MAKING SENSE OUT OF COMPREHENSIVE
SCHOOL-BASED INFORMATION SYSTEMS

Ken A. Sirotnik

and

Leigh Burstein

CSE Report No. 250

1986

CENTER FOR THE STUDY OF EVALUATION
Graduate School of Education
University of California, Los Angeles

ABSTRACT

A school-based information system for ongoing building-level
improvement efforts was tested at a suburban senior high school
near Los Angeles that was already beginning to use a computer-based
information system. Three basic data report forms were generated
by interactive work groups of teachers, administrators and CSE
staff to provide data on individual students (the information most
interesting to the teachers), on classrooms, and on the school as
a whole (which attracted the most involvement from administrators).
Issues in information use that emerged as the participants collab-
orated included a division between diagnostic, or clinical, use and
organizationa, or social, use; the increasing sophistication of
school personnel in handling data; the perceived power of data to
drive decision-making; the possibilities of information abuse;
distinctions between information and knowledge; teachers' primary
reliance on their own personal knowledge in decision-making; the
need to present complex information in simple form; and the recip-
rocal educative function of a collaborative effort between recip-
rocal educative function of a collaborative effort between researchers
and school personnel.

TABLE OF CONTENTS

Introduction

This is one of a number of reports based upon our working experience with the concepts of <u>systemic evaluation</u> (Burstein, 1983, 1984a-c; Sirotnik, Burstein, and Thomas, 1983) and <u>contextual appraisal</u> (Sirotnik and Oakes, 1981a,b; Sirotnik, 1984c). Regardless of the terminology, the idea is built around the use of comprehensive information -- data including but not limited to achievement outcomes -- to inform school improvement efforts at all levels of the educational enterprise. Perhaps even more central is the idea that the use of comprehensive information systems is not something that can be packaged and forced upon school people; rather, they must be appropriately and non-trivally involved throughout the processes of development and implementation.

Our ideal view, then, of school-based information systems sees such systems in the context of a more general commitment to critical inquiry (Sirotnik and Oakes, 1985) at the school level -- a commitment that provides administrators and staff with significant time and resources for both questioning what they do and collecting data that can help inform decisions as to how they might go about doing it better. In this perspective, <u>information</u> is clearly distinguishable from <u>knowledge</u>; quantitative facts and explanations are clearly differentiated from interpretation, understanding and critique. The process of dialogue, clarifying values and human interests, making and acting upon decisions, and reevaluating these actions, therefore, becomes as important as the empirical data bases required to inform the process.

During the earlier years of this work, considerable conceptual and developmental work was accomplished that clarified both the philosophy of the systemic evaluation idea (Sirotnik, 1984b; Sirotnik and Oakes, 1982) and that outlined the components and contents of comprehensive information systems useful at the building level (Burstein, 1984b; Sirotnik, Burstein & Thomas, 1983) In a nutshell, this work included these contributions:

1. Developing an epistemological framework for using the knowledge afforded by a comprehensive information system in school renewal efforts.

2. Clarifying and integrating the basic research perspectives on contextual appraisal and multilevel design and analysis as adapted to the local school context.

3. Clarifying the distinctions between school and district perspectives on information systems and on the commonalities and differences in the information needs of elementary and secondary schools.

4. Elaborating the functions that comprehensive information systems serve within and between schools.

5. Identifying the likely contents (information domains) of a comprehensive information system for local school improvement.

6. Documenting the available sources of information routinely collected in schools.

7. Reviewing the routine data collection activities of a sample of school districts at various stages of trying to use information systems.

8. Developing an extensive array of possible survey, interview and observational instruments designed to collect non-achievement data that schools might include in their information systems.

During the last two years, we have "reality-tested" some of these concepts by gaining first-hand knowledge about developing and sustaining a school-based information system for ongoing school improvement efforts. Essentially, we have studied the evolution and consequences of a comprehensive information system in a specific high school setting by considering, in context, questions such as:

- How can such systems accommodate the <u>diverse array</u> of information needs at classroom, school and district levels?

- How can the information data bank be organized to meet a variety of needs on a <u>day-to-day</u> basis?

- What is the <u>optimal balance</u> of hardware and software at building levels?

- How can the system augment and stimulate processes of curriculum inquiry and school renewal.

The school selected for this reality test was a three-year senior high school of approximately 2,000 students located in a two-high school suburban district (K-12 enrollment, approximately 20,000 students) just outside of the greater Los Angeles area. The selection of this site was in response to both national and local concerns about secondary school reform and reflects a setting where a beginning computer-based information system already exists. The school was attempting to address pressing school problems such as high absenteeism and drop-out rates and the need for curricular reform to better accommodate student diversity and prepare students for post-graduation activities. There was also considerable interest in exploring how the computerized information system can routinely serve both improvement and day-to-day school activities. These conditions at the high school made it ideal for studying the development and use of a comprehensive information system in secondary school improvement efforts.

Our basic modus operandi has been to work hand-in-hand with a selected group of teachers, administrators, and counselors to develop the means whereby the district's extant information system can be modified and used to meet the needs <u>at the school level</u>. Towards this end, we have also been in close working relationship with district staff, particularly in the data processing division, so that any changes or additions can be easily implemented into existing hardware and

software configurations.

Cutting across these working relationships have been these specific activities:

1. Instituting the kinds of data collection activities that may be necessary to establish the system's comprehensiveness (e.g., pre-, current, and post-graduate student surveys, teachers and parent surveys, additional school-level data entry, etc.).

2. Organizing and structuring information in a way amenable to the manipulations and analyses required of the data (e.g., student files, teacher and parent files, aggregated files at class and school levels, etc).

3. Investigating the optimal balance of hardware, software and human resources required to make the system:

   a. Efficient with respect to data entry, updating and data transfer between district and school.
   b. Accessible and timely to school administrators, teachers and district-level staff.

4. Developing and utilizing the simplest, but most meaningful, methods of data manipulation and analyses. Examples of the kinds of possible activities are:

   a. Targeted subgroup demographic descriptions.

   b. Univariate distributions of system variables.

   c. Bivariate and multivariate cross-tabulations.

   d. Bivariate plots.

   e. Trend analyses.

5. Developing and testing reporting formats that maximize both meaning and interpretability by the intended audiences.

6. Gathering of case-study material through observations and interviews (of and with school and district staff) regarding decision-making with respect to developing, implementing and applying information systems.

These activities clearly indicate the focus of our more recent studies of the systemic evaluation concept. Notwithstanding the conceptual importance of developing information systems as part of a more general inquiry and renewal process in the school, we chose to focus specifically on development and use issues more immediate to the information

system side of the concept of systemic evaluation.

Our choice to "decontextualize" conceptually this phase of the study was deliberate on two accounts: (1) resources and time did not permit working at a school site with staff willing to engage in long-term school renewal activites and (2) the reality is such that many districts and schools are already involved with information systems in less than desirable staff planning and development configurations.

We decided, therefore, to reality-test the information side of the systemic evaluation idea in the context of a typical secondary school setting, with an information system already in place, but with little teacher awareness of how and why it might be utilized. The focus of this report is most directly on activities 4 and 5 noted above. Our main concerns were with questions around how school people make sense out of the kind of data ordinarily found in comprehensive information systems. For example, when given the opportunity to become involved in developing such systems, on what basis do teachers, administrators, and counselors decide to include (or exclude) potentially relevant information? What are the operant paradigms of information need and use? What are the perceived conditions and formats in which data can be transmitted for use by practitioners? How and why are (or are not) data, in fact, used when reported in these formats back to practitioners? To what extent are educative functions from outside collaborators necessary to develop, implement, and maintain minimally functional information systems at individual student, classroom and school levels? These (and other) questions drove and/or emerged from the systemic evaluation inquiry to be described in this paper.

In what follows, we will detail both the process and product aspects of developing and testing analysis and reporting formats that a

select group of school staff found interpretable, meaningful and useful in their day-to-day work settings. We will also report and discuss the perceptions of the entire staff at the selected school site regarding the usefulness of the reports as developed by the smaller staff work group. It must be remembered that, in many ways, this was an exploratory case study in one suburban high school setting as described above. Our inferences and conclusions, therefore, emerge more as hypotheses deserving of further test than as generalizable confirmations.

Process

Most of our developmental work took place collaboratively with school staff. Specifically a core group of five teachers (representing different subject matters), the principal and assistant principal, and sometimes a counselor, constituted the primary vehicle for project input from the school. (In the last year, five more teachers joined this group.) We will refer to these representatives of the school and ourselves, collectively, as the "work group."

As noted above, involving as many of the other 85 staff members at the high school in all aspects of this project would have been useful -- both for facilitating the use of the information system as an intrinsic part of the school's planning process as well as providing us with more feedback on the objectives of the project. However, involving staff at this level of magnitude is a costly, time-consuming, and difficult task. We were fortunate, for example, to gain the released time necessary just to involve five to ten teachers in this effort. Thus, we have sacrificed, in part, exploring the consequences of a full-scale developmental effort with total staff involvement for the expediency and efficiency

of a concentrated, small group work effort. Nonetheless, we met with the total staff on several occasions -- period-by-period meetings and pupil-free, minimum half day -- in order to explain the purposes, processes and outcomes of the project, enlist their cooperation in the survey data collection activities, update and share with them interim reports and reporting techniques, and obtain their attitudes and opinions regarding the usefulness of the reports that were developed by the work group and disseminated to all teachers.

We also met regularly with district level staff on basically two accounts: (1) Updating and negotiating with the assistant super-intendent regarding the progress of the project and the material and resource needs as they occured; and (2) Working closely with the director and senior programmer in Data Processing in order to both study their information system's contents and capabilities and facilitate their processing and use of the new information (e.g., student survey data) collected at the school level.

Much of the project process that has taken place at both district and building levels is detailed elsewhere (Dorr-Bremme, 1985) and need not be repeated here. Instead, we will consider here the more specific work-related efforts relevant to generating the analyses and reports based on the information system.

Initial Activities and Student Survey

Initial meetings during the first year were held with the work group to both orient all participants to the general purposes and scope of the project and then to attend to the details of these activities:

1. Identifying the kinds of information teachers, counselors, and building administrators view to be useful for their own work (student-level, class-level, school-level and program-level decisions).

2. Identifying what specific problems (at any level) that the school staff would expect the information system to help them address.

3. Ascertaining the level of understanding of the computerized information currently available to school staff and the services that can be provided.

4. Reviewing the contents of the extant computerized information system.

5. Discussing the extent to which the system meets current and anticipated needs.

6. Determining what additional information may be necessary to augment the system.

7. Developing plans for collecting any additional information.

8. Identifying the information that will be useful for characterizing the functioning and impact of other ongoing programs (e.g., state funded school improvement projects).

Among other things, it was clear from these activities that the teachers were aware of only some of the information and reports that were possible to get from the extant system; the procedures for obtaining reports were slow, not always responsive, and not always flexible enough for specific needs, and that there were much more data of potential use that were not already in the information system. It was decided, therefore, that student, teacher, and parent surveys should be designed and field tested in that order of priority, given the available time and resources.

The next meetings of the work group centered directly around the task of constructing the student survey. This work was facilitated by the already available compendium of potential student survey items, pertaining to school level and classroom level issues, developed by the project in the previous year (Sirotnik, Burstein, and Thomas, 1983). Through an interactive process of dialog, sorting, sifting, setting priorities, revising, subtracting irrelevant items, and adding new ones, the work group converged on the 185-question survey in Appendix A to

this report. This survey was administered to students in May 1984, was computerized and scored by the district's Data Processing department, and was subsequently analyzed at UCLA for the purposes of this project. (It should be noted that this survey has been subsequently revised and administered again this year for the purposes of producing student, class and school reports beginning the 1985-86 academic school year. This activity was carried through mostly by teachers and administrators at the school.)

Analyses and Reporting Formats

The next major series of work group meetings focused on the likely analyses and reporting formats using student survey data and other system data that might capture the interests and information needs of school staff.

Initially, a two-day retreat was conducted wherein the work group pursued an in-depth descriptive analysis of the survey results based upon marginal response percentages (these data are printed along side the items in Appendix A). In addition, a semi-structured agenda was followed designed to engage the group to begin considering the various ways in which the analyses could be visually presented. (A copy of the outline followed by the work group for these discussions is included in Appendix B.)

In retrospect, we may have over-structured these initial meetings in the sense that much of what we suggested by way of decision-making levels and report contents subsequently appeared in trial report forms discussed in the next section. Nonetheless, the perspective we brought to the use of information was well-substantiated in our previous concep-tual and practical work on this project and in work done on A Study of Schooling (Goodlad, 1984). Moreover, we had already become quite

familiar with the high school through our association with it over several years, and we knew of the staff's and administration's concern with problems such as student apathy, high absenteeism, and concern over the appropriate foci of the school's curricular emphases.

For whatever reasons, then, the work group resonated to this initial foray into the possible uses of data and the several data displays. Moreover, in the next couple of half-day work group meetings, the teachers, administrators and CSE staff worked jointly on detailing the analyses and reporting formats most likely to be used by the high school staff. In the first of these meetings, in fact, one teacher came in armed with a list of variables that she felt were important pieces of information to have about students assigned to any particular class.

This list eventually evolved into the first of three basic information report ideas generated by the work group, drawn up by CSE staff, and brought back to, and refined by, the work group. These reports came to be known as the

- Students-At-A-Glance
- Class-At-A-Glance
- School-At-A-Glance

reports. We will discuss the details of designing and producing these reports in the next section. Suffice it to note here that this process was an interactive one: ideas were generated by the work group; they were "brought back to the shop" and developed further by CSE staff; and they were presented again to the group until a working consensus was reached by all involved.

