INCREASING TEACHER EFFECTIVENESS

THROUGH CONSUMER EVALUATION

by

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Abstract

This project involved the use of a questionnaire to measure differences between a teacher's self-evaluation and that of his/her students. In addition, the utility of the questionnaire for both formative and summative evaluation was explored.

Twenty classroom teachers in the intermediate grades in three Surrey schools were asked to have their students evaluate them on the questionnaire. Teachers concurrently responded to the same questions on a separate copy. All responses were anonymous.

The results of the returns of eighteen teachers and four hundred thirty-nine students were analyzed. Each teacher's responses were compared with the average response of his/her class.

The analysis showed that there were significant perceptual differences when teachers' evaluations were compared with those of their students. Some teachers showed remarkable concurrence while others demonstrated an obvious lack of ability in seeing themselves as their students did. The results demonstrated that teachers could use student opinions to reveal teaching practices that were less than effective.

The project suggests that the questionnaire, and others like it, could be utilized in various ways to assist teachers who wish to gain more insight into areas of instruction where improvement in possible.

Acknowledgements

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Thousands of small changes made in classrooms
across the nation may well add up to more real
reform of education than sweeping policies made
far from the scene of the teaching/learning
action.
                    K. Patricia Cross

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INTRODUCTION TO THE PROBLEM

Changing Teacher's Classroom Behavior

Changing a teacher's classroom behavior to make it more effective is a prevalent theme in educational literature. The volumes of literature on the subject attest to its importance and perhaps the difficulties involved in achieving success. Though making teachers more effective is clearly desirable, the ways to achieve the changes are less clear.

There is often confusion about what behaviors need to be changed, and even when there is agreement in this area, the process becomes the focus of interest. The frustration inherent in the subject of change is expressed by Keith Beery (1974):

> There is constant demand for change in schools.
> What is meant? What needs to be changed? It
> seems to us that many people are confused about
> what education is and are wasting a lot of other
> people's time and energy trying to change
> relatively unimportant things. (p. 27)

If changing teachers' classroom behavior results in teachers becoming more effective, then children's learning and satisfaction is enhanced and teachers feel successful. How can identifying, changing, and improving teachers' less effective classroom behaviors be accomplished?

The most prevalent processes for changing teacher's behaviors are best described as vertical collaborations. A person in a supervisory capacity, usually a principal

or vice-principal, judges the effectiveness of the teachers they supervise, and makes recommendations for improvement. There are other methods of achieving changes but most involve the supervisor-teacher relationship. Clinical supervision is the main vehicle used in attempting to implement changes in teachers' behavior. This and inservice training will be briefly described in order to set the perspective for the content of this project.

Clinical Supervision

Clinical supervision may be defined as the rationale and practice designed to improve the teacher's classroom performance. By helping teachers analyze their teaching and by providing feedback, support, and encouragement, supervisors hope to promote positive change. In practice, clinical supervision involves preconferencing between a supervisor and teacher regarding subject matter to be viewed, and methods of collecting data on teaching behavior for analysis. Observation, data collection and post conference analysis of data with discussion of changes round out the model. In practice, clinical supervision has not achieved the success hoped for. Smyth (1982) points this out in his analysis of clinical supervision:

> What remains problematic at the moment is knowledge about effective ways of introducing teachers and principals to the rationale, philosophy, processes...in a way that enables adoption. In short, we are only beginning to become knowledgeable about the complexity of successful implementation. (p. 2)

A change in the emphasis on the goals of clinical supervision from evaluation to teacher growth and a collegial atmosphere changed the role of the supervisor from earlier models. It did not, however, automatically translate to successful implementation of change. Johnson (1983) notes:

> The greatest change was that teachers had to learn to trust the supervisors. Often, the more experienced the teacher, the deeper was the distrust and the more difficult the change. (p. 6)

The obstacle blocking the success of clinical supervision may be the teacher's realization that those who supervise also evaluate. It is unrealistic to expect a teacher to accept that information gathered during classroom visitations for formative purposes will be totally ignored during a future writing of an evaluation. The helpful supervisor is viewed with suspicion if he/she wears the evaluator's hat at a later date. This becomes evident when teachers need advice concerning teaching problems. Most often, a colleague will be chosen as the advisor. Wilson (1986) encountered this problem when, in his research, he attempted to find consultants to help teachers improve their classroom practice:

> It is difficult for faculty members to obtain useful ideas to deal with such teaching problems. They are usually reticent about asking a colleague or the department chairperson and they are reluctant to ask for help from those who will be involved in later decisions about their careers. (p. 96)

Supervisory Skills Training

A training program for enhancing clinical supervision skills is given to administrators in Surrey. These supervisory skills training workshops have as their objective the improvement of the skills involved in helping teachers change undesirable behavior. At the first workshop, a great deal of time was spent on developing interpersonal skills designed to develop trust between teacher and supervisor. Though Cogan's Cycle of Supervision (1973) was the model followed, the majority of activities involved practising skills which would help supervisors develop trust between themselves and their teachers. Follow up activities utilizing these skills required volunteer teachers in the schools. Many administrators reported that teachers were generally reluctant to participate. Later, a refresher session was given in the same series. A change that was evident was that peer supervision was becoming more acceptable. Teachers, rather than administrators, were allowed to observe their peers and assist in the change process. In the Langley school district, the title of the workshops had been changed from Supervisory Skills to Peer Observation Skills. The evolution from vertical to horizontal collaboration indicated that this approach might be more acceptable and thereby more realistic.

One main obstacle in helping teachers to achieve growth in their classroom teaching skills appears to be the inclusion of a person in a supervisory capacity who is also responsible

for the summative evaluation of that teacher's professional

status. Added to the evaluative dimension of the problem

is the question of the validity of a principal's judgement

of teacher effectiveness. Many teachers are suspicious

of these judgements because they are often made without

reference to the myriad of variables that each classroom

teacher faces given the unique situation he/she works in.

In a recent study, Medley and Coker (1984) supported this

concern:

> Nearly all decisions about teachers' roles stem
> from judgements of their effectiveness - judgements
> usually made by principals...the small number of
> studies of the validity of principals' judgements
> (or of ratings based on them) that have been
> reported in the literature have yielded consistently
> negative findings. Each such study has concluded
> that there is no appreciable agreement between
> principals' judgements of teachers' effectiveness
> and student learning. (p. 138)

Curriculum Inservice Training

Another widely utilized method of trying to produce

changes in teacher behavior is through curriculum inservice

training. In this model teachers, usually volunteers, are

asked to implement a new curriculum idea or teaching strategy.

A recent study by Drs. Wasserman and Ivany (1985) offers an

insight into the effectiveness of this avenue of change.

In the study, 36 hours of pre-implementation training

in primary science instruction was given. Teachers'

participation was voluntary. The training was administered

by "high functioning" teachers, many with years of experience.

Materials used had been successful in other contexts. A

full year of in classroom support and help was provided
to the client on a regular basis. Of the fourteen teachers
who completed the project, seven showed no measureable
change in teaching behavior after two years of inservice
participation, six showed some improvement and three
performed at mastery levels. The implications of the study
were:

-the re-training of teachers was a formidable task...

 especially where patterns were deeply entrenched.

-it is a difficult task for teachers to change

 themselves. The difficulty is increased by the

 demands of full time teaching.

-those few who are intrinsically motivated to grow

 and change will make the most substantive gains.

The authors of the study state:

> ...if substantial inservice training efforts
> result in humble payoffs we may well look at our
> inservice training in a much broader light to
> understand the difficulties we face in promoting
> change. Specifically we might begin to look at
> the amount of dollars, energy and time we spend
> in school districts on Professional Days and two
> hour inservice workshops, and the potential they
> have for effecting teacher change in the light
> of the data above. (p. 22)

Perhaps the shortcoming in the effectiveness of inservice
training is that its subject matter may be suggested by
those in administrative positions who perceived a need for
it. Other experts may also find resistance where teachers
view the changes as unnecessary or as solutions looking
for problems. Again, if the changes are "laid on" and not
in response to teacher concerns, they may be difficult to

implement. As Marvin Wideen (1987) explains:

> Staff development frequently conjures up the
> image of teachers needing repair, because they
> lack something. They sit, they listen, they
> learn what others apparently know about how
> they should improve. (p. 12)

The information is often too general to be of value. A

recent British Columbia Teacher Federation article by John

Hardy (1987) points out that:

> The key to the whole thing is planning...where
> teachers come up with what they want. Ownership.
> Teachers teaching teachers. P.D. as a dynamic
> teacher sparked activity is alive and well.
> (p. 15-16)

Again, a change from vertical to horizontal collaboration

may be a key to successful inservice training. Teachers,

in meeting to discuss their needs, are more likely to suggest

topics which have relevance to their situation.

An Alternative Approach

In spite of the general lack of success of clinical

supervision and other methods to affect change, teachers

do change and improve their instructional behavior. The

recognition given the experienced over the inexperienced

in teaching suggests that experience is a catalyst which

facilitates growth. Change as the result of experience

may be one important way in which growth occurs. Is it

the reaction to the stimuli received in the classroom that

leads to enduring changes in classroom behaviors?

In the course of a single lesson, a teacher reacts

to silence, noise, laughter, misbehavior, hands raised or

not raised, and a host of other signals. As a result,

teachers adjust those elements in teaching that they feel

will lead to success in achieving the goals of the lesson.

These continuous adjustments made over a period of time,

result in a teacher's perception of what is good practice

and help determine that teacher's style. The effective

practices are retained in the teacher's attempt to maintain

the dynamic equilibrium desirable in a classroom. As the

teacher becomes more experienced, his/her teaching takes

on a unique quality, not unlike a teaching personality.

