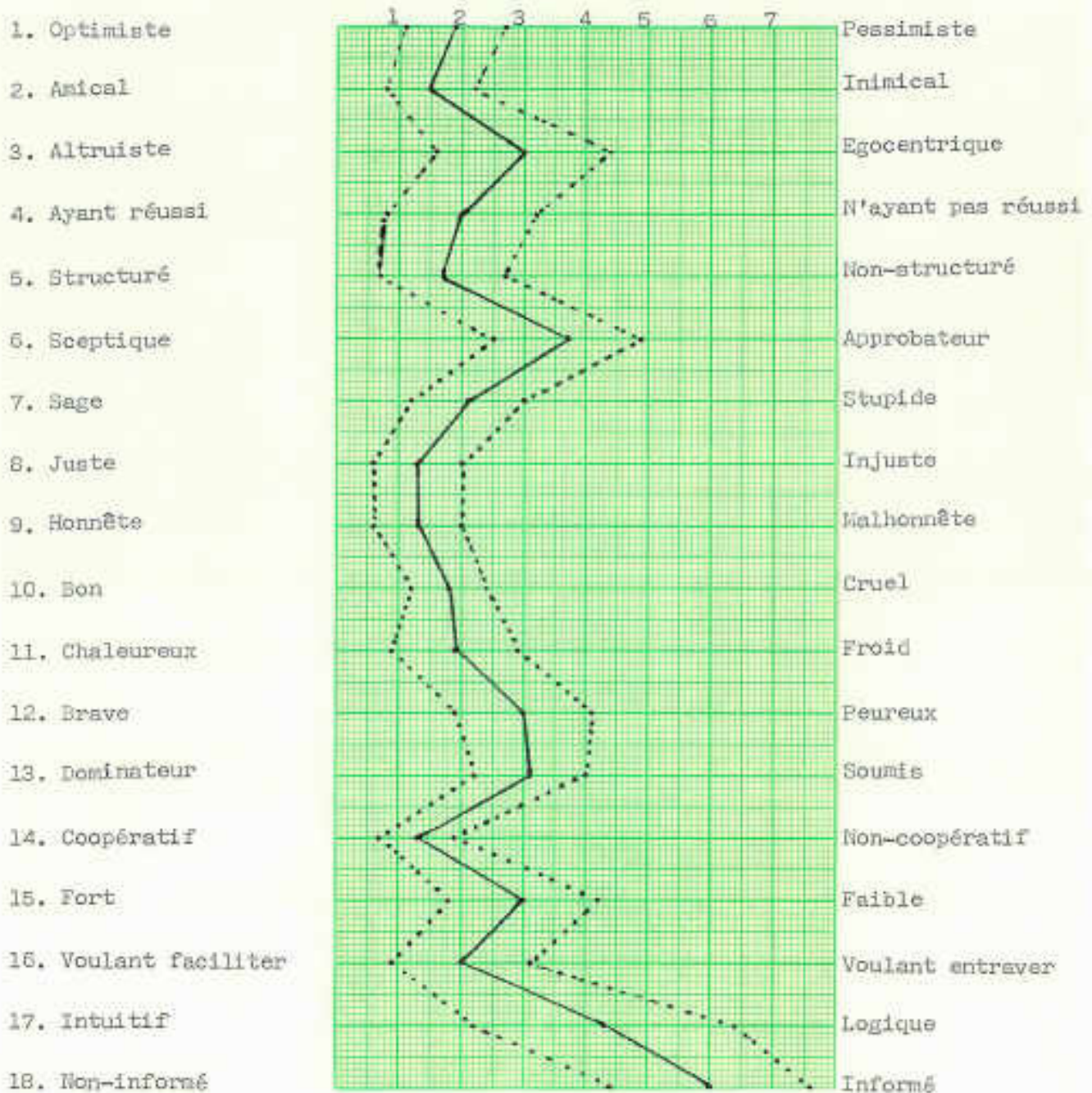