Throughout this process, connections with district level staff were maintained in several ways: (1) As part of our project objectives, our intent was to develop reporting techniques that were compatible with

district technological capabilities and that would, in fact, be used by the district to produce the several report forms noted above. Thus, work group efforts in terms of concepts and products were generally within the parameters set by district capabilities. (2) Given the developmental nature of the project, a certain amount of exploratory data analytic and graphic display work needed to be done at CSE using computing facilities at UCLA. We secured permission, therefore, from the district to receive and use copies of their basic information files used to construct their entire information system. (The district's system and files are briefly described in the outline contained in Appendix C.) (3) Several meetings with district staff were held primarily to maintain good will, reaffirm our commitments to the project and the high school-university collaborative endeavor, keep open channels of communication, and update staff on the progress of the project and the increasing commitments of the principal and teachers to actually using the evolving reporting techniques. In one of these meetings (including CSE staff, the assistant superintendent, the director of data processing, and the principal), the district commitment was secured for the production of student and class reports for all teachers beginning the second semester of the 1984-85 school year.

Finally, once the trial information reports were developed and we were certain that the district would produce them for all teachers, a total staff meeting was planned and held in November, 1984. The goals of this meeting were to reiterate the purposes and scope of the project, share the progress to date (including student survey results and the several report forms planned for dissemination), gain faculty-wide input to the process so far, inform staff of upcoming next-steps (e.g., possible teacher and parent surveys, second round of student surveying),

and enlist more teacher volunteers to join the group. Particularly noteworthy, this meeting was planned and conducted mostly by the five teachers involved initially in the work group. Based upon input received from this meeting, the report forms generated by the work group, and programming specifications outlined by CSE staff, the district developed the software necessary to produce the reports within the time frame noted above.

As scheduled, Students- and Class-At-A-Glance forms were generated by the district for each class taught each period by each teacher in the school. These reports were produced approximately two weeks into the semester, after class enrollments stabilized. The reports were sorted and packaged for each teacher and disseminated during period-by-period meetings (in mid February, 1985) with teachers during their preparation periods. At this time, we reviewed the purpose of the project, the report forms, and some issues regarding both use and abuse of information. We also suggested some general issues to keep in mind over the next couple of months to help evaluate the utility of the reports. (The outline used for these meetings in contained in Appendix D.)

For approximately 2½ months, we left the teachers entirely on their own in terms of using (or not using) the information in these reports. During this period, however, a senior staff member of the CSE project team interviewed 18 teachers (and 5 other staff members) selected purposively to represent both the teachers in our work group and teachers generally in the school. These were one- to two-hour long, in-depth interviews designed around the questions noted on the issues list in Appendix D plus other issues and concerns related to the project and/or district-school relations. We will include some summary results of these interviews in this report as they pertain to the specific

issues here. (A more detailed analysis can be found in Dorr-Bremme, 1985.)

These interviews also provided a basis for constructing a teacher survey (see Appendix E) regarding uses and non-uses of the Student- and Class-At-A-Glance reports. In particular, we were interested in ascertaining teachers' views regarding how they used the forms (or why they didn't use them), what specific information was most often used, which form was most often used, what deletions, modifications, additions, or format changes were desired, and what abuses (if any) might have occurred. On May 1, 1985, we held our last series of period-by-period meetings with teachers. These meetings were designed for two purposes: (1) to collect the survey data from teachers regarding their use of the reports and (2) to engage the teachers in small group discussions regarding the project, the advisability of continuing the reporting of student and class data, and so forth.

Finally, a week later, we met one last time with teachers in the work group to accomplish several remaining tasks: (1) report back and discuss our preliminary tabulations of the teacher information use survey, (2) revise the student survey for use later in the month, (3) discuss the continuing issue of whether or not to collect general survey data from teachers (the teacher survey had already been constructed by the work group), and (4) outline a set of tasks that would, in effect, transfer most of the responsibility for procedural details to the school and analysis details to the district.

This process description, although brief, should be sufficient to set the stage for what follows, namely, a discussion of the actual analyses and "at-a-glance" report forms determined by the work group to be of potential use at the several levels of decision-making within the

school. This discussion will be followed by an analysis and interpretation of the interview and survey data collected from teachers regarding their perceptions of the utility of these reporting devices. Finally, we will conclude with a discussion of the most critical emerging issues, as we see them, summarized across the entire project experience.

Analysis and Reporting: At-A-Glance Formats

There is nothing inherent in information per se that automatically guarantees its usefulness. Even in the case of information generated at a conceptual level of need -- for example, the student survey idea generated by the work group -- judging the utility of data actually obtained is a whole new "ballgame." What seemed obviously interesting before (in "theory") is not always of obvious use when the data are actually at hand. This was one of the primary reasons for having teachers and administrators face the tasks of data analyst and report designer.

The details of how work group members attended and reacted to these tasks are extraordinarily interesting. We have only sketched out the structure of this in the process discussion above. Moreover, we will present mostly the outcomes of these deliberations next, adding only a few process descriptions as necessary. In a subsequent section, we will return to these process details only to support some emerging issues that we think deserve special mention.

As noted previously, three types of data displays were generated by the work group: student-, class-, and school-at-a-glance reports. We will discuss each of these reports in terms of their evolution, contents and anticipated uses. We will then present and discuss information pertaining to the actual use of these forms.

Student-At-A-Glance

Of the various levels at which information could be of use to school staff, teachers seemed to gravitate almost immediately to uses at the individual student level, particularly as that information might impact upon their classroom instruction. Early on in the project, an interesting "tension" emerged between teachers' predispositions to relate, on the one hand, to individually-focused, diagnostic data and, on the other hand, to group or organizationally focused data (often aggregates of individual data). We have labelled these two perspectives regarding the use of information the clinical and the social orientations, respectively. (See Sirotnik, Dorr-Bremme, and Burstein, 1985.) The clinical-social theme is an important one in information use and we will return to it in the next section. Suffice it to say here that all teachers had no problems relating to the clinical perspective on information use -- the main issues centered around which data to select and how to array them in a visually satisfying manner.

The work group already had a start on discussing these issues based upon a district version of a student information report (Exhibit 1) and also a preliminary outline submitted by one of the teachers. Interestingly, not all the teachers were even aware of the availability of the district report. Nevertheless, all teachers reacted somewhat negatively towards the report in terms of unclear variable definitions, a densely packed, difficult to read format, and both too much information and not always the most useful information being included.

Exhibit 2 shows the final version of the Student-At-A-Glance report, designed to provide teachers with a student-by-student roster for each of their classes and the information on each student given by the column headings and defined by the keys at the bottom of the report.

EXHIBIT 1

District's Student Report

```
.NARF 082140  SCH:33 GRADE:10 SP:    EC:E2 ED: 9/12/83 DOB: 6/25/68 SEX:G TCH:
IAME:     MADYLENE MARY      PO BOX:      EMRG1:BONNIE          PH:   .-526-349
IDDR: 1555- AGNEW ST            #   -      EMRG2:BONNIE   .     PH:. 5-522-326
;ITY:  .  VALLEY     ZIP:93065 DOCTR:DRUMMOND       PH:    -526-5240 RG:  /  /
'HONE:   -527-9188  BPL:CINCINNATI, O     LSCH:WM GREEN, LAWNDALE
'R:EUGENE O           OC:MILLWRIGHT       EMP:GENERAL MOTORS, VN
IR:MADYLENE           OC:                 EMP:
'P: . '-997-5111 EXT:  40 MP:   -   -     EXT:    RES STATUS:BOTH PARENTS
.OCKER:       SIBLINGS: 1 PLACE: 2 ETHNICITY:4  GRID: 20    PSAT Q     V
I.P.A.:2.25  RANK: 355 OF  747 CTBS % MATH:    READ:    LANG:   SAT Q    V
I.F.D.C.:NO  HANDICAP:                     G.A.T.E.:NO  BILING:NO  SP ED:NO
D CARD:NO   SCH RULES:NO  SMOKE PERM:NO  AUTO PERM:NO  OFF CAMP:NO   YR BOOK:YE
IORK EXP:NO  FREE PER:           LETTER SENT:                    CMS   1
'ISITS: C.G.C.:   EUREKA:    LIBRARY:    HEALTH OFF:   PRINCIPAL:   PSYC:
I.S.B.:YES ATHLETICS:NO  OTHER ACTIVITY:NO  GROUPS:59
            R E F E R R A L   I N F O R M A T I O N   PAGE <01>
EF NO   PERSON MAKING REFERRAL     DATE    PERIOD      PERSON REFERRED TO
0001  GUTHRIE                    09/14/82    05      BLACKBURN
    TYPE:  19 TRUANCY TARDIES               DISP:  27 PARENT CONFERNCE PHONE
0002  HIRD                       09/15/82    01      FISCHER
    TYPE:  15 SMOKING                       DISP:  25 SCHOOL SUSPENSION
                                   /  /
    TYPE:                                   DISP:
```

EXHIBIT 2   STUDENTS-AT-A-GLANCE   PREPARED ON 10 OCT 84

SECTION:
TEACHER:

STUDENT NUMBER	STUDENT NAME	GRADE	CM SCHOOL	ED EXPECT	DAYS ABS	CTBS READ	CTBS LANG	CTBS MATH	GPA	ACAD SC	HOMEWORK	JOB	ACTIVITY	LIKE SCH
149043	ADAMS, WILLIAM B	12	.	4Y	.	.	.	.	1.1	H	+	P	3	+
249052	ANDERSON, JOHN L	.	.	HS	.	.	.	.	.	M	+	F	0	+
341950	ATWOOD, DANIEL K	12	6	HS	57	33	14	3	1.9	M	-	H	0	-
149274	EAGLEY, LOIS J	12	3	4Y	35	52	84	83	2.6	M	0	N	2	+
542468	BAKER, MARY M	12	3	2Y	17	34	54	3	1.8	H	+	N	0	+
549341	BUTLER, JOYCE	12	3	2Y	18	49	67	0	2.7	H	+	N	0	+
743686	CALDWELL, THOMAS C	12	4	2Y	11	80	88	80	1.6	M	0	H	0	0
149048	CARTER, MATHEW	12	6	2Y	23	68	72	68	2.9	M	+	N	4	+
142771	CLARK, LARRY P	12	6	HS	30	.	.	3	1.5	H	0	N	0	-
149050	COOK, CHERYL	11	6	?	13	83	86	68	3.0	M	0	P	1	-
143177	COOPER, JANE L	12	6	.	55	36	26	35	1.4	.	.	.	5	.
244197	CURTIS, EDWARD N	12	6	4Y	27	19	7	7	2.1	M	+	F	3	+
149286	DAVIS, LYNN	12	1	4Y	7	66	84	95	3.8	H	+	P	3	+
149288	DUNCAN, JOHN	12	2	4Y	8	87	94	83	3.6	H	+	N	3	+
341828	EATON, TIMOTHY	12	6	2Y	37	10	12	2	2.4	M	0	F	0	+
549291	EMERSON, DOROTHY A	12	7	2Y	11	45	62	40	2.6	H	-	F	1	+
149069	EVANS, ROBIN S	12	4	2Y	31	41	20	10	2.2	M	+	F	0	-
149294	FARMER, DAVID R	12	4	HS	35				2.1	M	+	N	0	-
149295	FELDMAN, ROBERT	12	1	2Y	10	63	64	64	1.7	M	-	F	1	0
149301	FINK, AARON S	12	1	4Y	6	86	96	99	4.1	H	+	P	2	+
149303	HARRIS, CURLEY M	12	6	2Y	35	62	40	83	2.4	M	+	F	2	+
249306	HAYES, CYNTHIA	12	4	2Y	17	1	3	.	2.5	M	-	H	0	-
149167	KAPLAN, HAROLD D	12	5	2Y	27	61	8	32	2.5	M	0	H	0	+
148395	LEWIS, ANTHONY E	.	3	.	43	50	35	35	.	.	.	.	.	.
549168	MARCUS, STANLEY	12	4	4Y	10	83	77	92	3.2	H	+	N	3	+
549309	MC ARTHUR, EUGENE A	12	6	4Y	35	80	70	60	2.8	M	+	H	2	+
149172	MILLER, ELIZABETH	12	3	2Y	46	23	30	28	1.6	M	+	N	0	0
143336	MCGEE, OSCAR J	12	2	2Y	32	78	50	3	2.9	M	+	F	0	-
149129	PACE, DONALD W	12	2	2Y	30	16	28	45	1.6	M	-	N	1	-
142520	RANDLE, ANN	12	6	4Y	47	.	.	.	2.1	M	+	P	0	0
142793	ROBERTSON, SHEILA	12	6	4Y	30	99	74	43	2.5	M	+	P	0	+
243660	ROSS, RICHARD M	12	5	HS	45	.	.	.	.8	M	-	F	.	0
143179	SANDERS, JOAN N	12	8	.	118	8	0	37	1.1	.	.	.	.	.
149323	SCOTT, MARION J	12	5	2Y	27	47	49	31	2.1	M	+	P	0	+
549109	SILVERMAN, ARTHUR	12	4	HS	10	61	74	26	1.9	H	-	H	0	+
541481	SNYDER, EVELYN G	12	5	4Y	15	42	17	23	1.3	H	+	N	3	-
744147	STERN, BRUCE D	12	6	2Y	56	54	73	40	2.9	H	+	P	2	+
149262	STUART, DONNA	12	1	2Y	31	92	52	95	3.1	H	+	P	0	-
149329	THOMPSON, WENDY L	12	8	2Y	27	63	50	60	3.0	M	+	H	1	-
143580	WALKER, VICKI S	12	4	2Y	25	12	12	23	2.2	M	-	F	1	-

. = MISSING

CM SCHOOL: CAREER MAGNET SCHOOL.
    1=PHYSICAL SCIENCE AND TECHNOLOGY
    2=INTERNATIONAL RELATIONS & POLITICAL SCIENCE
    3=BUSINESS 4=INDUSTRY 5=PERFORMING VISUAL AND FINE ARTS
    6=MENTAL, PHYSICAL & BIOLOGICAL SCIENCES 7=LIBERAL ARTS
    8=ENTRY AND ESSENTIALS 9=DONT KNOW

ED EXPECT: EDUCATIONAL EXPECTATION.
   QU=QUIT HIGH SCHOOL HS=FINISH HIGH SCHOOL
   2Y=GO TO TRADE/TECHNIC SCHOOL OR JUNIOR COLLEGE
   4Y=GO TO 4-YEAR UNIVERSITY ?=DONT KNOW

DAYS ABS: NUMBER OF FULL DAYS ABSENT.