Changes suggested in regard to this teaching behavior may

therefore, be taken very personally. As Flanders (1963)

suggested when he described an inservice project relating

to teachers changing their classroom behavior:

> Our purpose was to come as close as we could to
> creating a schoolwide atmosphere of professional
> inquiry in which the object of inquiry was the
> teacher's own behavior. Such an atmosphere is
> uncommon. (p. 26)

Questioning a teacher's classroom behavior is often not

accepted in the same spirit as it is given.

> Within the profession, as well as within our
> society, restraints against becoming involved
> with the emotional aspects of behavior are
> commonplace. Few individuals are prepared to
> handle emotionally toned compliments or
> criticism smoothly and skillfully. (p. 26)

Negative feedback is not easily accepted by teachers who

have put so much of themselves into their classroom work.

If however, the negative feedback is the result of that

teacher's own research, it might be acceptable and provide

an impetus for change.

Using Consumers

If the teacher, interested in his own professional growth, can determine the method and help design the scheme for evaluating his teaching, much of the threat associated with clinical supervision may be avoided. By supplementing clinical evaluation with a teacher's own evaluation scheme, the goal of instructional improvement might be more readily attainable. Conclusions reached at a Canadian Teacher's Federation Workshop (1982) support this idea:

> On a more positive note, where teacher evaluation is viewed as a means of improving instruction - rather that mere rating - self-appraisal instruments such as those developed by Ontario, Nova Scotia, and Saskatchewan Teacher Organizations can become an important part of the total evaluation process. Needless to say, these instruments have been designed to hold no threat to a teacher's security or self-esteem. Teacher self-appraisal can occur and result in some kind of changed teaching behavior only when the teacher perceives minimal external threat, and sees the process of observing and describing himself and his behavior as an opportunity rather than a threat. (p. 16)

A process that is non-threatening involves the use of the students in the classroom. By utilizing the opinions of those who receive the instruction, the consumer client, the teacher can identify areas perceived to be needing improvement. This project suggests that students in the intermediate grades can provide the evaluation necessary to convince the teacher to examine aspects of his or her teaching behavior. In demonstrating that the teacher's perception of self may not be completely accurate, the need for this kind of evaluation can be established.

In providing the teacher with data on his/her teaching behaviors from a source that he/she perceives as legitimate and non-threatening, change might be more acceptable. Through the inclusion of the administrator/evaluator in planning an evaluation using consumers, the problem of what needs to be changed is objectively determined. This might eliminate much of the problem incurred by the lack of trust mentioned earlier. With a co-operative attitude, agreement on the elements of how changes in a teacher's behaviors can be made will be more readily attained.

Increasing Teacher Effectiveness Through Consumer Evaluation

In this project and the questionnaire it utilizes, I hope to:

1. Show that teachers' perceptions about their teaching may differ from that of their students. If this is confirmed a case can be made to develop questionnaires that would point out the areas in which teachers can react, and perhaps change, to better meet the needs of pupils.

2. Verify that students in the intermediate grades are capable of relevant instructional perception and can therefore assist in evaluating teacher effectiveness.

3. Present my questionnaire as an example of one that is easily administered, quickly interpreted, non-threatening, and one that reveals important information that a teacher can utilize to improve instruction in the classroom.

4. Suggest viable alternatives to current practises in
    promoting desirable change in teaching behavior.

Some assumptions made are:

1. Teachers wish to improve their instructional methods.

2. Supervisory personnel would welcome teachers taking
    the initiative in presenting evaluative materials,
    sharing results, and formulating improvement plans
    based on the results.

3. Students as consumers, are in general, sophisticated
    enough to assist in identifying weaknesses in the
    instruction they receive.

4. Teacher's perceptions of their teaching effectiveness
    may differ from those of their students.

5. Teachers feel less threatened by self and client
    evaluation than by supervisor evaluation.

6. Teachers can accept the results of student evaluation
    and will feel inclined to make changes they perceive
    will lead to improvement of instruction.

Limitations of the Project

The size of the survey involving 18 teachers and 439
students limits the number of pupil to teacher comparisons
to 18. The survey was administered by the classroom
teacher. Each classroom would have a different level of
trust between pupils and teachers. In surveys such as this,
it is impossible to determine whether the students are
answering the questions as to how they perceive the teacher,

or whether they are answering as they feel the teacher might
expect them to respond.

The statistical analysis is limited to a comparison
of the average of class responses compared to that of the
teacher. All participating teachers were volunteers who
may have been more highly motivated than non-volunteers.

Definitions

Effective-as in effective teaching, producing the desired
        learning outcomes through application of the most
        efficient and appropriate practice available.

Evaluation-reflection upon practices, attitudes, etc. of
        a teacher for the purpose of promoting growth
        and/or teacher assessment.

Formative-suggestions, observations made to assist teachers
        in concluding what is or is not effective teaching
        practice.

Summative-data collected for purpose of writing a formal
        report on a teacher

Enlightened-highly subjective term, as used here implies
        a willingness to accept change, reflect on past
        practices, democratizing wherever feasible.

Chapter 2

LITERATURE REVIEW

The descriptor used for a literature search was "teacher evaluation by students". For the purposes of this project, the review focused on those studies which:

1. involved self-assessment by teachers.

2. used consumers as a source of information for teacher evaluations.

3. offered an approach to self-evaluation that combines aspects of consumer evaluation with supervisor evaluation.

Teachers and Self-Evaluation

Studies which focus on teacher evaluation in which teachers systematically collect data and apply it to their situation in order to increase their effectiveness are not readily found in the literature. This lack of information is confirmed by Bailey (1987):

> Research studies relating to teacher self-assessment
> as the term is defined here are virtually non-existent.
> While this statement may alarm some readers, it is
> important to remember that teacher self-assessment
> is in its early stages of development. (p. 11)

It appears that there is limited motivation for teachers to take the time to become involved in self-assessment projects. Busy schedules and lack of expertise may in part, be responsible.

> Persons want to evaluate themselves in order
> to obtain an accurate picture of their own abilities...
> but there are only a few studies indicating that
> some teachers are self-directing in their learning
> and expend effort in judging their behavior. Not
> having received training on how to focus on relevant

aspects of their work, most teachers tend to
criticize superficialities, personal mannerisms,
appearance, voice and use of materials.
(Wilson, R., 1986. p. 292)

Little, if any, motivation is present for a teacher to take

time to devise self-evaluative schemes. Peck and Tucker

(1973) surmised that the value of such activities may not

be worth the effort. "Apparently, simply looking at one's

own performance does not lead to much new insight as to

what one is doing, or else it does not provide adequate

motivation to alter that pattern." It appears that because

there is no real benefit to be derived and no pressing reason

for doing it, self-evaluation is at present, not in itself

a priority among the professional tasks of a teacher.

Consumers and Evaluators: Validity and Reliability

Consumer evaluation and the rationale for using it

is clearly described by Payne and Manning (1984).

Pupil ratings are frequently used as criteria for
judging teacher performance. Proponents of pupil
ratings suggest that such data are invaluable for a
number of reasons. First, pupils are the ultimate
consumers. Second, pupils are in daily association
with the teacher. Third, the use of pupil ratings
eliminates the expense of training outside
observers. Last, on practical grounds, it is
easier, quicker and less expensive to use pupil
ratings than those of trained observers. (p. 26)

Giving those who are taught an opportunity to comment

on their teachers may have value beyond that of teacher

evaluation. Meighan and Emerson (1977) observed that:

not only is this a reliable and effective way
of monitoring teacher behavior effectiveness, but
it has overwhelming important side effects. One
of the side effects is in giving pupils the

satisfaction of being consulted on matters
affecting them. The dialogue between
teacher and students is an important avenue
by which support or grievance can be
addressed. (p. 30)

Support for the validity of using consumer evaluation

is found in a number of studies including those of Wood

(1984), Cortes and Grayson (1978), Masters (1978). The

research confirms that students' judgements about their

teachers' behavior agrees with that of experienced classroom

teachers and trained observers. In a study involving more

than 1600 sixth graders, 53 teachers were evaluated and

the results compared with those of adult observers. The

conclusion was that "Class evaluation of teachers appear

to be reliable, valid, useful measures of teacher behavior"

(Fox, Ronald, et al, 1983). Kronowitz and Finney (1983)

had elementary students judge their student teachers'

performance in the areas of planning, instructional skills,

behaviors, classroom organization and control. It is important

that students be able to provide the explicit information

necessary to give teachers feedback on which they can reflect

and thereby modify practice. The results taken from the

student evaluations in the Kronowitz and Finney study were

compared to those of trained adult observers. It was found

that the students could assess teachers' performances

accurately; and more importantly, the students could also

discriminate among teaching tasks. Albrecht (1970) found

administrator and peer ratings were correlated with the

ratings of pupil evaluations. All studies that were reviewed

found that students in all grades, including elementary

grades down to fourth year, could provide consistent and

reliable data.