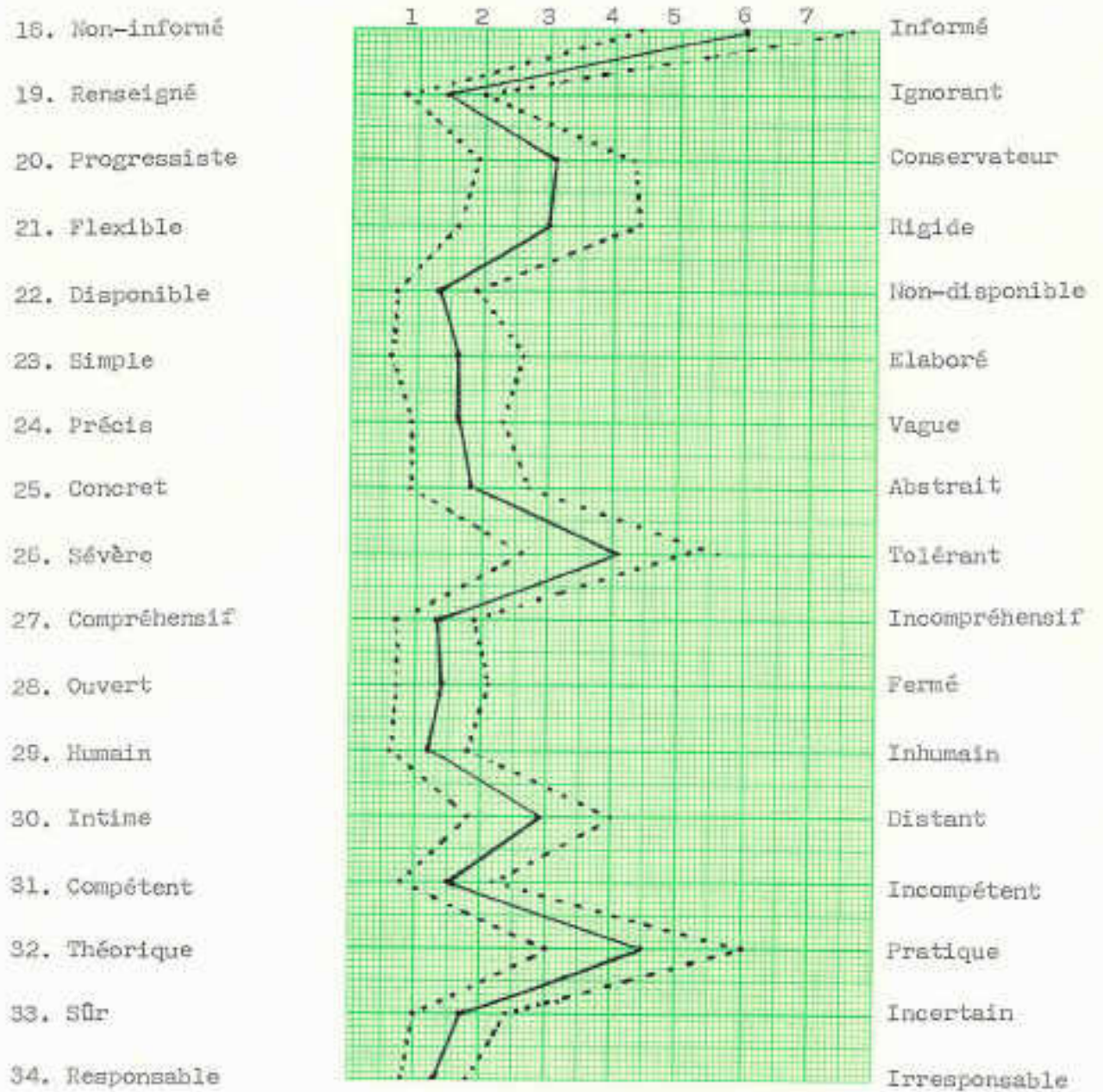