CTBS TEST RESULTS ARE REPORTED IN PERCENTILE RANK.

ACAD SC: ACADEMIC SELF CONCEPT. H=HIGH M=MEDIUM L=LOW

HOMEWORK: +=ALL/MOST OF THE TIME 0=SOMETIME -=SELDOM/NEVER

JOB: F=FULLTIME(30+) H=HALFTIME(20-30) P=PARTTIME(10-20) N=NONE

ACTIVITY: NUMBER OF EXTRACURRICULAR ACTIVITIES(1-5).

LIKE SCH: LIKE OF SCHOOL. +=LIKE 0=NOT SURE -=DISLIKE

This report was based upon a merged file created from five separate district files, including the student survey data. This merged file was first used as input to the report generator subprogram of the SPSS system set up by CSE staff to produce a prototype report format. The district then wrote its own software and essentially duplicated this report format with the capability of generating it for any specified class section number.

Of the thirteen pieces of information finally selected by the work group, seven came from the extant district information system and six were based upon responses to the student survey. (Appendix F contains annotated copies of reports to show which survey items were used.) It is interesting to note that one of the most influential criteria for the selection of information had nothing to do with content. To be sure, the group struggled with different opinions regarding what to include; for example, survey items like #19, #21, #63, and #76 (see Appendix A) were considered along the way but were eventually eliminated for lack of sufficient consensus regarding their utility. Yet, the most restrictive criterion for selection was this: All teachers were agreed that all the information for classes as large as forty students should fit on a single 8½ x 11 page, suitable to fit in their class notebooks, and not overly cluttered or densely packed with data.

At first blush, this may seem to be a rather trivial issue to get worked up about. Nevertheless, it was a critical one, and one that we will discuss further. Other issues emerging in the discussions around student-level data concerned the misuse and abuse of information, confidentiality, and creating self-fulfilling prophecies about students. These issues will also be addressed in another section.

Finally, we note some of the constructive uses _anticipated_ by the teachers for the Student-At-A-Glance report. For example, some of the teachers were experimenting with alternative forms of grouping practices to handle the wide range of individual ability differences in their classrooms. Using cooperative learning techniques, teachers need to form heterogeneous ability groups. The information in the student report (particularly GPA and CTBS data) provided the teachers with an immediate basis for _trial_ group assignments. As another example, the information inherent in the homework question and the questions regarding after school work and extracurricular activities were seen as providing teachers with some basis for dealing with students having trouble or complying with homework assignments. (The interview and survey data to be discussed shortly provide some interesting counter-points to these expectations.)

Class-At-A-Glance

Teachers generally agreed that once the Student-At-A-Glance report was available, they could get a pretty good "feeling" for their class by "eyeballing" the arrays of data in each column. However, there were additional data from the student survey, which were not necessary to see student-by-student, but were still useful when aggregated at the class level. This information generally pertained to student perceptions of classroom teaching and learning and preferences for various subject matters and instructional practices.

Again, unanimity among the work group members was not reached regarding inclusion/exclusion of data for this report; nevertheless a working consensus was achieved on three basic sets of items: student preferences for different instructional grouping configurations, student preferences for various kinds of instructional activities, and the

degree to which students say they like the particular subject matter of the class (e.g., mathematics).

Instead of the work group determining the report format for this report, the CSE staff used this opportunity to get teacher reactions to several different report formats ranging from straightforward tabular presentation to "state-of-the-art" graphics using the SAS statistical system.

Exhibits 3 - 5 present the range of data displays offered to the work group for their consideration. Exhibit 3 shows the Class-At-A-Glance data numerically with no graphics whatsoever. Exhibits 4a - 4c show the same data using the SAS graphics package and special plotter. Three pages were required since these graphs could not be produced in reduced form on a single page. Since each teacher would get different results for each class, it made no sense to physically cut and paste and reduce these figures into a single page format. (Apparently, sophisticated graphics capabilities on a mainframe computer are much less tractable than those on a microcomputer, e.g., MacIntosh.) Finally, Exhibit 5 presents a compromise solution using cruder graphics (ordinarily available print characters), but in a compact, easy to read format.

Although they had no trouble interpreting the results, teachers immediately rejected the format in Exhibit 3. And, although they were moderately impressed with the pretty graphics in Exhibits 4a-4c, they were once again adamantly opposed to receiving three sheets of paper containing information that could fit on one page. Moreover, they actually liked the simplicity of the cruder graphics in Exhibit 5 -- thus their decision was quick and easy to make.

EXHIBIT 3

CLASS AT A GLANCE
Date

Section No:

No. Enrolled Sutdents:
No. Students taking Survey:

	Like Very Much	Like Somewhat	Undecided	Dislike Somewhat	Dislike Very Much
93. Liking of mathmatics	0	50	46	2	2

INSTRUCTIONAL GROUPING REFERENCES

Listed below are four ways students can work in a classroom. Choose the letter on the answer sheet that tells how much you like or would like to work in each way, even if you don't do so now.

	Like	Undecided	Dislike
106. Alone by myself	57	6	33
107. With the whole class	49	17	34
108. With a small group of students, who know as much as I do	69	11	34
109. With a small group of students, some who know less, some who know as much, and some who know more than I do	63	9	29

STUDENT ACTIVITY PREFERENCES

Listed below are some things that you might do in a class. Choose the letter on the answer sheet that tells how much you like or would like to do each thing, even if you don't do it in class.

	Like	Undecided	Dislike
123. Listen to the teacher	57	20	23
124. Go on field trips	77	9	14
125. Do research and write reports, stories, or poems	26	9	66
126. Listen to student reports	33	20	43
127. Listen to speakers who come to class	74	6	20
128. Have class discussions	74	11	14
129. Build or draw things	46	29	26
130. Do problems or write answers to questions	40	26	34
131. Take tests or quizzes	31	17	51
132. Make films or recordings	40	23	33
133. Act things out	31	23	46
134. Read for fun or interest	54	26	20
135. Read for information	51	17	31
136. Interview people	33	29	34
137. Do projects or experiments that are already planned	51	20	29
138. Do projects or experiments that I plan	43	29	29

LIKING OF MATHEMATICS

PERCENTAGE
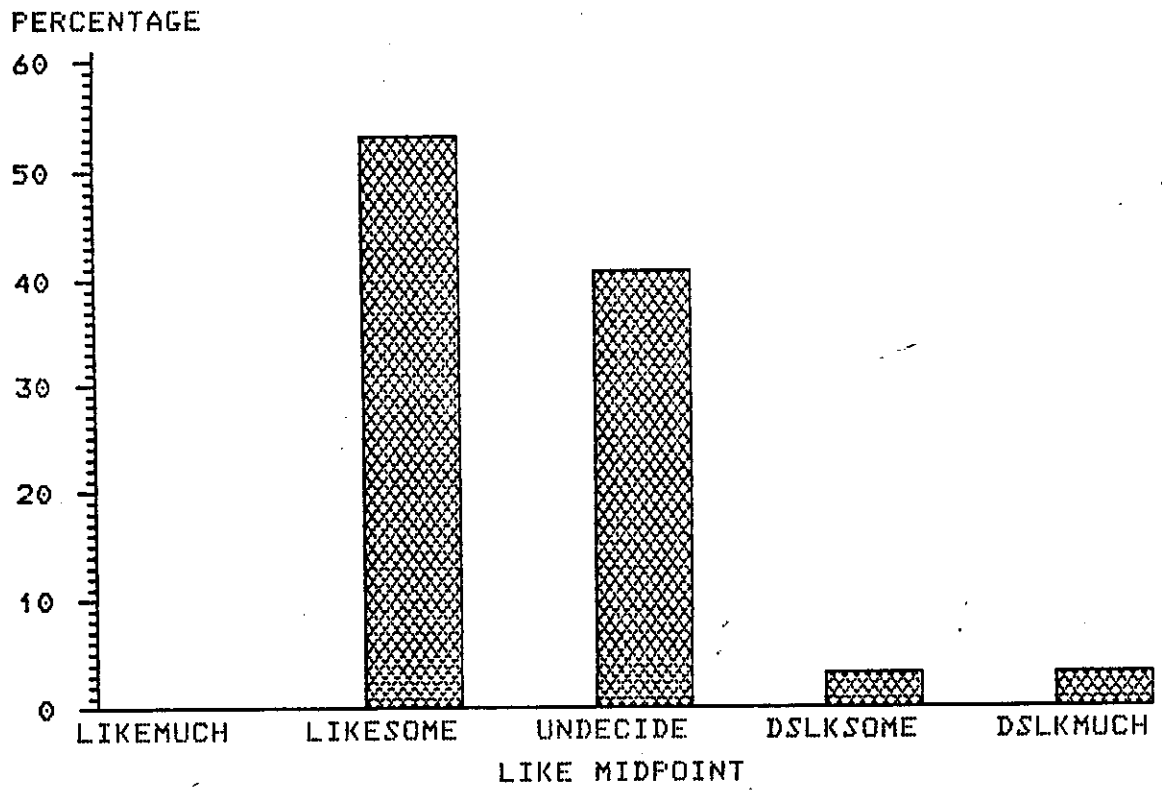
EXHIBIT 4a

INSTRUCTIONAL GROUPING PREFERENCES

MIDPOINT
ITEM   FREQ

ALONE   35

WHOLE CLASS   35

HOM SMALL CLASS   35

HET SMALL CLASS   35

```
        0      10     20     30     40
```

FREQUENCY

LEGEND: PREF   LIKE   UNDECD
                    DISLIK

EXHIBIT 4b

STUDENT ACTIVITY PREFERENCES
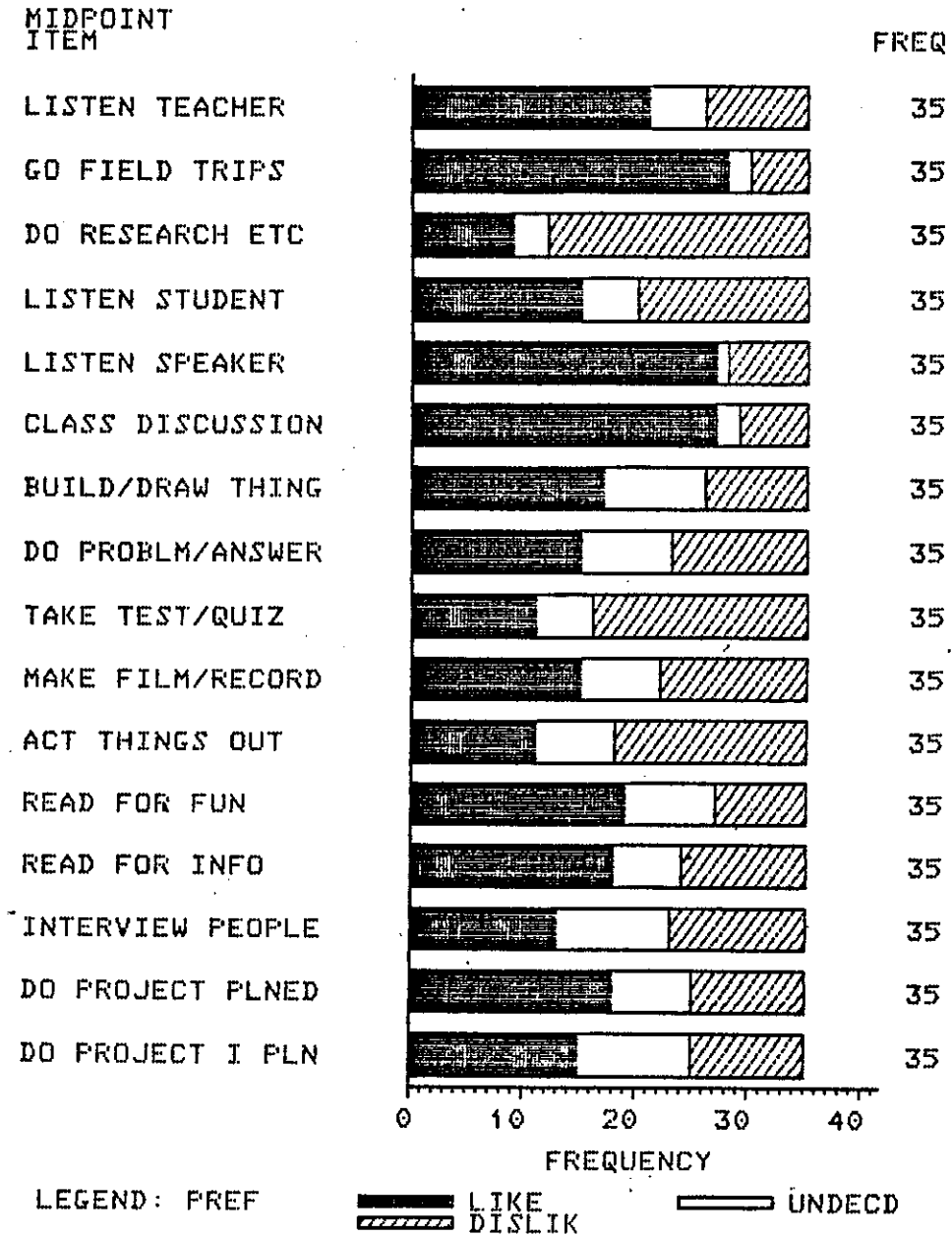
MIDPOINT
ITEM   FREQ