Teachers' Perspective on Consumer Evaluation

From a teacher's perspective, the Canadian Teacher's

Federation report on a 1982 workshop on teacher evaluation

had the following comments:

> In recent years, particularly at higher levels
> of education, student ratings have been receiving
> a fair amount of attention. Some supporters of
> student ratings argue that, because the students
> observe their teacher in action many hours each
> week, they are the best judges of the quality of
> their education.
> ...Most people agree that student ratings could
> be useful if done fairly and effectively. Teachers
> I have spoken with are generally interested in what
> students think of them, as long as the student input
> is kept confidential and not used as any form of
> witch hunt. Unfortunately, many of the instruments
> currently being used in students' rating of
> teachers are very broad. They are also subjective,
> in that they only reflect students' attitudes and
> opinions. The new result is that often the ratings
> get at specific minor problems rather than at
> actual teaching factors...Student feedback has
> distinct ADVANTAGES for teachers interested in
> improving instruction:
> 1. Research has shown that feedback from students
>   can be an effective means of helping teachers
>   improve instructional skills.
> 2. Students who are given an opportunity to
>   provide feedback sense that the teacher wants
>   to improve instruction. Hence, students develop
>   a more positive attitude since the instructor
>   values their opinion.
> 3. Student feedback provides an opportunity for
>   the teacher to obtain additional information
>   about his or her instructional behavior.
>   Teachers need not be totally dependent on the
>   evaluator's opinions. (p. 88)

The acceptance of student feedback in providing input

for teacher evaluation is a powerful argument. Teachers

have often felt that evaluation, whether it be formative

or summative is "laid on from above" with little apparent

objectivity and without self input. The objectivity provided

by a data collecting tool might help overcome the feeling

of powerlessness experienced when the evaluation is of a

hierarchical nature. The lack of instruments available

for evaluating will be overcome only when all parties involved

accept the usefulness and validity of the process. As the

concept of teachers as classroom researchers becomes more

widespread, the necessity for evaluative instruments will

be realized. Teacher enthusiasm for this process and

demonstration of a willingness to change behaviors based

on sound classroom data will be necessary. The effectiveness

of using students as one source of the data from which

decisions can be made cannot be overlooked.

With so much agreement on the value of using students

as teacher evaluators, why is the practice not widespread

throughout the educational system? Some observations by

McKelvey and Kyraicon (1985) shed some light on this question.

> The evidence in favor of the use of pupil
> evaluation of teaching performance seems to
> fall into three categories: its validity, its
> usefulness, and its social implications.
> Evidence of validity comes from much of the
> research noted, often comprised of stability
> of other subjects and agreement with more
> acceptable evaluators (ie. teachers, teacher
> trainers, and/or researchers). (p. 28-31)

The social basis for the unacceptability of pupils

as observers is part of the overall historical position

of power which rests in the hierarchy of school administration.

The control which administrators have over teachers is in

part, a result of their responsibility for evaluation and

report writing. In recent years, particularly in the 1980's,

there has been a strong tendency to include those affected

by decisions in the process of those decisions. Monkhouse

(1986) forsees this trend as one which is over due in

educational decision making.

> In the eighties the responsibility has shifted
> to where it should probably have been all along -
> in the hands of everyone who will be affected by the
> change. The emphasis now is on working co-operatively.
> (p. 9)

Should this trend continue, the students' evaluations

might become an acceptable and even perhaps a routine part

of formative and summative evaluation. This would help

to partially alleviate teacher concerns about the lack of

objectivity involved in the hierarchical supervisory forms

of evaluation. Inclusion of a third party, one directly

affected by most aspects of teacher's classroom behavior,

adds a new dimension to data collected for evaluations.

A Proposal For Increasing Teacher Effectiveness Using Consumers

In bringing together the students, teachers and supervisors

as part of the process of formative and summative evaluation,

many of the shortcomings associated with evaluation are

overcome. The students benefit from inclusion in the process.

They may feel important when asked to evaluate their teachers.

The distance between teacher and student is somewhat narrowed

when both are involved in an important, co-operative experience.

Teachers feel a sense of control that makes the results

of evaluation more acceptable. The supervisor has another

source of data that can be reflected upon in light of his/her

own observations. In the literature reviewed, only one

study (Wilson, R., 1986) resembled the ideas put forward

here. Although it involved the post-secondary level, the

process and the results were interesting. In this study,

peer consultants were used. A parallel system in which

an enlightened administrator provides this function is

possible. What follows is a brief description of the study

conducted by Wilson.

> To give direct help to faculty members in
> improving their teaching, we chose a
> consultation process that gives them good
> ideas about how to improve those aspects of
> their teaching in which students have rated
> them low. (p. 207)

The consultants were peers who had no part in any scheme

of summative evaluation. The evaluation included questions

relating to the areas of: organization, clarity of

presentation, analysis and synthesis of the lesson, teacher-

student interaction, and enthusiasm. Students and teachers

responded to the same questionnaire. Ninety-six faculty

members participated in the three year study.

Items rated low by students were discussed with

consultants. Ideas for improvement were selected from a

previously compiled "ideas book". This added some objectivity

to the suggestions given by the consultants. The object

of the study was to "determine whether giving ideas for

improving particular aspects of instruction was associated

with positive changes in students' ratings of a teacher's

performance." The difference between the first year and

the following years' ratings were compared statistically
to determine changes in the mean response on the two different
occasions. The conclusions were:

1. The consultation process was associated with
    statistically important change in overall
    teaching effectiveness ratings for 52% of
    the faculty.
2. Half of the faculty showed positive changes
    on nine of ten items for which suggestions
    were given.
3. Items on which the greatest number of faculty
    showed statistically important changes were
    those for which the suggestions were most
    concrete, specific and behavioral.
    (ibid, p. 209)

A second group of teachers used the same rating survey
but were excluded from the consultation process. They
received no suggestions about making improvements and showed
no significant change in the ratings students gave them
in the following year.

Inclusion of Another Person

The importance of having another person involved in
the process is reinforced by Peck and Tucker (1973), who
found that available evidence all indicated that teachers
use feedback to make changes in their teaching style only
if another person participates in the feedback session.
Having another person provide feedback has the twin advantage
of offering different perspective on the data as well as
being a source of ideas for possible improvement. Apparently,
simply looking at one's own performance does not lead to
significant new insights as to what one is doing, or else
it does not provide the necessary motivation to incur change.

The involvement of another person adds a strong motivational
factor. If that person were a supervisor looking to see
the results of a teacher's goals for instructional improvement,
in a non-threatening manner, the motivational factor may
be a potent one. In many schools, a statement of goals
and objectives is requested of teachers by administration
early in the school year. Inclusion of an element involving
teaching practices could be requested. Having the teacher
identify his/her problem areas and planning ways to solve
them, empowers the teacher and leaves the administrator
in the role of facilitator of the process. Whether peers
or administrators are utilized as consultants is the teacher's
responsibility. In this way, the goal of instructional
improvement is addressed and the responsibility for change
is appropriately given those best equipped to carry it out,
namely the classroom teacher. Other researchers, Fuller
and Manning (1973), Tuckman, McCall and Hyman (1969), also
found that the inclusion of a "peer or supervisor is more
likely to produce significant changes in teaching behavior".

Summary

The literature suggests that:

1. Teacher self-evaluation is likely to be more effective
    given the inclusion of another person to provide motivation.
2. Pupil ratings of teachers are valid and consistent with
    peer and supervisor ratings.
3. Teachers, in accepting the validity and usefulness of

pupil ratings, can make changes in their effectiveness
based on these ratings.

A plan for improvement of instruction, whether for
formative, summative or both types of evaluation is possible
given the proper climate. This would require teacher input
from the beginning of the process concerning the tool used
for evaluation. It would need the presence at times of
an enlightened supervisor or helpful peer. The other person
would need to have a good understanding of effective teaching
strategies and the ability to impart them in a supportive
manner. The results could lead to improvement in instruction,
student satisfaction with the process, and if agreeable,
summative evaluation data.

Chapter 3

THE QUESTIONNAIRE

In an attempt to find what needs to be changed and
to establish that students can be effective in helping to
make those determinations, the questionnaire for this project
was developed. The focus of the study was to point out
discrepancies in teachers' perceptions of self and those
of their students. If it could be shown that student input
can identify areas of weakness for the classroom teacher/
researcher, the value of the questionnaire is established.

The questions attempt to focus on some of the attributes
of classroom teaching which may impact on the teacher's
instructional effectiveness. The student's perception of
the teacher's organization, knowledge, inventiveness, and
sense of direction comprise part of the questionnaire.
Personal qualities such as approachability, caring, trust
and satisfaction are also included. The tone of the
questionnaire is intended to be positive and to reflect
those qualities that are typically found in a competent,
effective teacher.

Substantive precedents for using a questionnaire survey
to achieve the stated objective exist in the literature.
The methodology and form are found in many of the studies
that utilize student opinion for evaluation of teachers.

A review of guidelines for questionnaire surveys from
Borg (1979) and Berdie (1986) assured the efficacy of this

approach and led to the following considerations:

    -layout and organization should promote ease of

      completion

    -instructions should be brief and concise

    -items should be interesting and clearly relevant

      to respondents

    -pretesting should be done in order to establish

      reliability and validity in order that:

    1. each item stimulates accurate, relevant data

    2. items convey the same meaning to all respondents.

Because each questionnaire is unique and must be tailored

to fit the particular research, further considerations included:

    -a reading comprehension level suitable for intermediate

      students.

    -the amount of time needed to complete the questionnaire

      so that teachers would not find its administration

      an imposition.

    -items to be non-threatening in nature so that teachers

      and students would have a willingness to respond in

      an honest manner.

    -anonymity of all respondents.

Consideration was given to these criteria when the questions

were developed.

Procedure

    Upon receiving the survey package the teachers distributed

the students' copies and retained the one marked "teacher"

for themselves. Directions for administering the
questionnaire were included with each package (Appendix
A). The teacher was asked to read the directions to
students and respond to the items on his questionnaire while
his class did their copy.