Table 2.6 - (Continued)



D) Conclusion

Of the ten factors uncovered in our study, five correspond to the factors found in Solomon's survey (1966):

- our factor two, "strong personality and control", corresponds to his factor four, "control";
- our factor six, "ease and clarity of presentation", corresponds to his factor six, "clarity";
- our factor seven, "accuracy of information transmitted" corresponds to his factor eight, "precision and organization";
- our factor eight, "warm and approbatory attitude", corresponds to his factor five, "warmth";
- our factor 10, "encouragement to active participation", corresponds to his factor one, "student participation".

The similarity between the two studies, not only separated by more than a decade but also completely different in sample and methodology, would justify confidence in those five factors as reliable dimensions of teaching effectiveness. As for our five other factors, the differences between studies may be explained by the demographic differences between samples, by the evolution of society over time and by the different needs of different students. At this point, we will not attempt to explain the differences between male and female students: this will be delayed until the analysis of student values is performed.

2.3 - Findings on personal values of students

A) Frequency analysis

In our attempt to uncover reliable personal values, we have performed a frequency analysis of our data, the results of which can be found in APPENDIX X. Because in this case our primary data is nominal (categories exist but there is no indication of size or order), means and standard deviations would be totally meaningless. What must be used instead is the mode. Table 2.7 summarizes the modes and relative frequencies of our questions on student values:

Table 2.7 - Modes and Relative Frequencies of Student Values, Ungrouped Data

<u>Variable</u>	<u>Description</u>	<u>Mode</u>	<u>Relative Frequency (%)</u>
Valu1	Ami	2	50.7
Valu2	Conduite	3	40.6
Valu3	Genre	2	36.2
"	"	3	36.2
Valu4	Préférence	2	39.1
Valu5	Tâche	1	50.7
Valu6	Qualité	4	44.1
Valu7	Changement	1	65.2
Valu8	College	4	44.9
Valu9	Rôle	4	69.6

As can be seen in Table 2.7, of the nine student personal values tested, only four have frequency percentages higher than 50.0%. What this means is that only four variables are meaningful: Valu1, Valu5, Valu7 and Valu9. In other words, students in our sample held the following personal values:

- a belief in faithful and warm friendship,
- a belief that the most important task of a union is to protect the contractual rights and interests of employees,
- a strong desire to place a high practical and technical emphasis on everything they learn and
- the perception of schools as providers of a formation adequate to perform well in our society.

B) Differences between male and female students

In our attempt to find any differences between male and female respondents and how significant these were, we have performed a "Chi-Square" (χ^2) analysis, the results of which can be found in APPENDIX XI. This analysis reveals that there are only 2 personal values on which males differ from females, at a 95% level of confidence: Valu1 and Valu9 (see Table 2.8).

Table 2.8 - Chi-Square Analysis of student Personal Values, Significant Differences between Males and Females at a 95% level

<u>Variable</u>	<u>Description</u>	<u>χ^2 (Actual)</u>	<u>χ^2 (Table)</u>	<u>Significance</u>
Valu1	Ami	10.196	7.81	0.0170
Valu8	Collège	9.421	7.81	0.0242

C) Conclusion

The four personal values that were found in our study are related to, although not exactly the same as, those uncovered by Lamontagne and Therrien in their survey of CEGEP professors, in 1977. "Friendship" found in our study is related to "involvement in a group", while the value we labelled "protection of rights and interests" is related to "global society" and "humanitarian ideals". Furthermore, "practical and technical knowledge" uncovered in our survey is related to "creativity", and finally, "good performance in society", our last value, is related to "need for autonomy" and "satisfaction with private life".

This is an indication that indeed, as we mentioned previously, the values of professors are transmitted to the students and thereby to society in general.

With respect to the differences in personal values between male and female students, they are:

- 52.1% of males prefer an efficient and practical friend, while 71.4% of females prefer a warm and faithful friend;
- furthermore, while 71.4% of women question and want to change their knowledge and value system, only 33.3% of men feel the same way.

The first difference can be explained by the fact that women are usually warmer and more affectionate than men. Furthermore, the fact that they question many things is a direct effect of the women's liberation movement.

2.4 - Synthesis and interpretation

At this point, can any sort of relationship be established between the results obtained in our study and the objectives of students defined previously? It is quite evident from our first factor, "competence to teach and evaluate", that Mr Kroman (1978) was right about students being obsessed with passing the course and with the grade they receive. Factors four and seven, "reliability figure with respect to information transmitted" and "accuracy of information transmitted", are indications that students wish to acquire knowledge.

Furthermore, factors eight, nine and ten, "warm and approbatory attitude", "considerate towards others" and "encouragement to active participation", indicate the strong desire of students to exchange ideas. Finally, factor five, "orderly, social oriented morals and conduct", reflects students' concern about being useful citizens.

Now, could the communalities amongst studies analyzed, be found in our survey? The degree of "Skill" of a professor found in studies by Solomon and by McKeachie and Lin, is represented in our survey by factor six, "ease and clarity of presentation". With respect to the degree of "Structure" of a professor found in studies by McKeachie and Lin and by Tuckman and Fabian, it is represented in our survey by factor two, "strong personality and control".

We can therefore conclude that students indeed define teaching effectiveness as the achievement of specific objectives. The fact that the same factors are found in several studies establishes the reliability of "Skill" and "Structure" as dimensions of teaching effectiveness. Finally, "Student Participation" and "Warmth of Professor", found respectively in Solomon's and McKeachie's studies, have been uncovered in our survey (factors ten and eight).

CHAPTER 3

CONCLUSION

It has been stated that the purpose of this study was to determine the qualities demanded of a professor by students at the CEGEP level. More precisely, we wished to test the following hypotheses:

1. That different students would require a different type of professor;
2. That male and female students would demand different qualities from a professor;
3. That the qualities demanded of a professor would be related to the personal values of students.