Item		Freq
LISTEN TEACHER		35
GO FIELD TRIPS		35
DO RESEARCH ETC		35
LISTEN STUDENT		35
LISTEN SPEAKER		35
CLASS DISCUSSION		35
BUILD/DRAW THING		35
DO PROBLM/ANSWER		35
TAKE TEST/QUIZ		35
MAKE FILM/RECORD		35
ACT THINGS OUT		35
READ FOR FUN		35
READ FOR INFO		35
INTERVIEW PEOPLE		35
DO PROJECT PLNED		35
DO PROJECT I PLN		35

```
0      10     20     30     40
            FREQUENCY
```

LEGEND: PREF   ▬▬▬ LIKE   ☐ UNDECD
                ▨▨▨ DISLIK

EXHIBIT 4c

EXHIBIT 5

CLASS AT A GLANCE

FALL 84

SECTION NO: XXXX
NO. ENROLLED STUDENTS: 35
NO. STUDENTS TAKING SURVEY: 35

```
|---------------------------------------------------------|
|                                                         |
|           INSTRUCTIONAL GROUPING PREFERENCES            |
|                                                         |
|   ALONE            XXXXXXXXXXXXXXXXXXXX--*************   |
|   WHOLE CLASS      XXXXXXXXXXXXXXXX-------***********    |
|   HOM SMALL CLASS  XXXXXXXXXXXXXXXXXXXXXXXXX---*******   |
|   HET SMALL CLASS  XXXXXXXXXXXXXXXXXXXXXX--***********   |
|                                                         |
|      XXX LIKE      --- UNDECIDED     *** DISLIKE        |
|                                                         |
|---------------------------------------------------------|
```

```
|------------------------------------------------------|
|                                                      |
|              LIKING OF MATHEMATICS                   |
|                                                      |
|   LIKE VERY MUCH                                     |
|   LIKE SOME        **************************        |
|   UNDECIDED        *********************             |
|   DISLIKE SOME     *                                 |
|   DISLIKE VERY MUCH  *                               |
|                                                      |
|------------------------------------------------------|
```
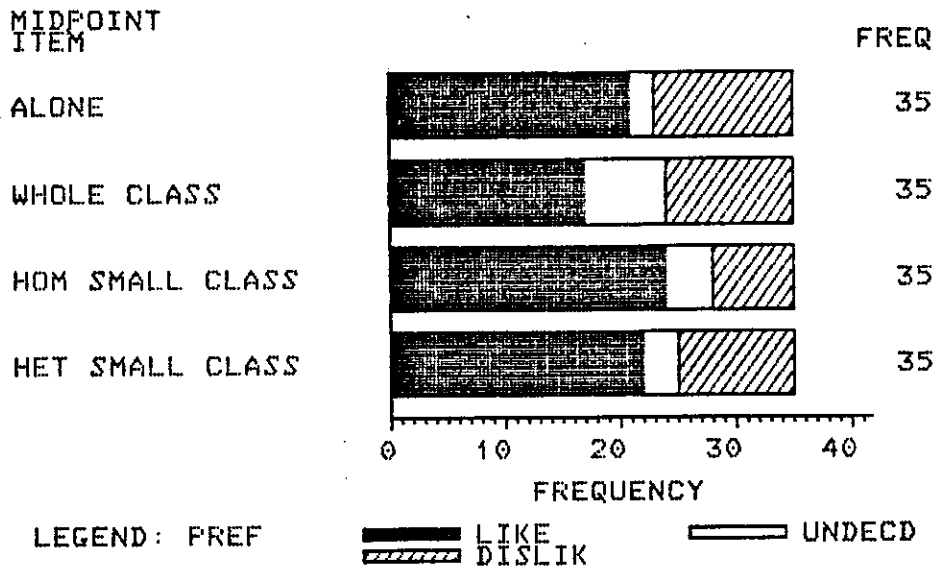
```
|---------------------------------------------------------|
|                                                         |
|              STUDENT ACTIVITY PREFERENCE                |
|                                                         |
|   LISTEN TEACHER    XXXXXXXXXXXXXXXXXXXX------********   |
|   GO FIELD TRIPS    XXXXXXXXXXXXXXXXXXXXXXXXXX---*****   |
|   DO RESEARCH ETC   XXXXXXXXX---***********************  |
|   LISTEN STUDENT    XXXXXXXXXXXX-------***************   |
|   LISTEN SPEAKER    XXXXXXXXXXXXXXXXXXXXXXXXX--*******   |
|   CLASS DISCUSSION  XXXXXXXXXXXXXXXXXXXXXXXXXX----*****  |
|   BUILD/DRAW THING  XXXXXXXXXXXXXXXXX---------********   |
|   DO PROBLEM/ANSWER XXXXXXXXXXXXX---------***********    |
|   TAKE TEST/QUIZ    XXXXXXXXXX-------*****************   |
|   MAKE FILM/RECORD  XXXXXXXXXXXXX-------*************    |
|   ACT THINGS OUT    XXXXXXXXXX-------****************    |
|   READ FOR FUN      XXXXXXXXXXXXXXXXX----------*******   |
|   READ FOR INFO     XXXXXXXXXXXXXXXXX------**********    |
|   INTERVIEW PEOPLE  XXXXXXXXXXXX---------************    |
|   DO PROJECT PLNED  XXXXXXXXXXXXXXXX-------**********    |
|   DO PROJECT I PLN  XXXXXXXXXXXXXX----------**********   |
|                                                         |
|      XXX LIKE      --- UNDECIDED     *** DISLIKE        |
|                                                         |
|---------------------------------------------------------|
```

During these discussions, issues again emerged such as the clinical-social orientations regarding the importance and use of information. Aggregating data at the class level also seemed to provoke another issue, namely, the reaction to data as if they were inherently directive. For example, does the information in the sample class report "tell" the teacher not to assign research projects to his/her class because they are the least liked class activity; or does the information provide a context for teachers in dealing with student affect, dispositions, etc., when, in fact, research projects are assigned? We will return to this and other issues later.

School-At-A-Glance

Up to this point, information was treated in the context of specific students in specific classes, either as individual data points or as aggregated at the class level. In moving to the school level, a significant shift in orientation along the clinical to social data use continuum is required; all teachers must now become involved in the same set of data from the perspective of organizational needs, decision-making, planning, evaluation, and so forth.

Interestingly, it was not until this level of information use was considered that administrators became noticeably more involved and teachers become more passive in terms of inclusion-exclusion decisions. Perhaps this phenomenon was due, in part, to other reasons (e.g., the way CSE staff structured work group meetings) besides the obvious ones of traditional role and organizational structures, at least the ones that usually get played out in practice -- teachers responsible for what goes on behind the classroom door; and principals responsible for schooling issues that have visible impact at the building level.

In any case, the School-At-A-Glance report that emerged eventually (see Exhibits 6a - d) was influenced largely by the principal's interest in what he saw as the several main issues, addressed by data in the student survey, that were of immediate concern to the high school. These issues were:

1. What <u>are</u> the curricular goal emphases at the high school; what <u>should</u> they be?

2. What do students and parents want; and how do these perceptions and expectations jibe with what students actually do upon graduation?

3. What are the implications of these issues for the Career Magnet Program and student comfort in selecting a career path in this program?

Basically, the analyses reported in Exhibit 6 begin to explore the information relevant to the first two issues by bringing to bear relevant student survey results along with several other variables from the district's information system. It should be emphasized that although it was certainly the intent of our project to capture data relevant to the school in these reports, we were also concerned with analysis and reporting issues such as:

● the optimal balance of descriptive text and graphics.

● the relative appeal of one graphical mode over another.

● ease of interpreting graphical techniques for representing the relationships between two or more variables.

● the amount of information to be contained in any one report.

To be sure, many graphical techniques are available and none that we have used thus far are particularly novel. Nonetheless, knowing about things like bar charts, histograms, pie charts, frequency polygons,

Student Survey Results
May, 1984

School-At-A-Glance

FUNCTIONS OF SCHOOLING

Social Development
        Instruction that helps students learn to get along with others, prepares
        students for social and civic responsibility, develops students' awareness
        and appreciation of our own and other cultures.

Intellectual (Academic) Development
        Instruction in basic skills in mathematics, reading, and written and verbal
        communication and in critical thinking and problem solving abilities.

Personal Development
        Instruction that builds self-confidence, self-discipline, creativity, and
        the ability to think independently.

Vocational Development
        Instruction that prepares students for employment, developing the skills
        necessary for getting a job, developing an awareness about career choices
        and alternatives.

Some Student Perceptions:
(see survey questions 90 & 91; note wording --
students could only choose one)
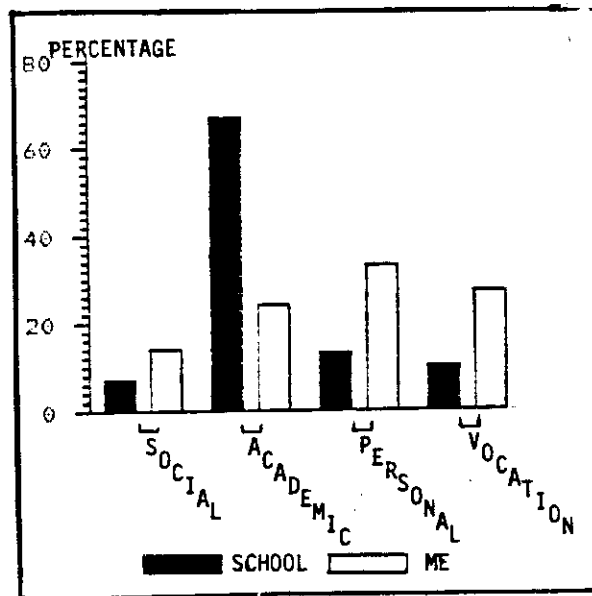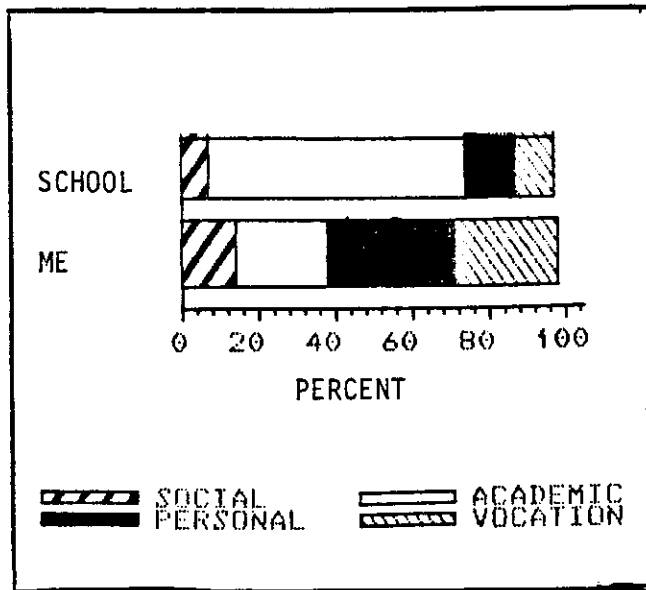
Students perceive the school as emphasizing mainly the academic function; from
the students' point of view, however, they tend to spread the emphasis around to
the other goal areas, particularly the personal and vocational functions.

Congruency:
        35% of the students place the most importance on the same goal
        area they see the school as emphaasizing. To put it the
        opposite way, nearly 2/3 of the students would prefer a dif-
        ferent goal emphasis than the one they perceive.

DO THESE PERCEPTIONS CHANGE DEPENDING UPON GRADE LEVEL?
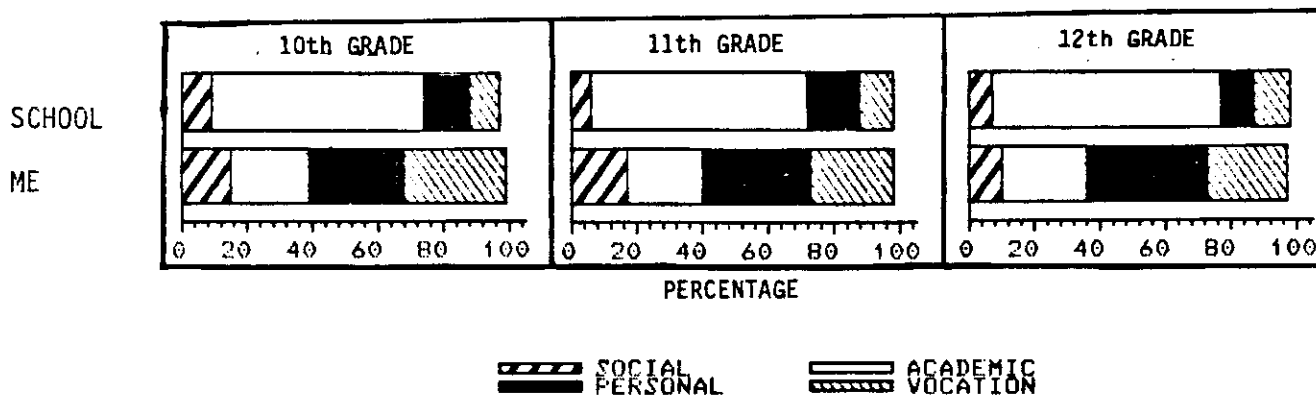
The trends, if any, are slight. Emphasis on Personal Development increases across grades (29% of 10th graders, 33% of 11th Graders and 38% of 12th graders) while emphasis on Social Development (16% in 10th grade, 17% in 11th grade, 11% in 12th grade) and Vocational Development (31% in 10th grade, 26% in 11th grade, 25% in 12th grade) decreases.