Content of Questionnaire

In selecting the content for the questionnaire, reference
was made to "Profiles of Teaching Competency" (1973) by
Wasserman and Eggert. This document identified behavioral
or teaching profiles related to competent classroom
performance. It was designed to "identify weaknesses and
determine directions for possible growth". With this
information as a source of ideas, 20 questions deemed
suitable in vocabulary level and comprehension for intermediate
grades were written. These were organized so as to employ
a Likert 4-point scale. The column titles from left to
right read: Almost always, Often, Sometimes, and Almost
never. The questions were grouped as follows:

Questions 1-6: solicit student opinions as to the
teacher's feeling about the job and
his/her commitment to it. Key words
such as "knows, has good ideas, is
happy" are employed to this end.

Questions 7-15: assess the quality of pupil-teacher
interactions. Helpfulness, caring,
trust, and approachability are some

of the qualities that the questions

probe. Also included are questions

which allow the students to express

the levels of freedom and democracy

allowed by the teacher.

Questions 16-20:attempt to gain a comment on the teacher's

ability to make education interesting

for the class and the student's general

enthusiasm for attending.

Questions 21-22:give the student an opportunity to

enlarge on any of the previous items

or to express feelings concerning positive

or negative elements of the class.

Pretesting

The questionnaire was initially used by three teachers
and their students at the grade 6 and 7 level. The purposes
were to identify areas for teacher improvement. The teachers
involved helped make revisions, that in their opinion, were
necessary to meet the objectives of this study.

Administering the Questionnaire

The first consideration was to have an outside neutral
figure administer the questionnaire. The advantages would
be in the consistency of approach and in negating the
possibility that the classroom teacher's presence would
influence student responses. This method was rejected in

favor of the classroom teachers administering it. Several
reasons were advanced by colleagues in reaching this decision:

1. Most importantly, teachers tend to be suspicious and
    nervous about evaluation generally. Putting a stranger
    into the classroom was considered to be too unnerving
    for many teachers.

2. The risk of losing the goodwill of some teachers by
    suggesting that their presence might influence the
    results was considered.

3. The success of the initial piloting of the questionnaire
    was a factor to be considered.

4. The questionnaire, if used in future, would be given
    by teachers.

5. If baseline data were established for future consideration,
    consistency of the "test" procedure was necessary.

     It was decided that the teacher should administer the
questionnaire to his/her own classroom. It was possible
that by using the classroom teacher the results might not
be as revealing as with having an outside administrator.
The possibility that students might be less than candid
when evaluating their teacher in his/her presence was
recognized. However, because the classroom teacher could
do his/her evaluation paper concurrently and in the presence
of the students, the teacher-administrator was considered
to be advantageous. The teacher, occupied with completion
of the paper, could be perceived as a participant and not
as an overseer.

Instructions To Teachers

The rather difficult question of instructions for the teacher was debated on several separate occasions that involved input from different colleagues. The problem seemed to be one of semantics and perception. Was the teacher to answer as he felt he would rate himself, or was he to respond in the same manner that he felt his pupils would respond? Would there be a perceptual difference either way? The decision was to request that the teacher respond as to how he felt his students, on average, would respond. The choice was made solely for the sake of consistency.

Sex of the respondents, age, and grade were included should this information be significant when examining the results.

Enlisting volunteers

In April 1987, through a network of colleagues, information concerning the study was given to teachers describing the purposes and outlining the procedures involved. Twenty classroom teachers from grades 4 through 7 in three separate schools, volunteered to be a part of the study. All schools in the sample were suburban elementary schools from the Surrey School District. A contact person in each school distributed class sets of the questionnaires and collected them immediately after completion. Within two weeks, 18 of the 20 classroom teachers had returned the completed sets. Responses from teachers and students in

these 18 classrooms became the source of the data for the study.

Organization of Results

After the class sets were collected, numbers were assigned to each school and to each class within the school. The class numbers were used to identify the teacher. This number was entered on the teacher copy of the questionnaire (Appendix A). When the averages of the student's responses were computed, the responses of the teacher would be compared.

When the returns were received, each class set of questions were coded and kept with the teacher's coded copy. An example of the original and coded papers ready for computer analysis appears in Appendix A. The individual items were marked in the margins as follows:

1. almost never

2. sometimes

3. often

4. almost always

These results were forwarded to the computing services at S.F.U. for computation.

The analysis of the data was to reveal the mean of each question by class in order to compare it with the teacher's self-evaluation.

Statistical Treatment

The mean and standard deviation of the student's response

for each question 1 through 20 was given for each school
and class. Also included was the frequency of responses
for values 1 (almost never) through 4 (almost always).
Teacher responses for each class were taken from the
questionnaire and compared question by question with the
mean of student responses. The differences between the
two yielded the "perceptual differences" values.

The mean of all student responses by question was also
reported and is referred to as "baseline data" (Appendix C).

Chapter 4

RESULTS

The purpose of the questionnaire was to determine
if there was a measurable difference between a teacher's
self-perception and that of his or her students in
regard to various teaching behaviors. Using 20
questions and a Likert-type scale, student respondents
gave their opinions. Teachers responded to the same set
of questions, attempting to see themselves as their
students saw them. Questions 21 and 22 requested of
students a written response concerning most and least
liked "things" about their classes. The results of
questions 1 through 20 were coded so that computed results
would compare the average student response with that of
the teacher of the class . This information was completed
for each of the 18 classes surveyed.

In order to satisfy the purpose of the questionnaire,
the primary analysis focused on the congruence of the
values of teacher and class averaged responses. A
further analysis examined the direction of response from
the teacher perspective to determine if the teachers
rated themselves more or less favorably than their
students did. Individual questions were checked to see
which ones would invoke the largest number of differences
in perception.

The subjective responses of students yielded categories
which could be compared to see what differences might occur
in student responses between three schools. Finally, an
example of a practical application of the data was given
to show how a teacher could use the information to detect
areas of possible improvement.

Moderate Perceptual Difference Values

In order to determine whether the perceptions of
teachers and students were congruent, the average response
value of each class was compared with the response value
of the appropriate teacher. On the scale used, 4 categories,
each with a value of 1 whole number, measured the responses
of both teacher and students. To check for perceptual
differences, the teacher's whole number response (1-4)
was compared to the average response of each class to each
question. The differences were subtracted. A minimum
difference in value of .5 was arbitrarily selected to
determine the number of differences by teacher and grade
(Table 1). This information would reveal to what extent
teachers differ in the accuracy of their self-perception.
The main observation from these data is the number of
differences at this level. Eight of the eighteen teachers
showed a difference at .5 and above on 10 or more
questions. The contrast in perceptual accuracy between
teachers with the most and least differences is noteworthy.
Almost half of the group, eight teachers, had differences

TABLE 1

NUMBER OF PERCEPTUAL DIFFERENCES BY TEACHERS
AT .5 VALUE AND ABOVE

Teacher	Grade	Number of Differences
1	6-7	7
2	6	7
3	4-5	8
4	7	5
5	5	13
6	4	8
7	6	7
8	5	10
9	5	6
10	6	11
11	6-7	11
12	7	11
13	7	10
14	5	9
15	5-6	5
16	7	12
17	4	8
18	7	12

at this level. On fifty percent of the items they perceived

themselves quite differently than did their students. In

contrast, two of the teachers had differences at that level

on only 5 questions. Generally, at this level of difference

there is not much congruence between the two groups. Some

teachers' perceptions of self are closer to those of their

students than others.

Substantial Perceptual Difference Values

A second comparison was made to discover the perceptual differences at the level of 1.0 or more. These numbers would indicate a very substantial perceptual gap in that a full category difference would exist between averaged student scores and those of individual teachers. This information is shown in Table 2.

TABLE 2

NUMBER OF PERCEPTUAL DIFFERENCES BY TEACHERS
AT 1.0 VALUE OR MORE

Teacher	Grade	Number of Differences
1	6-7	2
2	6	0
3	4-5	0
4	7	1
5	5	3
6	4	2
7	6	1
8	5	3
9	5	0
10	6	2
11	6-7	5
12	7	3
13	7	3
14	5	6
15	5-6	2
16	7	1
17	4	2
18	7	2

From these observations, the level at which teachers rate

themselves compared to their class average is quite varied.
Three teachers showed no differences while teachers number
11 and 14 had differences in perception in at least 25%
of the categories. Again, the observation can be made that
there is a significant difference between some teacher's
self-perception and that of his/her students.

Direction of Perceptual Difference Values

When teachers' ratings differ from those of their
students, in which direction do the differences occur?
Are they rating themselves more favorably (higher) or less
favorably (lower) than their students? The information
in Table 3 answers these questions for the .5 value level
and above. For those teachers whose responses are least
congruent (numbers 5, 8, 10, 12, 14, 16, and 18), all rated
themselves higher then their students did. Only teacher
number 11 was in contrast to this tendency, rating him/herself
lower in 10 of 11 questions. It appears that generally
when teachers err in their perceptions of self, they err
in the direction which shows themselves more favorably.
The implication of this tendency may be that teachers have
a false sense of optimism about the effectiveness of their
classroom behaviors. The result could be that ineffective
classroom behaviors would remain unchanged unless these
teachers receive student opinions on which they can reflect.

TABLE 3

DIRECTION OF TEACHER DISCREPANCIES

Teacher	Number of Discrepancies at .5 or Above	Number of Questions Rated Higher By Teacher	Number of Questions Rated Lower By Teacher
1	7	5	2
2	7	1	6
3	8	4	4
4	5	3	2
5	13	9	4
6	8	7	1
7	7	4	3
8	10	7	3
9	6	5	1
10	11	7	4
11	11	1	10
12	11	11	0
13	10	1	9
14	9	9	0
15	5	3	2
16	12	11	1
17	8	7	1
18	12	11	1

Question Analysis

In order to discover commonalities and discrepancies, each question on which difference values exceeded .5 was examined (see Table 4).