3.1 - Hypothesis "1"

The only indication that this alternative stands true is the fact that more than half of the variables of the semantic differential scale have very large standard deviations. This would seem to indicate that students do not agree on these dimensions of teaching effectiveness. However, we think that this is insufficient proof to establish the validity of our first hypothesis, since there may be other reasons for the large standard deviations: miscomprehension of the meaning of semantic variables, for instance.

3.2 - Hypothesis "2"

There are conclusive indications that female students want a professor who is "Brave" whereas this quality is almost irrelevant for male students. Furthermore, women want a professor to explain in very simple terms while men are satisfied with a somewhat "Simple" teacher. Finally, both male and female students wish their professor to be "Comprehensive", however, females demand a higher degree of comprehension. In our opinion, this constitutes sufficient evidence to consider our second hypothesis as being valid.

3.3 - Hypothesis "3"

Of the four meaningful student values namely, Valu1, Valu5, Valu7 and Valu9, only two are reflected in the dimensions of effective teaching. Valu1, "belief in faithful and warm friendship", is related to factors eight and nine, "warm and approbatory attitude" and "considerate towards others". Valu9, "perception of schools as providers of a formation adequate to perform well in our society", is related to factor five, "orderly, social oriented morals and conduct".

Furthermore, the differences in personal values between male and female students explain in part the differences between them with respect to the dimensions of teaching effectiveness. The fact that the majority of women prefer a warm and faithful friend is related

to the fact that female students demand a more "Comprehensive" professor. The fact that the majority of women question and want to change their knowledge and value system is related to the fact that female students want a more "Simple" professor. We therefore conclude that this evidence establishes the validity of our third hypothesis.

3.4 - Discussion

As was mentioned previously, the small size and composition of our sample do not allow us to consider our findings as being representative of the dimensions of teaching effectiveness as perceived by an "average" student from CEGEP St-Laurent. We have however uncovered meaningful factors and interrelationships, but those would remain to be tested on larger samples. Furthermore, testing our first hypothesis would necessitate the classification of students into different categories (types). Only then could teaching effectiveness be defined for each type of student. Finally, an interesting aspect which we have not explored is whether there is a difference in teaching effectiveness between male and female professors or not. Then, if a difference is found, to whom does it apply: to male students, female students or both?

APPENDIX I
ORIGINAL QUESTIONNAIRE

MY BEST TEACHER

1. Choose the person whom you consider to be the best professor you have "been under" at any time, anywhere. Write a sketch of that person in about fifty words, making clear why he impressed you so.

2. How did his life style affect your learning?

3. Department: Compare the management department to others in the Faculty of Commerce.

PERSONAL CHARACTERISTICS

Age: 20-30 ___
30-40 ___
40-50 ___
50-60 ___

STUDENT STATUS: Year standing (i.e. last year, 2nd year, 3rd year, etc.)

Accounting _____
Finance _____
Management _____
Marketing _____
Quantitative
Methods _____
Other
specify _____

PERCEPTION OF "BEST PROFESSOR"

I would rate the teacher who most influenced and advised me in my career by an.....X.

	N							
1. optimistic	1	2	3	4	5	6	7	pessimistic
2. friendly	1	2	3	4	5	6	7	unfriendly
3. altruistic	1	2	3	4	5	6	7	egotistical
4. successful	1	2	3	4	5	6	7	unsuccessful
5. unstructured	1	2	3	4	5	6	7	structured
6. skeptical	1	2	3	4	5	6	7	believing
7. wise	1	2	3	4	5	6	7	foolish
8. fair	1	2	3	4	5	6	7	unfair
9. honest	1	2	3	4	5	6	7	dishonest
10. kind	1	2	3	4	5	6	7	cruel
11. hot	1	2	3	4	5	6	7	cool
12. brave	1	2	3	4	5	6	7	cowardly
13. dominant	1	2	3	4	5	6	7	submissive
14. cooperative	1	2	3	4	5	6	7	resistive
15. strong	1	2	3	4	5	6	7	weak
16. facilitating	1	2	3	4	5	6	7	hindering
17. intuitive	1	2	3	4	5	6	7	logical
18. uninformed	1	2	3	4	5	6	7	informed

INCOMPLETE SENTENCES

1. I went to his class because...
2. To me "My Best Professor" is...
3. The most important decision I ever made was...
4. The biggest moment in class I ever experienced was...
5. The excitement of the class to me is...
6. My progress has been...
7. I respect him because...
8. I identify most with his qualities...
9. My greatest satisfaction in the class...
10. My contact with him since...

OPERATING PROBLEMS

"What are the three most pressing problems you feel you pose for the teacher and those who have to work with you in the class?"

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