DO THESE PERCEPTION CHANGES DEPEND UPON SEX?
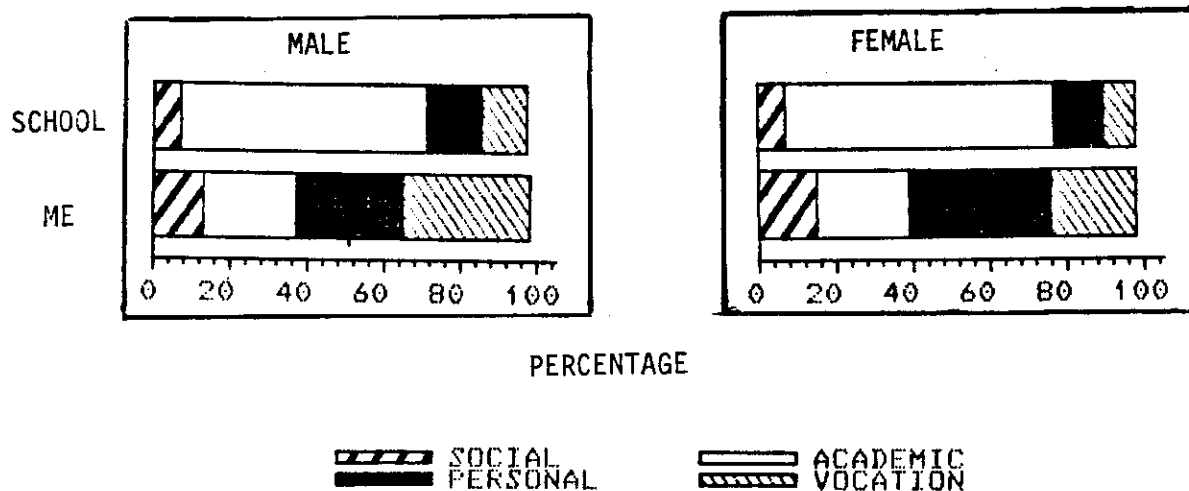
Boys place greater emphasis on vocational development than girls (33% of boys versus 22% of the girls) while girls place greater emphasis on Personal Development than boys (37% of girls versus 29% of boys).

STUDENT ASPIRATIONS AND EXPECTATIONS
(Survey questions 6, 7, and 8)

PERCENTAGE

QUIT
2-YR. COLLEGE
DON'T KNOW

HIGHSCHOOL
4-YR. COLLEGE

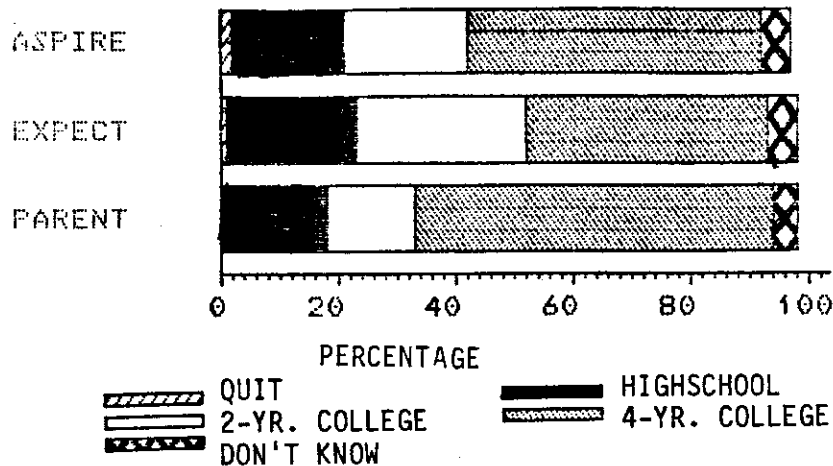MAIN TREND: Half of the students would like to go to a 4-year college or university in contrast with only 22% aspiring to attend a 2-year college. Their expectations, however, drop by about ten percent; 40% expect to go to university and 30% expect to go to vocational school/junior college. Students perceive their parents' attitudes to be more in line with students' aspirations than with students' expectations.

PERCENTAGE

QUIT
2-YR. COLLEGE
DON'T KNOW

HIGHSCHOOL
4-YR. COLLEGE
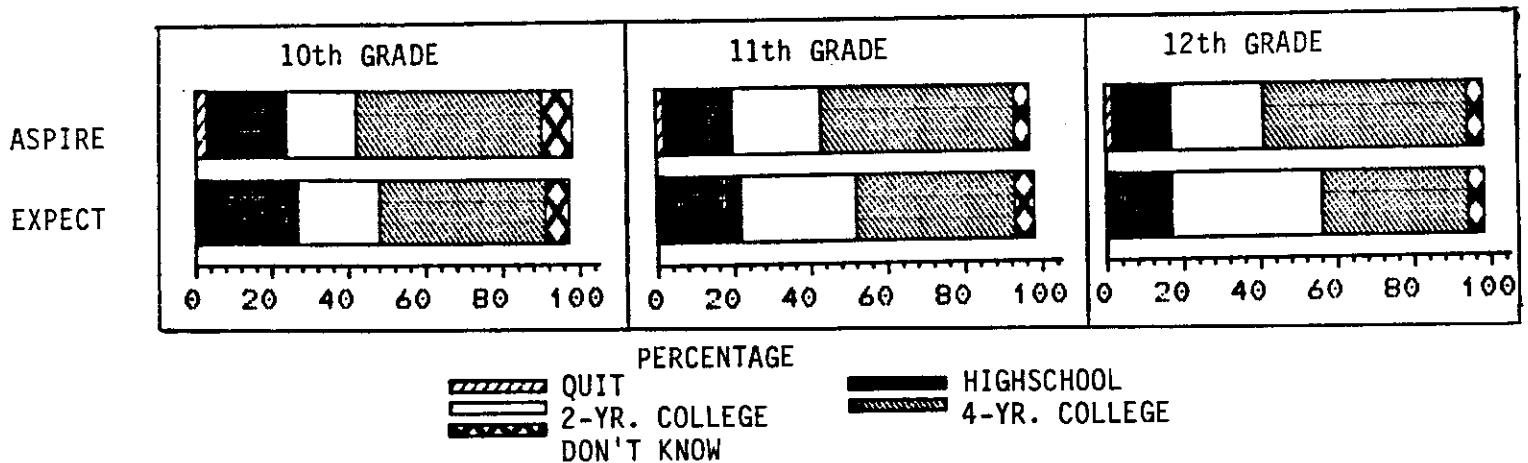
The general trend in aspirations is toward more education (both 2-year and 4-year colleges) across grades while the trend in expectations is toward less four-year college and more two-year college. While the percentage of students aspiring to attend a four-year college increases slightly across grades (from 48% at 10th grade to 53% at 12th grade), the percentage of students that expect to attend a four-year college decrease slightly (44% at 10th grade to 38% at 12th grade). The percentage of students expecting to attend a trade school or junior college increases substantially across grades (22% in 10th grade, 30% in 11th grade, and 39% in 12th grade).

NOTE: According to district records, only 5-7% of all graduating seniors go on to a 4-year college.

GPA: Averages for Males and Females at Each Grade Level
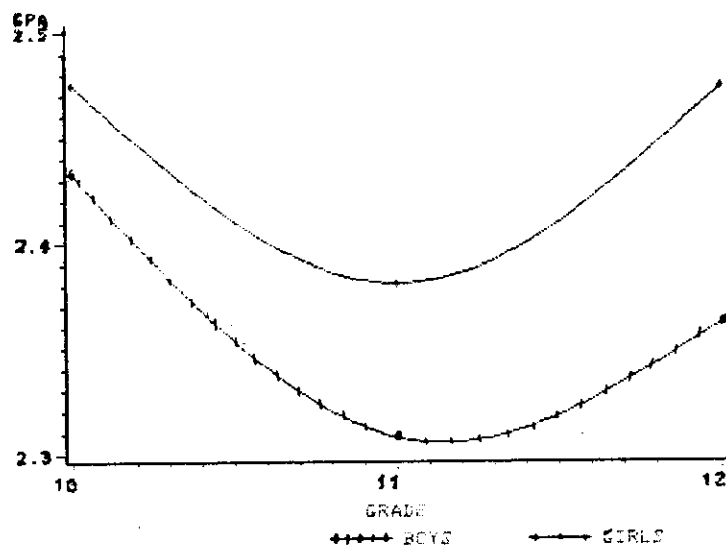
Two slight tendencies are apparent: (1) Boys show lower GPA averages than girls, and (2) GPA goes down in the 11th grade.

DAYS ABSENT: Averages for Males and Females at Each Grade Level
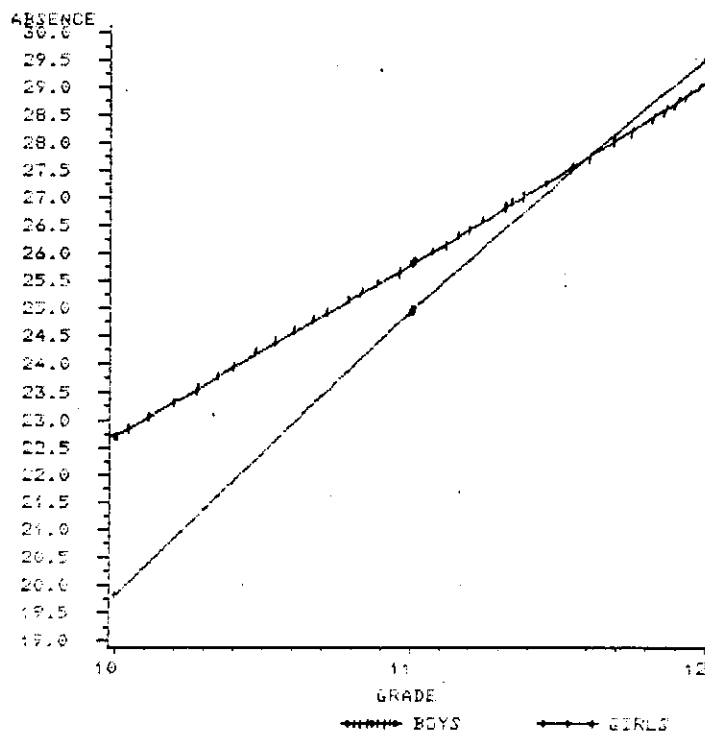
Several trends are noteworthy: (1) Boys are generally absent more days than girls; (2) Absences increase almost linearly from the 10th through the 12th grades (roughly 3 to 4 more days absent in each grade level); (3) The increase in days absent over grade levels is more exaggerated for girls than boys (in fact, girls slightly surpass boys in the 12th grade).

and so forth is one thing, using them in certain contexts for certain purposes to be understood and used in those contexts is quite another thing. It is quite clear in the literature how well-known graphical techniques can be totally misused, misinterpreted, and/or irrelevant to the purposes intended (see, for example, discussions in Horwitz & Ferleger, 1980; Huff, 1954; and Tufte, 1983).

In a particularly enlightening and creative book on graphical methods, Tufte (1983, p. 51) outlines what he considers to be generic principles underlying quality visual presentation of quantitative data.

"Graphical excellence

. . . is the well-designed presentation of interesting data--a matter of substance, of statistics, and of design.

. . . consists of complex ideas communicated with clarity, precision, and efficiency.

. . . is that which gives to the viewer the greatest number of ideas in the shortest time with the least ink in the smallest space.

. . . is nearly always multivariate.

. . . requires telling the truth about the data."

In order to achieve these principles in practice, "graphical displays should

- show the data

- induce the viewer to think about the substance rather than about methodology, graphic design, the technology of graphic production, or something else

- avoid distorting what the data have to say

- present many numbers in a small space

- make large data sets coherent

- encourage the eye to compare different pieces of data

● reveal the data at several levels of detail, from a broad overview to the fine structure

● serve a reasonably clear purpose: description, exploration, tabulation, or decoration

● be closely integrated with the statistical and verbal descriptions of a data set." (p. 15)

Although we have not been particularly creative with daring new visual displays, we have tried to incorporate many of these principles while at the same time being sensitive to the needs and concerns expressed by administrators and teachers in the work group. Thus, the reports displayed in Exhibit 6a - d reflect deliberate attempts to:

1. Include just enough narrative to explain the major trends embedded in the graphs and include only the most relevant numerical results upon which the graphs were based. (All teachers were given the raw data for reference purposes in the form of the student survey in Appendix A.)

2. Experiment with different graphical techniques that may represent the same data but highlight different emphases. The two graphs in Exhibit 6a, for example, are based on the same survey questions but call attention to different comparisons. The first graph highlights relative emphases on the schooling functions (social, intellectual, personal, vocational), while the second highlights the difference between perspectives (school's emphasis vs. students' preference).

3. Organize visual displays thematically, with one theme per page, each successive page building upon previous ones, and all pages adding up to a reasonable (not overly data-laden) foray into the issues of concern to the group.

4. Go beyond a simple univariate treatment of information but not overly complicate the analytical and graphical treatments of data. The comparisons by grade level and sex (Exhibits 6b and c) and bivariate relationships in Exhibit 6d are illustrative.

5. Bring to bear a variety of information from a variety of sources (e.g., student survey, extant information system, and district records).

We must emphasize, again, that these reports are designed primarily as an "experiment" to test the feasibility of various data displays; as such, they only scratch the surface of what can be done analytically.

with the data in a comprehensive information system.

School-At-A-Glance data, obviously, are useful primarily at the school level. Since promoting and studying school-level planning and development activities were beyond the scope of our project resources, we obtained no further data on the use of these reports. However, At-A-Glance reports for students and classes were produced for each teacher, and it is the use of these reports that we turn to next.