Question 2, "My teacher has lots of good ideas", produced the least number of occurrences at the .5 or greater value. It was also one on which teachers were rated lowest by their students (2.9). Both groups appear to recognize the difficulty

TABLE 4

QUESTIONS IN WHICH PERCEPTUAL DIFFERENCE VALUES
OCCURRED AT .5 OR ABOVE

Question #	Frequency of Occurrence	Student Mean (N=439)	Teacher Mean (N=18)
1	11	3.4	3.6
2	4	2.9	3.0
3	7	3.3	3.2
4	8	3.1	3.5
5	8	3.6	3.5
6	7	3.3	3.5
7	8	3.4	3.7
8	9	3.4	3.6
9	7	3.3	3.3
10	10	2.8	2.9
11	8	2.9	3.0
12	9	3.2	3.5
13	9	3.2	3.4
14	6	3.3	3.2
15	7	3.0	2.9
16	7	2.8	2.8
17	8	3.0	3.0
18	4	2.6	2.9
19	9	2.4	2.4
20	12	2.7	3.3

involved in consistently producing "good ideas".

Question 16, "My teacher uses things to make lessons
interesting". a question similar in nature to number 2 again
was rated low by students (2.8). Teachers' assessments
on the same question received the same low rating, consistent
with the responses to number 2.

Questions 18 and 19 also elicited ideas about seatwork and classroom surroundings. Predictably, these also received low ratings from both groups.

Question 20, "I look forward to coming to school each day and try not to be absent". was one in which teachers received a low rating (2.9) and was also one on which teachers' responses were on average much different (2.7 students, 3.3 teachers).

Questions 1 and 5 dealt with teachers' perceived knowledge of subject matter and their ability to express it clearly. These were rated highest by students.

Questions 7, 8, and 9 were questions in which a caring attitude was explored. Again teachers were very favorably viewed by their students.

The frequency of occurrences did not appear to be significant. Although questions 1, 10, and 20 were found ten times or more to show a perceptual value exceeding .5, these questions were not similar in nature.

Generally those questions which explored tendencies towards a caring attitude received high marks by both groups. Those questions related to interesting lessons, seatwork and ideas were rated low by both groups.

Students' Written Responses

The responses to the subjective questions at the end of the questionnaire were examined to see if common threads were evident throughout the entire student group. In all

four categories emerged: peer related, subject related,

teacher related, and physical environment.

Peer related

Those questions which evoked responses of like or dislike

that contained elements where classmates were mentioned

as a source were included in this category (Tables 5 and 6).

TABLE 5

ELEMENTS OF SCHOOLING EVOKING POSITIVE RESPONSES
OF STUDENTS (LIKES) (N=439)

Category	School 1 (%)	School 2 (%)	School 3 (%)
Peer related	34	40	26
Subject matter	32	23	30
Teacher related	24	30	31
Physical environment	6	1	5
All others	4	6	8

TABLE 6

ELEMENTS OF SCHOOLING EVOKING NEGATIVE RESPONSES
OF STUDENTS (DISLIKES) (N=439)

Category	School 1 (%)	School 2 (%)	School 3 (%)
Peer related	26	13	19
Subject matter	40	48	39
Teacher related	9	24	19
Physical environment	11	14	12
All others	14	1	11

In all three schools, peer elements were rated highly as a

source of those school elements which were positive. In

school 2, 40% of the "likes" were associated with peers.

Subject Related

Responses relating to elements of classwork (ie. subject areas, homework, tests, etc.) were grouped under this category (Tables 5 and 6). This area was the source of most of the negative factors (40%, 48% 39%). There were, however, many students who rated subject matter highly (Table 5). Many responses were of the nature of liking one subject but disliking another. For example, Art was often a source of "like" while Social Studies brought a "dislike" response.

Teacher Related

Those areas in which a teacher or teacher influence was present were grouped in this category. The results in school 1 indicate that its teachers do not regularly evoke negative feelings (Table 6). This is in contrast to school number 2 where 24% of negative responses were teacher related. In two of the schools the interactions with teachers were overwhelmingly positive: 24% vs 9% (school 1), 30% vs 19% (school 3).

The differences detected in the study might be useful to schools in which climate improvement was a goal. Responses taken over a period of 2-4 years might indicate progress towards helping to develop a positive feeling in students about their school. This study indicated that the differences can be measured.

Physical Environment

Surroundings, desk sizes, numbers of windows and displays

were typical of the responses grouped in this category.
These elements were mentioned more often as negative elements
than they were as positive. As a source of elements students
like about their classrooms, the physical environment appears
not to be one of them.

Those responses which were not clearly a part of the
previous four categories were left to make up the remaining
percentage of the subjective responses.

Teachers would find reading the responses to questions
21 and 22, from which these tables were derived, very useful.
The information given would cause them to reflect on what
specifically appeals to and does not appeal to students.
The insights gained here could be a source of information
that might lead to changes in some areas. An example of
this occurred in the responses of one class where a full
third of the class mentioned the problem of noise level.
The teacher might want to consider this as a negative factor
that could be corrected. Other comments related to boring
seatwork assignments which, as a frequently written concern,
could give rise to a change in that area. If, while reading
the comments, one particular concern is recurrent, a teacher
could identify an area requiring change.

Individual Teacher Results

The information received from this survey for teacher
16 provides an example how the results might be utilized.
Table 7 shows the teacher's responses to each question (column 1).

TABLE 7

TEACHER #16:   INFORMATION FOR DECISION MAKING

Question	Teacher #16 Responses	Class #16 Responses N=27	Value Difference and Direction (Teacher 16 minus class 16)
1	4.0	3.4	−0.6
2	4.0	2.8	−1.2
3	3.0	3.5	+0.5
4	3.0	3.0	0.0
5	4.0	3.4	−0.6
6	4.0	3.5	−0.5
7	4.0	3.7	−0.3
8	4.0	3.4	−0.6
9	4.0	3.4	−0.6
10	4.0	2.6	−1.4
11	4.0	3.3	−0.7
12	4.0	3.2	−0.8
13	3.0	3.6	+0.6
14	3.0	3.2	+0.2
15	3.0	3.0	0.0
16	4.0	3.0	−1.0
17	4.0	3.0	−1.0
18	3.0	2.8	−0.2
19	3.0	2.1	−0.9
20	3.0	3.0	0.0

Column 2 shows the class' averaged responses. The third
column gives the difference values when teacher 16's responses
are subtracted from the average of his class. Also shown
is the direction of each difference, positive if the student
responses were higher in value than the teacher's, negative
if they were lower in value.

Column 3 would help the teacher to determine areas

on which there is a large perceptual value difference.
In this case questions 2, 10, 16 and 17 all have differences
in excess of 1.0. These questions deal with: having "lots
of good ideas" (#2), approachability, "I can talk to my
teacher about problems" (#10), interesting lessons (#16),
and utilizing tests to help find problem areas for re-teaching
(#17). These observations might provide the focus for change.

Teachers need to bring to this consideration other
variables which will impact on results. Class size,
curriculum, split classes, are but some of them. It may
be a particularly difficult class or a poor choice of time
of day or week for testing. Only when the teacher, determined
to improve or change, interprets the results in light of
all other variables, will he/she make desirable decisions
for change.

The results of the data and subsequent analysis show
that a teacher looking to improve might find student feedback
a good source of information as to where the improvements
are needed.

Chapter 5

DISCUSSIONS AND CONCLUSIONS

This project has been concerned with changing teachers' classroom behaviors to make them more effective. Through a questionnaire, elements of teaching were rated by students. Teachers rated themselves on the same items and a comparison by class showed that there were areas of perceptual differences which can become the basis for improved instruction. These findings are congruent with the few studies that were found in the literature. Students' evaluations can be of assistance to those wishing to change behaviors which are ineffective.

The literature reviewed also suggests that current practices are not very effective in promoting positive changes. The research shows that the processes for change are largely controlled by individuals who are not directly involved in daily classroom activities. There are strong suggestions that this factor of remoteness may be a major obstacle to achieving desirable change. Those identifying and implementing change need to be more closely involved in the process of change. The concept of teachers as classroom researchers may be more productive in promoting instructional change than have either inservice or supervisory models. There are also implications in this for evaluation. The results of teacher initiated research might be utilized as part of the data used in their evaluation.

Facilitating Evaluation

Evaluation, both formative and summative, is an integral part of our education system. When evaluation has as its purpose the improvement of teaching, then the focus needs to be on identifying the behaviors that are ineffective. The classroom teacher, and the classroom as research laboratory may be the most effective means of getting that information. With administrators as facilitators of the process, the organization's goals, both for classroom effectiveness and summative reporting, can be integrated with teacher research and its outcomes.

The experiences of Hedges, Harris, Spier, and Causey (1958) in the Moorhouse Parish, Louisianna, support and give direction for this idea.

> One of the latest additions to the professional growth program is that of research by the individual teacher. It is evident that many benefits can be derived from experimental teaching...experimentation enables the teacher to look critically at what she is doing and at the same time receive constructive help from her co-workers...of the many benefits...one of the foremost is the fact that the teachers...are able to test firsthand the many modern teaching themes. (p. 351-352)

Dr. Marcia Knoll (1987) in her recent book on supervision of instruction, supports the idea of teacher involvement.

> The supervision summary should be prepared in consultation with the teacher. If possible, the teacher should be the one to identify future areas to be targeted. This involvement helps motivate teacher efforts...Invite the teacher to participate ...In addition the involvement of the teacher will help to establish a trust relationship and the belief that the supervisor does care about the teacher's concerns. (p. 9-11)

The idea of another person to help in motivating and the necessity of working towards a trust relationship are recurring concepts in the literature.

The essence of the thrust of this project and conditions which would facilitate a model utilizing teacher initiated research are succinctly suggested by Ned Flanders (1963). In his book concerned with inservice he presents the following criteria for success:

> There is no single pattern of teaching that should be adopted by all teachers. Each teacher must discover for himself his own unique, over-all balance between indirect and direct influence; he must also discover his own rules concerning which patterns of behavior are most appropriate to various learning situations. (pp. 13-14)

The versatility that a teacher brings to his teaching is vital. Each class brings its own unique challenges. A teacher must feel free to experiment, to take risks to meet the ever changing classroom environment and to maintain a dynamic equilibrium within its confines. Administrators need to be aware of and support these efforts.

> Fear of professional or administrative evaluation must be eliminated in order that teachers will feel free to diagnose their own behavior and explore different patterns of teaching. They must also feel free to ask for help when appropriate. Their objective is greater self control of their own behavior. (ibid)

The hierarchical nature of much of the evaluation that currently exists prevents the teacher from taking risks. Traditionally, the quiet classroom with all students engaged in seatwork following a lesson being taught, has been the ideal situation to observe.

> Participation must be voluntary, insights
> must be discovered, coercion has no place
> in the program. Members of the training
> team must not only help teachers identify
> useful social skills for working with
> students, but they must be available to
> help in the classroom when a teacher first
> attempts to modify his pattern of influence.
> Such visits to the classroom must be at the
> invitation of the teacher. (ibid)

It is in this situation that peers can perform a valuable

function. As an observer, data collector, and "idea person",

the role of the colleague can be most effective and, as

Peck and Tucker (1973) found, it can be a strong motivational

factor. Flanders supports the idea of teacher as decision

maker.

> Members of the training team must avoid making
> evaluative judgements even when solicited so
> that the teacher is left to decide for himself
> what patterns of teaching are good or bad,
> effective or ineffective. The major function
> of training is to provide a teacher with more
> information about his own behavior than would
> otherwise be available.
> Training activities should be under the control
> of the teachers or their representatives; full
> support of the administration will be necessary
> including the provision of time, resources, and
> incentives; hopefully non-participating teachers
> could maintain at least a neutral reaction or
> even encourage their colleagues who are
> participating in the training. (ibid)

Administrators as evaluators or facilitators of evaluation

need to give their support to initiatives by teachers. The

atmosphere must be non-threatening if changes can be allowed

to occur. Indeed, administrators might wish to make self-

improvement plans by teachers a part of an annual or summative

evaluation. Encouraging this approach with the same enthusiasm

as is applied to inservice might provide better payoff for

improved classroom instruction.

In the final analysis, a teacher must <u>want</u> to change before it can occur. (ibid)

The implications of Flander's research on inservice training included an observation on how teachers could gain insights into classroom behaviors.

<u>Principles of teacher influence should be</u> <u>discovered by teachers on the basis of their</u> <u>own experimentation</u>. The effectiveness of the training experience depends on successfully creating opportunities for independent self-directed inquiry in which ones own behavior and the reactions of pupils are the object of inquiry. (ibid. p. 136)

The traditional role of the administrator will need to be modified if meaningful change is to occur. As a facilitator, ideas person, and interested mentor, the administrator in these roles may be able to see more positive changes taking place in the classrooms. While giving support and feedback, the administrator provides expertise fulfilling his role as educational leader and monitoring the learning situation in the classroom.

In a recent <u>Time</u> magazine article John Moore, Chairman of the Department of Education at Trinity University in San Diego stated that "reform has been a sort of top down initiative. Teachers were never brought into it. As a result many reforms were misguided". (May 8, 1988, p. 59)

An Alternative Approach

The project's questionnaire used as is or modified to suit the needs of the individual teacher, could be used as a tool in the process of teacher self-improvement and/or an element in the evaluation process. One plan for this

model is as follows: Early in the year in which a teacher

is to be evaluated he/she could bring a questionnaire of

the type used here to the supervisor and discuss the

appropriateness of the questions students will be asked.

Agreement on individual questions needing modifications

could be worked out so that both parties were satisfied.

The teacher has now been given an opportunity to provide

input into the evaluation process. The results of the student

survey could then be examined later in the year and form

the basis for an improvement plan, an evaluation, or both

depending on a prior agreement between supervisor and teacher.

The teacher's involvement in choosing a survey, the students

involvement in providing input and the supervisor's willingness

to trust the process as a part of the evaluation would all

be positive elements to consider.

A second idea for utilizing the questionnaire involves

the teacher seeking self-improvement but not wishing to

involve others. The questionnaire would be administered

by the teacher. The results of each question are then averaged

by the teacher and those on which he/she scores lowest could

be considered for modification of teaching practices or

as guides for further inservice or training.

This suggested method is attractive because it can

be an ongoing process utilized each year by the teacher,

refined where necessary and leading to the teacher becoming

a researcher of his/her effectiveness in teaching. In her

presentation to the annual meeting of the New England Association

of Schools and Colleges in 1986, Patricia Cross echoed the

above:

> I have proposed elsewhere the development of
> a new set of skills and tools that I call
> "classroom research". The purpose of
> classroom research is to help teachers
> evaluate the effectiveness of their own
> teaching. Interpreted broadly, classroom
> research is the formal study by a teacher of
> a teaching/learning situation in his or her
> classroom. "Classroom research" may be too
> pretentious a term for collecting feedback
> on student learning. But using the classroom
> as a laboratory to study the impact of teaching
> on learning is the heart of the matter. The
> study might be as simple as a set of questions
> worked into a class period for the purpose of
> determining student learning, or it might be
> as complex as designing a test of critical
> thinking in the subject matter...Classroom
> research is formative because it aims to
> provide information that is helpful in
> improving performance in a particular
> classroom. It is geared to self-improvement
> since it is designed, conducted, and used by
> teachers themselves. And classroom research
> bridges the gap between research and practice
> because researchers and practitioners are one:
> the researcher asks the questions that the
> practitioner thinks are important; the
> practitioner is eager to use the results of
> the research. Last, but not least, classroom
> research is intended to be additive. Thousands
> of small changes made in classrooms across the
> nation may well add up to more real reform of
> education than sweeping policies made far from
> the scene of the teaching/learning action...
> The contributions of classroom research to
> knowledge about teaching and to self-improvement
> are related. Since teachers are encouraged to
> collect information that they consider relevant
> to the learning of their students in their
> classrooms, the assumption is that they can and
> will use it for self-improvement. The criticism
> is often made that educational research has
> contributed little to our knowledge about how to
> improve classroom teaching...Most educational
> research is a search for generalizations across
> an almost infinite variety of teachers, students,
> and subjects. In this search for general laws of

> learning, researchers deliberately hold constant
> or rule out the specific conditions in any
> particular classroom. But what the classroom
> teacher really wants to know is: What is
> happening in _my_ classroom, given my students
> and my subject matter? Classroom research is,
> by definition, situation-specific, and the
> findings of classroom research are, therefore,
> relevant to a given teacher and can be used
> directly to improve practice...Teachers must
> be actively involved in the process of teaching.
> They cannot be following someone else's dicta,
> no matter how authoritative, and hope to grow
> and to be continually challenged by their work.
> Teachers must have feedback on student learning.
> (p. 498-500)

Many teachers wishing to improve their performances

have enlisted their students' help in assessment. Whether

they were motivated by desire to improve their instruction

or a wish to become students of teaching, their efforts

are commendable.

In my discussions with colleagues and friends concerning

self-evaluation as a means of improving teaching, I received

information about a third party who had done something similar

to what is proposed here. As the individual was a retired

Burnaby Automotive instructor with an excellent reputation

for his teaching skills, I decided to interview him. My

purposes were to find out why he used the questionnaire

method, the type of questionnaire used, and whether he

attributed his success to this type of self-assessment.

I was also interested in how his administrators, colleagues,

and students viewed his evaluation efforts. The following

is the text of the interview conducted in August, 1987 with

Rudy Bodner. He is considered, by his teaching colleagues,

to be a master teacher of automotive, having set up the

existing programs in Burnaby South and Alpha Schools in the 1970's. His expertise has also been requested by other school districts. The results of his questionnaire, he submits, were very important in determining his instructional method early in his career, and the success and satisfaction he felt in his job. A copy of Mr. Bodner's questionnaire can be found in Appendix B.

The Interview With Rudy Bodner

Q: What prompted you to administer a self-assessment questionnaire?
A: I had heard about the general idea of having students assess aspects of teaching and decided to try it.
Q: Who made up the questions?
A: I did.
Q: Did you administer it?
A: Yes. I gave it at the end of the year to each of my five automotive classes.
Q: Was it administered so that students would remain anonymous?
A: Yes, but many put their names on it, as many as half of the class in most cases.
Q: What was the student's reaction to your request for evaluation?
A: They thought it was great. They felt important and pleased that I would ask them for an evaluation.
Q: Did your colleagues know about it?
A: Yes, but they thought I was foolish to do it. They were concerned about the reaction of the pupils. They had never used anything like it.
Q: Did anyone in administration know about it?
A: Yes. The principal approved of the idea and the questionnaire, but only my department head was interested enough to ask about the results.
Q: Were the results as you expected or were there some surprises?
A: I was surprised by the response to number 4. The students didn't find my presentations interesting. As a result I began bringing in more visual aids and parts of automobiles which were being discussed. This worked well and overcame the low rating the following year.
Q: Would you recommend this as a method of instructional improvement?
A: Yes, very strongly.