Teachers' Reactions to At-A-Glance Reports

It will be recalled that only a select group of five to ten teachers (out of a staff of 83) participated heavily in the development of the student and class report ideas. Even so, these teachers were eager to see how, if at all, they could use these reports in their actual classroom contexts. We were particularly interested, therefore, in the reactions of the remaining school staff. These were obtained through interviews and a survey questionnaire.

Survey Results

Included with the Teacher Information Use Survey in Appendix E are the frequencies of teacher response to each item plus the results of the content analyses for the open-ended questions on use, nonuse, abuse, and revision issues. It should be noted that 34 teachers (41%) did not attend the meetings during which survey data were collected. Based upon casual questioning of the teachers and administrators in our work group, it would seem that there was no systematic reason for this other than the fact that the usual reminder notices for the meetings had not been sent out. Assuming this to be the case, and no systematic bias in "forgetfulness," we have reason to believe that our 49 (58%) respondents are fairly representative of the school staff. Judging from the numbers in question #1, the respondents also represented proportionally the

various department areas (eg., proportionally more teachers are in the sample from the academic areas of mathematics, English, science, social studies, and foreign language.)

In question #2, we attempted to sort out the "users" from the "non-users" for each of the two types of reports. Five (10%) of the teachers attending the survey meetings were not able to respond further for lack of information. Four of these five teachers had not received their reports and were unaware that they were available in the main office of the school. Considering, first, the Student-At-A-Glance report, the remaining 44 teachers fell primarily into two groups: (a) 21 teachers (48%) who received the At-A-Glance reports, glanced at them, and put them away -- the "nonusers," and (b) 23 teachers (52%) who took the information into account in some fashion at least once since receiving the forms -- the "users." These percentages are nearly identical, 49% and 51% respectively, for "nonusers" and "users" of the Class-At-A-Glance forms.

We feel, however, that these percentages may underestimate the actual useage in view of how the teachers attended to the remaining parts of the survey questionnaire. We had intended (and so instructed) users and nonusers to fill out different sections of the survey. As it turned out, as many as 31 teachers responded to the closed-ended questions (#3-6) regarding report use. Apparently, although half a dozen or so teachers may have indicated that they had only "glanced" at the forms, they felt they had some basis upon which to answer questions that clearly involved more than just "glancing." The usage percentages, therefore, may be closer to the 60-65% range. In any case, all percentages reported below are based upon the actual number of teachers choosing to respond to each question.

In what follows, we will separate the discussion for the use and nonuse parts of the survey. In a third section, we will blend in a summary of the interview results to highlight the conclusions that we draw from these data.

The "Nonusers." Judging from item #3 in the nonuse part of the survey, the primary reason that some teachers had for not using Student- and Class-At-A-Glance reports had to do with bias -- that is, a concern that having access to such information at the beginning of a semester would bias their judgment of students, perhaps even create a self-fulfilling prophecy in terms of teacher-student interaction, and, ultimately, student outcomes. This concern, in fact, was raised many times by members of the work group and was one that we tried to acknowledge explicitly in our meetings with all teachers when the forms were distributed. Indeed, this issue is a legitimate concern and one that is difficult to resolve (if at all). We will return to the bias issue in the last section of this report.

Several of the teachers responding to the nonuse portion of the survey indicated that some kind of revision in the report forms would have increased their utility. Among the changes suggested (see item 4a), the most important appears to be in the choice of information, both in terms of what the work group selected to include on the student report and the actual content of the student survey items used in the class report. This suggests, perhaps, that a more tailored approach -- one where teachers have a menu of information options for both student and class reports -- would be more appealing to teachers.

Regarding abuse issues (item #5), the "nonusers" were clearly concerned with the initial bias issues noted above. Teachers were also concerned with the confidentiality of the student reports and the

possibility that they might be accessible to students. Finally, the jist of the few additional comments and concerns registered by this group related mainly to the information idea as an interesting one, theoretically, but as an unrealistic one in practice.

The "Users." It is clear from the teachers' responses to items #3-7 in the use portion of the survey that a great deal of variation exists in reports on the frequency, quality, consistency, and specificity of use for both the Student- and Class-At-A-Glance reports. However, two tendencies in the data are equally clear: The class report received far less attention and use than did the student report; and both forms were used far more often at the beginning of the semester than at other times throughout the 2½-month trial period.

These findings suggest at least three issues of concern. First, they reinforce the seriousness of possible and inappropriate prejudgments of students initially in the semester. Second, they suggest the importance of the personal knowledge of teachers, at least as they tend to rely upon it even more shortly into the semester. Third, these findings point out once again the relative ease with which teachers relate to data on individuals in contrast to aggregated information on groups. These themes will be picked up again in the next section.

It is interesting to note the kinds of information receiving the most attention from teachers, especially on the more often utilized Student-At-A-Glance report. Based on the results in question 7, grade point average was the most frequent piece of information used, followed close behind by educational expectations (student survey item #8), self-concept (student survey items #15-23), CTBS scores, and absenteeism. Each of these data types received over 50% "endorsement" from the teachers.

These results, however, do not convey the more important data, namely, the ways in which these bits of information were used <u>jointly</u>. In fact, based upon the small group discussions with teachers at the time of the survey, prior discussions with the teachers in the work group, and the results of the teacher interviews, the predominate bivariate mode of information utilization was the juxtaposition of each student's GPA and CTBS scores, first, followed by a comparison of that contrast with the student's educational expectations, second.

The following chart portrays eight possible outcomes addressed by teachers explicitly or implicitly as they engaged in this kind of descriptive analysis of individual GPA, test score, and expectations information:

| | College-Bound | | Not College-Bound | |
	High Test Scores	Low Test Scores	High Test Scores	Low Test Scores
High GPA	1	2	3	4
Low GPA	5	6	7	8

The most frequently addressed combinations of outcomes were those represented by cells 5, 6, and 7. The least talked about (if ever) cells were 1 and 8. By inference, and given the interpretive context of teacher remarks in many discussions of these data, we conclude that most teachers accepted these data as unconditionally valid, prognostic, and confirmatory. That is, cells 1 and 8 were thought to be perfectly compatible and realistic given the student's expectation. Cells 5 and 7 indicate students who were not living up to their ability potentials. Cell 6 indicated a student with unrealistic educational goals. Since the few students falling into cells 2 and 4 were thought of as "over-achievers," it would appear that the CTBS scores, above all other

information, were seen by teachers as the ultimate "truths" for each student.

Certainly these patterns of information use were not universally true for each teacher for each application of the report forms. Based on the data in question #8, a number of other uses (e.g., grouping students for instruction, planning activities, flagging potential absenteeism, getting a general indication of student attitude, etc.) were evidenced. Nevertheless, the above patterns reflect, in our view, the primary tendencies in teachers' interpretations and inferences. Thus, they raise, once again, the issues we will be addressing concerning teachers as researchers, the power of numbers, the misuse of information, and the educative function in building and using school-based information systems.

It is clear from the teacher responses to question #9 concerning desired reporting changes, that different teachers had different ideas of what kinds of information were needed. This reinforces our earlier observation that such reporting devices may well serve better the needs of teachers if they were tailored to teacher requests. In the results for question #10, we see once again the overriding concerns of prejudgment and confidentiality.

Finally, the generally positive comments from those who used the student and/or class reports (see item #11) suggest that the concept, at least for the majority of teachers, is a viable one. This assumes, of course, that the caveats and concerns we have been addressing throughout this report can be addressed explicitly and educatively by teachers in the context of their own information use.

Interview Results

By and large, our interpretation of the interview data is remarkably compatible with, and supportive of, the above findings and inferences based upon the survey results. In part, this is due to the fact that many of the same open-ended questions on the survey were used to prompt teachers during the interview. Additionally, many of the closed-ended questions on the survey were developed based upon the teacher interview protocols. The similarity of results between the two methods of data collection can be seen, therefore, as partial evidence for the convergent validity of our findings.

However, a good deal of additional, fine-grained information was obtained in these interviews that is reported in more depth elsewhere (Dorr-Bremme, 1985). We will simply summarize these findings here to reinforce the general patterns noted above. Of the eighteen teachers interviewed, only several had any idea of what any other teachers might have been doing with their student and class reports. Only two instances of organizational (versus individual) uses of data were recorded; these occurred within departments and were focused mainly on student placement issues.

No teachers indicated that they were aware of any misuse of the information provided in the reports. A few, nevertheless, expressed the concern of bias and prejudgment made possible with access to the information. Again, the predominate pattern of using the Student-At-A-Glance report centered on the CTBS test score-GPA comparison with the built-in assumption that the test scores and GPA were unconditional indicators of competence and performance, respectively. Little use was reported for the Class-At-A-Glance form. Although few teachers had any recommendations for changing the form, those that did again had

different ideas for what information to delete and what to add.

We turn, now, to our promised discussion of the many concerns and issues that have precipitated over the course of our investigation.

Emerging Issues

We have already alluded to (and in some cases described briefly) some issues that seem to continually appear as teachers, administrators, and outside collaborators attempt to work together on designing, developing and using an information system that aims to be responsive to needs at the building level. We will now briefly review and elaborate these issues.

Clinical Versus Social Uses of Information

Often in the deliberations over which piece of student survey data might be useful, particularly for class and school level reports, considerable differences of opinion seemed to occur between members of the work group. Usually, the generic form of the debate seemed to take the forms of "I don't see how I could use this piece of information in teaching a student" versus "I think these data could help us (me) make planning decisions about the school (my class)." In effect, the disagreement was more a matter of differing orientations than it was of informational content.

CSE staff intervened a number of times in these discussions attempting to clarify the individual, diagnostic, clinical orientation, on the one hand, and the organizational, planning, social perspective, on the other. These interventions seemed to help clarify and facilitate the discussion and also permitted the observation that some teachers simply placed less value on the social use of information. Nevertheless, teachers could more easily sort out the substantive aspects of inclusion-exclusion decisions; they could, for example, agree that an item like

"How much do you like mathematics?" had less diagnostic use at the individual level, yet could be aggregated at the classroom level to provide information helping the teacher deal with class climate and learning environment issues.

Judging from the results of the information use survey, the social use of information was generally an alien concept for most of the high school teaching staff. This is not to say that when given the appropriate opportunity (purpose, setting, time, training, etc.), teachers were unable to work with information at levels other than the individual student (see below). It was clearly the case, however, that without such opportunities, teachers tended not to be inclined towards selecting items for, or using analyses based upon, aggregated data for groups. Our working assumption has been (and continues to be) that multilevel analyses and interpretations of school-based information have an immense potential for facilitating individual-diagnostic, class-instructional, and school-planning decisions and evaluations. The results from this study suggest to us, therefore, the importance of an educative/training function for collaborators, teachers and administrators (see below).

The clinical-social distinction is not a new one in work relating to assessing organizations, but its manifestation in the school setting as people attempt to design and make sense out of comprehensive information systems deserves further study. Clearly, the issue has a direct bearing upon statistical and psychometric concerns arising out of multilevel analysis. Also clear, are the interacting effects of the socio-cultural context and circumstances of schooling and teaching that may predispose teachers to "think clinically"--we are referring here to features such as the hierarchical organization of schooling, traditional

roles of administrators vis a vis teachers, and the ways teachers have for developing and organizing their "working knowledge."

The clinical-social issue both cuts across the issues that follow and discussing it in more depth is beyond the scope of this report. We refer the interested reader to a separate paper prepared specifically on this topic (Sirotnik, Dorr-Bremme and Burstein, 1985).

Teachers As Researchers/Data Analysts

Over the course of our meetings with the work group, teachers and administrators behaved more and more like trained researchers, asking more questions of the data and requiring more sophisticated treatments of the data (e.g., bivariate and multivariate analyses). This corresponds with the observation above that school staff can interact with information in a fairly sophisticated manner when given the opportunity to do so. Certainly part of this may be due to our presence and our deliberate suggestions regarding the ways in which data can be explored (see Appendix B). However, these enlightened approaches to data exploration were clearly evident in the work group from the beginning and were evidenced by several teachers never even involved in the work group.

Our point here is to cast some doubt on the often heard lament that teachers don't really care about having more and better information and, even if they did, wouldn't know what to do with it. The fact of the matter may be less an issue of caring and more one of professional opportunity. The current circumstances of teaching and administrating simply do not permit the kind of time necessary for informed dialog, decision-making, action-taking, and evaluation that characterizes a dynamic and renewing organization (Goodlad, 1975).

As the age of information explodes upon us, along with the techno-
logy to handle it, the pressures for organizational change become
impossible to ignore. Many organizations in the private sector have
been both receptive and responsive to, for example, the increased role
of workers as informed decision-makers (Peters and Waterman, 1982). Our
belief is that schools (and their districts) will need to change in
similar and perhaps even more profound ways to allow administrators and
teachers to participate more fully as professionals and engage in
inquiry processes that can be significantly advanced by the kind informa-
tion systems we have been discussing.

The Power of Numbers

When teachers are ordinarily presented with quantitative data, it
is usually of the prescriptive variety and often for the purpose of
accountability -- standardized test scores are the prime example. Even
in ordinary, everyday life we are bombarded with numbers that seem to
suggest responding rather than reflecting -- Dow Jones averages,
inflation rates, weather reports, etc. It is not surprising to see
school staff, therefore, reacting to survey data as if they contain the
prescription for educational change instead of providing just one more
heuristic for helping to understand the possible directions for change.

The typical way in which we observed this phenomenon is illustrated
in the following exchange (paraphrased here) that occurred among the
members of our work group:

> Person A: If we allow these data to make decisions for us, then we
> must be concerned with the validity of the student responses.
>
> Person B: I give tests--I have a vested interest, as a teacher, in
> student assessment. Would I reconsider this method of evaluation
> just because kids say they don't like tests? Maybe so.
>
> Person A: I think learning to read is more important than any
> subject matter per se. So I assign reading both for content and

skill development. If the survey indicated students don't like
textbooks, should I not bother to teach them to read?