There are probably many more instances of teachers who have achieved better instructional results through classroom research. Whether the research has **been** incidental or part of a plan, the success of many teachers must in some way be the result of introspection into their teaching practices. If administrators could see the potential of this approach, it might lead to improvements that current training options cannot achieve. Economically, **with** administrators assistance, it could save the many dollars that Wasserman and Eggert allude in their research. As this approach is situation specific it is a more economical use of teacher time. Administrators and peers, as data collectors, need never leave their school setting to assist teachers in developing improvement plans. Administrators, closer to the scene of the teaching/learning action, can further develop the leadership expertise required in helping teachers to change ineffective classroom behaviors.

Conclusions

From the literature researched and the observations made it seems reasonable to conclude:

1. that current practices used in changing teachers' ineffective classroom behaviors are in themselves generally ineffective.

2. that teachers can change those behaviors if they have information which they believe is relevant to their classroom situation.

3. that student feedback on teaching practices is reliable
    at the intermediate level, at least.

4. that administration could choose to be a supportive
    part of schemes involving teachers' classroom research.

5. that evaluation may be facilitated as part of the teacher-
    researcher model.

Further research on this subject might center around
longitudinal studies in which teachers plan changes in their
behavior based on classroom research. Their effectiveness
could be measured over three different years to determine
if student ratings change due to modifications of teaching
behavior. Many other variables will input on this type
of study, but if teachers are perceived as more effective
by their students as a result of such activities, the reward
will be worth the effort.

The approach suggested here will require work in the
development of appropriate questionnaires which can be
modified by individual teachers and administrators to tailor
them to their specific circumstances. If this were achieved,
then surely the "thousands of small changes made in classrooms
...may well add up to more real reform of education than
sweeping policies made far from the scene of the teaching/
learning action". (Cross, Patricia K. 1986. p. 500)

APPENDIX A

Questionnaire
Including instructions for administering
Examples of questionnaire
Example of completed and coded student questionnaire

Dear Colleague,

This project is being done to determine if there is a measurable difference between teacher's self-evaluation and that of his/her students. I plan to compare the results of a questionnaire on which teachers evaluate themselves, and students evaluate their teachers. All responses are anonymous. I will be comparing the results of 20 classrooms but not individual classes.

The following information is included to meet the requirements of the Ethics Committee at S.F.U.
1. Complaints re this study can be made to Dr.Ron Marx, Faculty of Education, S.F.U.
2. Participation is voluntary for both teachers and students. Either may withdraw at any time and choose not to answer questions.

Please follow the directions below so that consistency is established.

Thank you,

Ken Sutton
6657 194 Street,
Surrey, B.C. V3S 5M1

****
Directions for administering:

Inform students:

"This questionnaire asks you to evaluate me on some teaching items. I will evaluate myself on the teacher copy. When you're finished put your papers in this envelope and a student will deliver yours and mine to the office. The research is being done to determine how closely a teacher self-evaluation compares with that of his/her students. I will not be looking at your answers so feel free to write exactly what you think for each question. Your participation is voluntary.

Look at the example on the first page. What do you think is the best answer? There is no <u>right</u> answer. Your opinion is what is asked for. Now turn to the next page. Fill in the information at the top and then answer the questions on the next 2 pages. Don't put your name on the paper. All the information on the paper is anonymous. When you have finished, put your paper in this envelope. Any questions? Start."

<u>Teachers</u>: Please respond to each item in the same manner as you think your students, on average, will respond. Have a student return the envelope with yours and their responses to your office. Please have them put into the courier bag. Thank you again for your assistance. I will send you my results on request (sometime next Fall).

An Evaluation Survey

Sex: Boy ( ) Girl ( ) **TEACHER**

$\overline{6}$

Birthdate: Year born (19___) Month (   )

$\overline{7-10}$

Grade: 5( ) 6( ) 7( )

$\overline{11}$

****

Instructions: Place a check ( ) in the column you believe to be
closest to the situation in your classroom.
Do **not** include your name on this sheet.

	Almost always	Often	Sometimes	Almost never	
1. My teacher knows what he wants from his students and makes it clear to us.	___	___	___	___	21
2. My teacher has lots of good ideas.	___	___	___	___	22
3. My teacher finishes projects he starts	___	___	___	___	23
4. My teacher is a happy person.	___	___	___	___	24
5. My teacher knows a lot about what he teaches.	___	___	___	___	25
6. My teacher likes teaching.	___	___	___	___	26
7. My teacher is honest with students.	___	___	___	___	27
8. My teacher cares about each of his students.	___	___	___	___	28
9. My teacher helps students with their problems.	___	___	___	___	29
10. I can talk to my teacher about problems.	___	___	___	___	30
11. The rules of this classroom are fair and agreed on by the students.	___	___	___	___	31

Teacher

	Almost always	Often	Sometimes	Almost never	
12. Students who don't do as well as others are still well thought of by the teacher.	___	___	___	___	32
13. Students are free to express their opinion in the classroom if they aren't the same as the teacher's opinion.	___	___	___	___	33
14. Our teacher listens to what we say.	___	___	___	___	34
15. Our teacher trusts us to do things on our own.	___	___	___	___	35
16. My teacher uses things to make lessons interesting.	___	___	___	___	36
17. My teacher tests us to find ways to help us learn.	___	___	___	___	37
18. Our classroom is an interesting place.	___	___	___	___	38
19. The seatwork I do is interesting to me.	___	___	___	___	39
20. I look forward to coming to school each day and I try not to be absent.	___	___	___	___	40

21. The thing I like best about this class is:

_____

_____

_____

22. The thing I like least about this class is:

_____

_____

_____

Thank you!

An Evaluation Survey

Sample item: Place a check (✓) in the column you believe most
closely describes the statement.

	Almost always	Often	Sometimes	Never
1. In the Surrey/White Rock area it rains in February.	___	___	___	___

1	2	3	4	5

An Evaluation Survey

Sex: Boy ( ) Girl ( )

Birthdate: Year born (19___) Month ( )

$\overline{6}$

$\overline{7-10}$

Grade: 5( ) 6( ) 7( )

$\overline{11}$

****

Instructions: Place a check (✔) in the column you believe to be
closest to the situation in your classroom.
Do not include your name on this sheet.

	Almost always	Often	Sometimes	Almost never	
1. My teacher knows what he wants from his students and makes it clear to us.	___	___	___	___	21
2. My teacher has lots of good ideas.	___	___	___	___	22
3. My teacher finishes projects he/she starts.	___	___	___	___	23
4. My teacher is a happy person.	___	___	___	___	24
5. My teacher knows a lot about what he teaches.	___	___	___	___	25
6. My teacher likes teaching.	___	___	___	___	26
7. My teacher is honest with students.	___	___	___	___	27
8. My teacher cares about each of his/her students.	___	___	___	___	28
9. My teacher helps students with their problems.	___	___	___	___	29
10. I can talk to my teacher about problems.	___	___	___	___	30
11. The rules of this classroom are fair and agreed on by the students.	___	___	___	___	31

	Almost always	Often	Sometimes	Almost never
12. Students who don't do as well as others are still well thought of by the teacher.	___	___	___	___ 32
13. Students are free to express their opinion in the classroom if they aren't the same as the teacher's opinion.	___	___	___	___ 33
14. Our teacher listens to what we say.	___	___	___	___ 34
15. Our teacher trusts us to do things on our own.	___	___	___	___ 35
16. My teacher uses things to make lessons interesting.	___	___	___	___ 36
17. My teacher tests us to find ways to help us learn.	___	___	___	___ 37
18. Our classroom is an interesting place.	___	___	___	___ 38
19. The seatwork I do is interesting to me.	___	___	___	___ 39
20. I look forward to coming to school each day and I try not to be absent.	___	___	___	___ 40

21. The thing I like best about this class is:

_____

_____

_____

22. The thing I like least about this class is:

_____

_____

_____

Thank you!

$$\frac{1}{1} \quad \frac{3}{2} \quad \frac{1}{3} \quad \frac{1}{4} \quad \frac{4}{5}$$

An Evaluation Survey

Sex: Boy ( ) Girl (✓)

Birthdate: Year born (19__76__) Month (6)

Grade: 5(✓) 6( ) 7( )

$$\frac{?}{6}$$
$$\frac{}{7-10}$$
$$\frac{}{11}$$

****

Instructions: Place a check (✔) in the column you believe to be
closest to the situation in your classroom.
Do **not** include your name on this sheet.

	Almost always	Often	Sometimes	Almost never
1. My teacher knows what she wants from his students and makes it clear to us.	✓				21
2. My teacher has lots of good ideas.	✓				22
3. My teacher finishes projects he/she starts.	✓				23
4. My teacher is a happy person.			✓		24
5. My teacher knows a lot about what she teaches.	✓				25
6. My teacher likes teaching.	✓				26
7. My teacher is honest with students.	✓				27
8. My teacher cares about each of his/her students.		✓			28
9. My teacher helps students with their problems.	✓				29
10. I can talk to my teacher about problems.	✓				30
11. The rules of this classroom are fair and agreed on by the students.		✓			31

	Almost always	Often	Sometimes	Almost never	
12. Students who don't do as well as others are still well thought of by the teacher.	✓	—	—	— 32	✓
13. Students are free to express their opinion in the classroom if they aren't the same as the teacher's opinion.	—	—	✓	— 33	?
14. Our teacher listens to what we say.	—	—	✓	— 34	?
15. Our teacher trusts us to do things on our own.	—	—	✓	— 35	?
16. My teacher uses things to make lessons interesting.	✓	—	—	— 36	✓
17. My teacher tests us to find ways to help us learn.	✓	—	—	— 37	✓
18. Our classroom is an interesting place.	✓	—	—	— 38	✓
19. The seatwork I do is interesting to me.	—	✓	—	— 39	?
20. I look forward to coming to school each day and I try not to be absent.	✓	—	—	— 40	✓

21. The thing I like best about this class is:

The teacher _____

_____

_____

22. The thing I like least about this class is:

_____

_____

_____

Thank you!

APPENDIX B

Sample of student questionnaire referred to
in interview with Rudy Bodner

Sample of Student Evaluation Questionnaire Used by Rudy Bodner

----STUDENT EVALUATION OF TEACHER----

Please do not write your name on the form so you may feel free to be honest. Read each item carefuly and underline your rating for each statement.

After underlining your rating, space is provided to make written comments should you so desire.
----

1. Interested in subject taught:
   (5) Always interested
   (3) Mildly interested
   (1) Disinterested in subject

   Comments:

2. Knowledge of subjects taught:
   (5) Well informed
   (3) Average
   (1) Inadequately informed

   Comments:

3. Preparation of subject material:
   (5) Always prepared
   (3) Occasionally prepared
   (1) Seldom prepared

   Comments:

4. Presentation of material:
   (5) Interesting
   (3) Average
   (1) Dull

   Comments:

5. Attitude toward different views:
        (5)   Welcomes differences in viewpoints
        (3)   Occasionally, but usually tolerant
        (1)   Intolerant, does not allow contradiction

   Comments:

6. Attitude towards students:
        (5)   Always courteous and considerate
        (3)   Usually considerate, but finds it difficult at times
        (1)   Inconsiderate and rude

   Comments:

7. Admit you do not know the answer to a question:
        (5)   Yes
        (3)   Occasionally
        (1)   No

   Comments:

8. Personal Appearance:
        (5)   Appropriate
        (3)   Usually appropriate
        (1)   Seldom appropriate

   Comments:

9. Personal Peculiarities:
        (5)   Free from annoying mannerisms
        (3)   Moderately free from annoying mannerisms
        (1)   Constantly exhibits irritating mannerisms

   Comments:

10. Speaks clearly and distinctly:
       (5)   Good
       (3)   Fair
       (1)   Poor

Comments:

11. Makes the classroom as physically comfortable , neat and
    attractive as possible:
       (5)   Always
       (3)   Occasionally
       (1)   Never

Comments:

12. General Estimate of Teacher:
       (5)   Superior
       (3)   Average
       (1)   Inferior

    Comments:

Your opinions and comments if necessary of the teaching
instruction, shop time application and any suggestions and ideas
on how they may be improved to correct any implied faults.

APPENDIX C

Baseline data for the teachers by question   N=439

13 JUL 87   ken sutton sutton/suttons
13:18:18   Simon Fraser University
ST: 1
Q1

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	1	4	.9	.9	10.5
	2				41.5
	3	158	31.1	31.1	
	4	264	57.4	57.4	100.0
	-999	2	.4	MISSING	
TOTAL		439	100.0	100.0	

MEAN   3.474   STD DEV   .880

VALID CASES   437   MISSING CASES   2

- -

Q2

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	1	24			
	2	130	24.1		
	3	157			
	4		27.1		100.0
	-999	1		MISSING	
TOTAL		439	100.0	100.0	

MEAN   2.918   STD DEV   .880

VALID CASES   438   MISSING CASES   1

13 JUL 87   ken sutton sutton/suttons
13:18:18   Simon Fraser University
ST: 1
Q3

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	1	17			
	2				
	3				
	4				100.0
	-999	4		MISSING	
TOTAL		439	100.0	100.0	

MEAN   3.358   STD DEV   .886

VALID CASES   435   MISSING CASES   4

- -

Q4

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	1	15	3.4	3.4	3.4
	2	91	20.7		
	3	164	37.4	37.4	
	4	168	38.3	38.3	100.0
	-999	1		MISSING	
TOTAL		439	100.0	100.0	

MEAN   3.107   STD DEV   .848

VALID CASES   438   MISSING CASES   1

13 JUL 87   ken sutton sutton/suttono
13:18:13   Simon Fraser University

ST: 1

Q5

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	1	6	1.4	1.4	1.4
	2	25	5.7	5.7	7.1
	3	119	27.1	27.2	34.2
	4	288	65.6	65.8	100.0
	-999	1	.2	MISSING	
	TOTAL	439	100.0	100.0	

MEAN   3.573   STD DEV   .665

VALID CASES   438   MISSING CASES   1

- -

Q6

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	1		1.4	1.4	1.4
	2				
	3	152			
	4	226	51.3	51.1	100.0
	-999	4	.9	MISSING	
	TOTAL	439	100.0	100.0	

MEAN   3.346   STD DEV   .799

VALID CASES   435   MISSING CASES   4

---

13 JUL 87   ken sutton sutton/suttono
13:18:13   Simon Fraser University

ST: 1

Q7

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	1	13	3.0	3.0	3.0
	2	46	10.6	10.6	13.6
	3	107	24.4	24.6	38.1
	4	269	61.3	61.8	100.0
	-999	4	.9	MISSING	
	TOTAL	439	100.0	100.0	

MEAN   3.453   STD DEV   .800

VALID CASES   435   MISSING CASES   4

- -

Q8

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	1	14	3.2	3.2	3.2
	2	47	10.7	10.8	14.0
	3	105	23.9	24.1	38.1
	4	270	61.5	61.9	100.0
	-999	3	.7	MISSING	
	TOTAL	439	100.0	100.0	

MEAN   3.447   STD DEV   .811

VALID CASES   436   MISSING CASES   3

ST: 1

Q8

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	1	12	2.7	2.7	2.7
	2	63	14.4	14.4	16.1
	3	131	30.0	30.0	46.1
	4	247	56.5	56.5	100.0
	-999	2	.5	MISSING	
	TOTAL	439	100.0	100.0	

MEAN   3.360   STD DEV   .814

VALID CASES   437   MISSING CASES   2

- -

Q10

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	1	56	12.8	12.8	12.8
	2	116			
	3	115			
	4	145			100.0
	-999	3		MISSING	
	TOTAL	439	100.0	100.0	

MEAN   2.636   STD DEV   1.053

VALID CASES   436   MISSING CASES   3

ST: 1

Q11

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	1	33	7.5	7.5	7.5
	2	111			
	3	124			
	4	171	39.0	39.0	100.0
	TOTAL	439	100.0	100.0	

MEAN   2.986   STD DEV   .972

VALID CASES   439   MISSING CASES   0

- -

Q12

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	1	18	4.1	4.1	4.1
	2	58	13.2	13.3	17.4
	3	121	27.6	27.7	45.1
	4	240	54.7	54.9	100.0
	-999	2	.5	MISSING	
	TOTAL	439	100.0	100.0	

MEAN   3.334   STD DEV   .858

VALID CASES   437   MISSING CASES   2

13 JUL 87   ban sutton sutton/suttons
13:18:18   Simon Fraser University

ST: 1

Q13

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
1	24				
2	60				
3	103				42.7
4	251				100.0
-999	1		.2	MISSING	
TOTAL	439	100.0	100.0		

MEAN   3.326   STD DEV   .908

VALID CASES   438   MISSING CASES   1

- -

Q14

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
1	10	2.3	2.3	2.3	
2	67				17.6
3	123				45.7
4	238				100.0
-999	1	.2	MISSING		
TOTAL	439	100.0	100.0		

MEAN   3.346   STD DEV   .818

VALID CASES   438   MISSING CASES   1

---

13 JUL 87   ban sutton sutton/suttons
13:18:18   Simon Fraser University

ST: 1

Q15

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
1	29				
2					
3	144				
4	163				100.0
-999	3	.7	MISSING		
TOTAL	439	100.0	100.0		

MEAN   3.021   STD DEV   .929

VALID CASES   436   MISSING CASES   3

- -

Q16

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
1	45				
2	128				
3	121				67.1
4	144				100.0
-999	1	.2	MISSING		
TOTAL	439	100.0	100.0		

MEAN   2.831   STD DEV   1.003

VALID CASES   438   MISSING CASES   1

017

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	1	40	9.1	9.2	9.2
	2	75	17.1	17.6	26.8
	3	145	33.1	34.1	60.9
	4	170	38.7	40.2	100.0
	-999	5	1.1	MISSING	
	TOTAL	435	100.0	100.0	

MEAN   3.032   STD DEV   .988

VALID CASES   434   MISSING CASES   5

- -

018

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	1	55	12.6	12.6	12.6
	2	145	33.1	33.1	45.7
	3	130	29.7	29.7	75.4
	4	108	24.4	24.6	100.0
	-999	1	.2	MISSING	
	TOTAL	439	100.0	100.0	

MEAN   2.662   STD DEV   .998

VALID CASES   438   MISSING CASES   1

019

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	1	65	14.8	14.9	14.9
	2	191	43.5	43.8	58.7
	3	125	28.5	28.6	87.3
	4	55	12.5	12.7	100.0
	-999	3	.7	MISSING	
	TOTAL	439	100.0	100.0	

MEAN   2.398   STD DEV   .885

VALID CASES   436   MISSING CASES   3

- -

020

VALUE LABEL	VALUE	FREQUENCY	PERCENT	VALID PERCENT	CUM PERCENT
	1	83	18.9	18.9	18.9
	2	105	23.9	24.0	42.9
	3	105	23.9	24.0	66.9
	4	145	33.0	33.1	100.0
	-999	1	.2	MISSING	
	TOTAL	439	100.0	100.0	

MEAN   2.712   STD DEV   1.115

VALID CASES   438   MISSING CASES   1

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