Person C: It seems that the dilemma here is more a question of
perceptions regarding what the data mean.

Person C, of course, hit the nail on the head. We added our own "two

cents" to this discussion by noting that data do not make decisions --

people do. Thus, information is best used not as a blueprint for action

but as a catalyst for, and adjunct to, staff discussion and decision-

making. These kinds of discussions occurred a number of times

throughout the course of the project, and it seemed to be of some

considerable relief to the work group to know that it's OK to be

proactive rather than reactive in regard to information and the use of

information.

Information and Self-Fulfilling Prophecies: Issues of Misuse and Abuse

The potential for misusing information--violating confidentiality,

creating self-fulfilling prophecies regarding individuals (e.g.,

students, based on CTBS "ability" scores), misinterpretations,

overinterpretations, and inappropriate applications of data, and so

forth--has always been a feature of districts and schools. The presence

of a comprehensive and accessible information system merely exacerbates

the problem.

Nonetheless, it is still a serious problem and we have been sensitive

to it in the general context of developing and using computerized

information systems (Sirotnik, 1984). The teachers in the work group

(as well as several others in the faculty at large) have also been

worried about the abuse of people through the misuse of data, and they

have voiced their concern several times over the course of this project.

Interestingly, this concern was provoked by the presence of information

like self-concept, homework compliance, and educational expectations.

Yet data such as the ever-present standardized test scores have always had as much (or more) potential (and actual) misuse--for example, the stigmatizing and disenfranchising from academic excellence of many students in low tracked classes (Oakes, 1985).

Clearly related to the "power of numbers" concern is the issue of information misuse and abuse of most concern to teachers in our study, namely, the potential biasing and prejudging effects created by supplying teachers with student information (particularly CTBS-type test scores and GPA) initially in the semester. We would not be too concerned about this issue if it were only a theoretical possibility. Unfortunately, it is not. As teachers went about their typical pattern of exploring the information on the Student-At-A-Glance form -- comparing GPA, test scores, and academic expectations -- no explicit instructional concern was evidenced for those many students who were low on all three variables. This is not to say that teachers were not, in fact, concerned about these students and responsive to their needs in classes; we did not observe these teachers at work in the classroom. Our inferences are based strictly upon teachers interacting with information; and we must infer that, in the case of these low achieving students, they are seen by teachers as living up (or perhaps "down") to their abilities and expectations. (Pedagogically, of course, this assumption conflicts with everything we know about the power of individualization, small group instruction, mastery learning, and so forth.)

By contrast, this inference is supported in the way teachers made explicit use of the student information, i.e., flagging those students not living up to their abilities and expectations -- the college-bound, high CTBS scoring students with low GPA's. In our view, then, those

teachers expressing great concern over the prejudicial effects of student information had an important point to make. Moreover, we find no comfort in the old notion that it is people, not the information per se, that carry the potential for abuse. It may well be that the costs due to the misuse of information may well outweigh the advantages of individually based reports like Students-At-A-Glance.

Our recommendation, however, is not to "throw the baby out with the bath water." If information has the potential to be useful -- and we believe it has -- then those who use it must reflect seriously on the purposes for use and the education necessary for using information appropriately. For example, do CTBS scores represent the most useful, valid and reliable diagnostic information, measures of scholastic ability, and so forth? If not, what kinds of information might be more useful to classroom teachers and how would they be more appropriately utilized? Needless to say, this whole issue is bound to become messier before it becomes clearer. We can only remain sensitive to the misuse of data within the context of the constructive use of information systems.

Information Versus Knowledge

Implicit in all of these emerging themes is the distinction between information and knowledge -- that is to say, the problematic blurring of this important distinction on the one hand and the necessity for clearing it up on the other. It is widely acknowledged that we have passed from an industrial society into one of information and technology. All the conceiveably relevant information on any given school can now be stored on a few diskettes and manipulated at will with relatively inexpensive microcomputer hardware and software. With the invention of laser disk storage and retrieval technology, all the

conceiveably relevant information for an entire large school district can be (or will be shortly) stored on one or two devices small enough to carry around in a shirt pocket.

Our concern, of course, is the "tail wagging the dog" phenomenon, the technological seduction of practitioners (and evaluation researchers) into collecting information simply because it's there. Information is now cheap; knowledge, however, is still at a premium.

The importance of this observation is clearly highlighted by the experiences in this project. We have noted several times throughout our discussions how teachers can become trapped by the apparent veracity of the information per se and fail to critically evaluate the meaning of information in the context of practice. When we speak of knowledge, therefore, we have in mind the pursuit of understanding, the search for interpretive meaning of phenomena in context. But we do have in mind, obviously, the idea of informed understanding. Information serves as a catalyst for this process as does, most importantly, the process serve as a catalyst for seeking out appropriate information.

The Personal Knowledge of Teachers

Yet another issue related to what we have already been discussing are the competing epistemological paradigms inherent in the concept of a rigorous, operationally defined, comprehensive information system on the one hand, and the primary way in which teachers ordinarily go about establishing meaning in what they do -- personal knowledge -- on the other. A number of researchers who have done in-depth case studies of how teachers make day-to-day decisions in their classrooms have arrived at similar conclusions: teachers do it on the basis of unique, even artistic, ways of combining intuition, experience, conventional wisdom, etc. accumulated over their years of teaching and socialization into

schooling. Moreover, the minute to minute (often, second to second) decisions teachers make during an instructional period are laced with interacting contingencies not easily informed by information systems, no matter how quickly retrievable (MacKay, 1978).

The idea of personal knowledge, of course, is not new; we have borrowed the term from its inventor, Michael Polanyi (1958). In particular, we are concerned with his notion of the "personal participation of the knower in all acts of understanding (p. vii)." Others have made use of similar ideas in their studies of how teachers and administrators develop and make use of knowledge in practice (see, for example, Kennedy's (1984) concept of "working knowledge" and the inquiry paradigm suggested by Tharp and Gallimore, 1982).

It is not surprising, therefore, that the teachers in our study reported using the At-A-Glance reports primarily at the beginning of the semester. Moreover, in those several instances where teachers were instructing year-long subjects, they reported little use at all for the report forms since they were already familiar enough with each of their students. In effect, it doesn't appear to take much time before teachers come to rely upon their own, personal "information systems." At a minimum, therefore, and based upon our reading of the teacher concerns expressed in this study, it seems clear that one essential feature of a viable information system must be flexibility; that is, it must be capable of producing immediately student and class reports tailored to the requests of individual teachers anytime during the school year.

Although we noted that there is an epistemological conflict between the personal knowledge base of teachers and the data-base of an information system, this may be more a conflict in philosophy than in

practice. The trick in bringing together information and working knowledge is to (1) acknowledge the "scientific" credibility of both approaches and (2) establish a genuine process of critical inquiry that involves the <u>users</u> in the construction and use of their own information system.

The Quest for Simplicity in Complexity

Perhaps related to teachers' customary reliance upon their own personal representations of "data," was the recurrent demand by teachers that report forms be as simple as possible. Although issues of content were always of importance to the work group as they deliberated over what and what not to include in the several reports, of equal (or perhaps even more) importance was the group's wish for simple, short, uncluttered, non-numeric displays of data. The prime example was the bottom line for Student- and Class-At-A-Glance reports--whatever they contained, they needed to fit on single 8 1/2 x 11 pages.

Not withstanding the validity of the group's concerns, schooling and the assessment of it is extraordinarily complex; there are multiple data sources, multiple domains of potential data, multiple levels at which information is used, multiple methods for obtaining data, and multiple analytic and reporting techniques. Yet given this complexity, we still seek simple representations of it.

We do not mean to suggest that this is an unworthy goal or that a complex problem necessitates a complex solution. In fact, as a society, we will probably face a growing need to provide a more "human edge" to the products of an increasingly technological world. (See Naisbitt's, 1982, analysis of the "high tech/high touch" megatrend as we move from an industrial to an information society.) Our point here is simply to note the tension between the legitimate requirement for simplicity in

representing the information pertaining to a complex process (schooling) and setting (schools).

The Educative Function in Collaboration

Finally, we have been appropriately self-conscious regarding our role in this project. Our presence in the work group has not been exactly unobtrusive, nor has it been unduly interventionist. We have tried to walk that fine line separating the role of observer-researcher from active participant-director.

Throughout the discussion in this report, we have tried to make clear how we may have shaped the course of events in what we hope was an educative, more than a directive, role. This observation is not meant in any way to be a condescending statement by university-based educators bringing their words of wisdom down to the less informed levels of school practitioners. The fact of the matter is that the educative function in collaborative research is quite reciprocal -- we have been educated often during this project by teachers and administrators concerning the realities of schooling and the meaning and use of information in the context of practice.

What all this suggests to us is the need for someone or group to serve in an educative and collaborative role regarding issues (like those emerging here) pertaining to the development and use of information systems. We have noted many times throughout the discussion the importance of an educative function, particularly as it would relate to the potential misuse and abuse of information. Given the trends toward increased use of technology, moves toward decentralization, and needs for reconfiguration of resources, it is not hard to imagine an FTE position at the building level explicitly for R&D-type activities using comprehensive information systems.

Concluding Remarks

As we reflect upon our experiences in this project, our experiences as educational researchers and evaluators, and the reported experiences of others working along similar lines of investigation, we are led to the conclusion that comprehensive information systems for local school improvement, developed and used by staff at the building level, is a viable concept. Moreover, computerized "management information systems" are probably the wave of the future whether teachers and administrators like it or not. Regardless of how sanguine or cynical, therefore, one might be regarding the potential usefulness of school-based information systems, it would seem the better part of wisdom to carefully investigate the conditions and circumstances under which such systems can best serve the needs and interests of those who use them.

Our investigation has been far from definitive on the issue, as have been any other studies we have seen to date. Clearly, it will be from the accumulation of such investigations that any significant and generalizeable directions for schools will emerge. Immediately accessible information systems are a relatively new phenomenon for schools and school people. It is our hope that the idea is not accepted as obviously "good" and packaged and sold to districts and schools like so many other unsuccessful school interventions over the years. It is also our hope, therefore, that the concept continues to be explored collaboratively by researchers and practitioners in the context of educational practice.

REFERENCES

Burstein, L. Using multilevel methods for local school improvement: A beginning conceptual synthesis. Los Angles: Center for the Study of Evaluation, UCLA, 1983.

Burstein, L. Information use in local school improvement: A multilevel perspective. Paper presented at the annual meeting of the American Educational Research Association, 1984a.

Burstein, L. Use of existing data bases in program evaluation and school improvement. <u>Educational Evaluation and Policy Analysis</u>, 1984b, <u>6</u>, 307-318.

Burstein, L. The use of survey data in comprehensive information systems for local school improvement: Purpose, practices and problems. Los Angeles: Center for the Study of Evaluation, UCLA, 1984c.

Dorr-Bremme, D. Contextual influences in developing a school-based comprehensive information system. Los Angeles: Center for the Study of Evaluation, UCLA, 1985.

Ender, P. B. Distributive processing issues in education information systems. Los Angeles: Center for the Study of Evaluation, UCLA, 1984.

Goodlad, J. I. <u>Dynamics of educational change</u>. New York: McGraw-Hill, 1975.

Goodlad, J. I. <u>A place called school</u>. New York: McGraw-Hill, 1983.

Goodlad, J. I. <u>A Study of Schooling.</u> New York: McGraw-Hill, 1984.

Horwitz, L. & Ferleger, L. <u>Statistics for social change</u>. Boston: South End Press, 1980.

Huff, D. <u>How to lie with statistics</u>. New York: Norton, 1954.

Kennedy, M. M. How evidence alters understanding and decisions. <u>Educational Evaluation and Policy Analysis</u>, 1984, <u>6</u>, 207-226.

MacKay, R. How teachers know: A case of epistemological conflict. <u>Sociology of Education</u>, 1978, <u>51</u>, 177-187.

Naisbitt, J. <u>Megatrends</u>. New York: Warner Books, 1982.

Oakes, J. <u>Keeping Track: How schools structure inequality.</u> New Haven: Yale, 1985.

Peters, T. J. & Waterman, R. H. <u>In search of excellence</u>. New York: Harper & Row, 1982.

Polanyi, M. Personal Knowledge. Chicago: University of Chicago Press, 1958.

Sirotnik, K. A. Using vs. being used by school information systems. Paper presented at the annual meeting of the American Educational Research Association, 1984a.

Sirotnik, K. A. An outcome-free conception of schooling: Implications for school-based inquiry and information systems. Educational Evaluation and Policy Analysis, 1984b, 6, 226-239.

Sirotnik, K. A. Principles and practice of contextual appraisal for schools. (Occasional Paper No. 5.) Los Angeles: Laboratory in School and Community Education, UCLA, 1984

Sirotnik, K. A., Burstein, L. & Thomas, C. Systemic evaluation deliverable (NIE-G-83-0001). Los Angeles: Center for the Study of Evaluation, UCLA, 1983.

Sirotnik, K. A., Dorr-Bremme & Burstein, L. Social vs. clinical uses of information: Implications for school-based information systems. Los Angeles: Center for the Study of Evaluation, UCLA, 1985.

Sirotnik, K. A. & Oakes, J. Toward a comprehensive educational appraisal system: A contextual perspective. (Occasional Paper No. 2.) Los Angeles: Laboratory in School and Community Education, UCLA, 1981a.

Sirotnik, K. A. & Oakes, J. A contextual appraisal system for schools: Medicine or madness? Educational Leadership, 1981b, 39, 164-173.

Sirotnik, K. A. & Oakes, J. Critical inquiry and school renewal: A liberation of method within a critical theoretical perspective. (Occasional Paper No. 4) Los Angeles: Laboratory in School and Community Education, UCLA, 1982.

Sirotnik, K. A. & Oakes, J. Critical inquiry for school renewal: Liberating theory and practice. In K. A. Sirotnik & J. Oakes (Eds.) Critical perspectives on the organization and improvement of schooling. New York: Kluwer-Nijhoff, 1986 (in press).

Tharp, R. G. & Gallimore, R. Inquiry process in program development. Journal of Community Psychology, 1982, 10, 103-118.

Tufte, E. R. The visual display of quantitative information. Cheshire, Conn.: Graphics Press, 1983.

A P P E N D I X A

Student Survey and
Results of Survey Conducted
in May 1984 (N = 1461)

The survey you are about to complete will ask you questions about yourself and about your school. This is not a test. There are no right or wrong answers. The survey will give you an opportunity to express how you feel about what happens in your classes and around school. That is why it is important to answer the questions as truthfully and as carefully as possible.

DO NOT WRITE ON THESE PAGES

MARK YOUR ANSWERS ON THE ANSWER SHEET PROVIDED. You will notice that answers go from A to E or from F to K. This does not matter. Simply choose the one answer that best fits your opinion for each question. MARK ONLY ONE LETTER ON THE ANSWER SHEET FOR EACH QUESTION. For example, if you chose answer B for question number 5, you would mark the answer sheet like this:

```
    A B C D E
5  O ● O O O
```

Or, if you chose answer J for question number 6, you would mark the answer sheet like this:

```
    F G H J K
6  O O O ● O
```

Remember, mark only one letter on the answer sheet for each question. If there are any words or questions you don't understand, please raise your hand and ask for help.

DO NOT BEGIN UNTIL YOU RECEIVE MORE INSTRUCTIONS

This question will be answered differently than the others. You will use the blue box at the top of the answer sheet. Read the list of Career Magnet Schools below.

1. Physical Science and Technology
2. International Relations & Political Science
3. Business
4. Industry
5. Performing, Visual and Fine Arts
6. Mental, Physical & Biological Sciences
7. Liberal Arts
8. Entry and Essentials
9. Don't Know

Now, using the last column of the blue box (to the far right), mark the number on the answer sheet that matches your career magnet school.

Starting with number 1 on the survey, the rest of the questions will be answered in the white area of the answer sheet. Remember, do not mark on the survey sheets themselves. Mark one answer for each question on the answer sheet.

Questions About Yourself

1. Sex:
49 A. Male
51 B. Female

2. Besides English, what other languages are spoken in your home:
77 F. None
10 G. Spanish
 1 H. Vietnamese
 1 J. Chinese
10 K. Other

3. Living situation:
78 A. With two parents (includes stepparents)
15 B. With one parent only (mother or father only)
 3 C. Guardian(s)/foster parents
 1 D. Alone or with friends
 3 E. Other

4. About how many hours a week do you usually spend working on a job during the school year?
50 F. None. I am not employed during the school year.
14 G. About 10 hours or less
18 H. About 15 - 20 hours
13 J. About 20 - 30 hours
 6

5. How many hours do you watch television each day?
14 A. None
38 B. About 1 hour
36 C. About 2 - 3 hours
 8 D. About 4 - 5 hours
 4 E. More than 5 hours

Choose the ONE answer that best completes each of the following sentences.

6. If I could do anything I want, I would like to:

 3 F. Quit school as soon as possible.
19 G. Finish high school.
22 H. Go to trade/technical school or junior college.
50 J. Go to a 4-year college or university.
 6 K. Don't know.

7. I think my parents would like me to:

 1 A. Quit school as soon as possible.
19 B. Finish high school.
15 C. Go to trade/technical school or junior college.
62 D. Go to a 4-year college or university.
 4 E. Don't know.

DO NOT WRITE ON THIS PAGE

8. Actually, <u>I will probably</u>:

1 F. Quit school as soon as possible.
23 G. Finish high school.
30 H. Go to trade/technical school or junior college.
40 J. Go to a 4-year college or university.
6 K. Don't know.

9. How comfortable do you feel about choosing a future career goal at this point in your life?
10 A. Very Uncomfortable
13 B. Uncomfortable
34 C. Neither Uncomfortable or Comfortable
31 D. Comfortable
12 E. Very Comfortable

The following sentences describe some of the ways in which people might think about themselves.

Read each of the following sentences carefully and mark the letter on the answer sheet that tells how much it is <u>like you</u>.

Look at the following practice sentence and mark the letter on the answer sheet that tells how much you agree or disagree with the sentence.

PRACTICE	Strongly Agree	Mildly Agree	Not Sure	Mildly Disagree	Strongly Disagree
I am good at art	A.	B.	C.	D.	E.

If you Choose "Strongly Agree," you're saying that you are very good at art. If you choose "Mildly Agree," you're saying that you are OK at art. If you choose "Mildly Disagree," you're saying that you are not too good at art. If you choose "Strongly Disagree," you're saying that you are very poor at art.

	Strongly Agree	Mildly Agree	Not Sure	Mildly Disagree	Strongly Disagree
10. I'm popular with kids my own age.	21	52	20	5	1
11. Kids usually follow my ideas.	12	47	29	9	3
12. Most people are better liked than I am.	6	13	32	29	19
13. It is hard for me to make friends.	4	11	5	27	52
14. I have no real friends.	3	4	4	10	79
15. I'm not doing as well as I'd like to in school.	36	32	5	14	12
16. I am a good reader.	39	37	11	8	5
17. I'm proud of my schoolwork.	16	37	17	19	11
18. I'm good at math.	22	33	14	17	14
19. I'm doing the best work that I can.	14	28	13	28	16
20. I am able to do schoolwork at least as well as other students.	46	32	14	6	2

DO NOT WRITE ON THIS PAGE

	Strongly Agree	Mildly Agree	Not Sure	Mildly Disagree	Strongly Disagree
21. My grades are not good enough.	27	32	8	18	15
22. I'm always making mistakes in my schoolwork.	5	16	16	40	23
23. I am a good writer.	21	38	21	14	7

Questions About Your School Life

How much do the following words describe most of the teachers at this school?

	Very Much	Pretty Much	Some-what	Only A Little Bit	Not at All
24. Friendly	11	51	27	8	3
25. Helpful	12	48	28	9	3
26. Have high hopes for us	12	28	36	18	7
27. Talk to us	18	39	27	12	3
28. Let us talk to them	17	37	29	13	4
29. Care about us	9	31	36	16	7
30. Do a good job	12	49	26	8	4

How much do the following words describe how you feel about most of the students at this school?

	Very Much	Pretty Much	Some-what	Only A Little Bit	Not at All
31. Friendly	13	51	28	7	2
32. Helpful	7	32	40	17	4
33. Have high hopes	8	28	43	16	4
34. Smart	7	41	41	9	2
35. Talk to each other	48	36	12	3	1
36. Care about each other	17	41	29	10	3
37. Competitive	41	32	20	5	2

DO NOT WRITE ON THIS PAGE

38. The most popular students in this school are: (Choose only _one_ answer)

<u>48</u> F. Athletes

3 G. Smart students

9 H. Members of student government

35 J. Good-looking students

3 K. Wealthy students

Indicate whether or not you participate in the following activities at school. (Answer yes or no for each of the following).

	Yes	No
39. I participate in sports teams/drill team/flags/cheerleading.	37	<u>60</u>
40. I participate in student government.	8	<u>88</u>
41. I participate in music, band, drama, or other arts.	17	<u>79</u>
42. I participate in honor society.	19	<u>77</u>
43. I participate in school clubs/community service activities.	26	<u>71</u>

Below is a list of things which may be problems at this school. How much do you think each is a problem at this school?

	Not a Problem	Minor Problem	Major Problem
44. Student misbehavior (fighting, stealing, gangs, truancy, etc.)	17	<u>62</u>	19
45. Poor courses or not enough different subjects offered	<u>40</u>	<u>40</u>	17
46. Prejudice/Racial conflict	<u>66</u>	26	7
47. Drugs	16	<u>49</u>	34
48. Alcohol	18	<u>45</u>	<u>36</u>
49. Poor teachers cr teaching	33	<u>48</u>	17
50. School too large/classes overcrowded	<u>59</u>	31	9
51. Teachers don't discipline students.	<u>57</u>	34	8
52. Poor or not enough buildings, equipment, or materials	<u>41</u>	<u>38</u>	19
53. The principal and other people in the office who run the school	<u>32</u>	<u>34</u>	<u>32</u>
54. Poor student attitudes (poor school spirit, don't want to learn)	23	<u>49</u>	26
55. Too many rules and regulations	21	<u>35</u>	<u>43</u>
56. How the school is organized (class schedules, not enough time for lunch, passing periods, etc.)	12	28	<u>58</u>

DO NOT WRITE ON THIS PAGE

Issues and Problems:

Read each one of the following sentences carefully and choose the letter that tells how much you agree or disagree with what it says. CHOOSE ONLY ONE LETTER for each sentence. Please raise your hand if you have any questions.

	Strongly Agree	Mildly Agree	Not Sure	Mildly Disagree	Strongly Disagree
57. What I'm learning in school is useful for what I will need to know NOW.	21	40	16	16	7
58. What I'm learning in school will be useful for what I will need to know LATER in life.	34	33	15	10	8
59. I think students of different races or colors should go to school together.	67	11	7	3	10
60. Girls get a better education than boys at this school.	5	6	23	11	55
61. There are places at this school where I don't go because I'm afraid of other students.	6	8	6	10	68
62. Boys get a better education than girls at this school.	3	3	23	12	59
63. I do not have enough time to do my school work.	15	28	13	26	18
64. High school students should have job experience as part of their school program.	32	27	23	11	7
65. Many students at this school don't care about learning.	22	34	24	15	4
66. Average students don't get enough attention at this school.	17	29	29	17	6
67. Some of the things teachers want me to learn are just too hard.	12	21	17	29	20
68. Too many students are allowed to graduate from this school without learning very much.	19	22	23	17	16
69. If I had my choice, I would go to a different school.	11	8	21	18	42
70. There are things I want to learn about that this school doesn't teach.	29	24	18	15	13
71. It's not safe to walk to and from school alone.	5	8	11	15	60

DO NOT WRITE ON THIS PAGE

	Strongly Agree	Mildly Agree	Not Sure	Mildly Disagree	Strongly Disagree
72. I have trouble reading the books and other materials in my classes.	7	12	8	23	52
73. The grades or marks I get help me to learn better.	17	29	25	17	11
74. I like school.	19	41	14	12	12
75. The grades or marks I get in class have nothing to do with what I really know.	21	25	19	21	14
76. I have to learn things without knowing why.	18	27	21	19	13
77. Parents should have a say in what is taught at this school.	17	27	23	16	16
78. It is easy for me to get help from a counselor when planning my school program.	39	28	10	11	9
79. We are not given enough freedom in choosing our classes.	27	21	11	23	18
80. We are not given enough freedom in choosing our teachers.	49	19	8	12	10
81. If I have a personal problem, it would be easy for me to get help from a counselor.	19	17	26	14	23
82. If you don't want to go to college, this school doesn't think you're very important.	8	16	31	21	22
83. Students should have a say in what is taught at this school.	37	32	14	9	6
84. A person is foolish to keep going to school if he/she can get a job.	4	4	9	16	65
85. If I need help planning for a career, it would be easy for me to get help from a counselor.	35	26	18	11	8
86. I like the way this school looks.	14	42	18	16	9
87. It is easy to get books from the school library.	40	36	11	6	4
88. Things in the school library are useful to me.	32	41	15	7	4
89. Materials in the Career Guidance Center (CGC) are useful to me.	29	27	29	8	5

DO NOT WRITE ON THIS PAGE

Questions About Teaching, Learning & Classroom Work

All schools teach pretty much the same things, but they may think some things are
more important than others. . .

90. Which ONE of these does this school think is the most important thing for students? (Choose
only one)

7 F. To work well with other people
65 G. To learn the basic skills in reading, writing, arithmetic, and other subjects
13 H. To become a better person
10 J. To get a good job

91. If you had to choose only the ONE most important thing for you, which would it be? (Choose
only one)

14 A. To work well with other people
24 B. To learn the basic skills in reading, writing, arithmetic, and other subjects
32 C. To become a better person
26 D. To get a good job

In general, how do you like the following subjects?

	Like Very Much	Like Somewhat	Undecided	Dislike Somewhat	Dislike Very Much
92. English	23	45	10	14	6
93. Mathematics	25	34	10	14	16
94. Social studies (history, geography, government, etc.)	20	31	13	16	16
95. Science	23	30	16	14	14
96. Computer Education	28	27	33	6	5
97. The Arts (art, crafts, music, drama, dance, creative writing, film-making, photography)	40	26	20	8	5
98. Foreign Language	13	26	24	16	21
99. Vocational/Career Education (shop, business education, home economics, etc.)	24	30	29	8	5
100. Physical Education	43	28	11	8	8

DO NOT WRITE ON THIS PAGE

101. How many hours of homework do you have each day?
   14 A. None
   40 B. About 1 hour
   35 C. About 2 - 3 hours
    5 D. About 4 - 5 hours
    3 E. More than 5 hours

102. In general, how often do you do your homework?
   21 F. All of the time
   41 G. Most of the time
   21 H. Sometimes
   11 J. Seldom
    3 K. Never

103. How soon do teachers usually return your work?
   12 A. the next day
   29 B. 2 days later
   24 C. 3 days later
   10 D. 4 days later
   22 E. 5 days later or more

104. When you make mistakes in your work, how often do teachers tell you how to do it correctly?
   10 F. All of the time
   35 G. Most of the time
   28 H. Only sometimes
   18 J. Seldom
    6 K. Never

105. How often do your parents or other family members help you with your school work?
    7 A. All of the time
   16 B. Most of the time
   25 C. Only sometimes
   28 D. Seldom
   21 E. Never

Listed below are four ways students can work in a classroom. Choose the letter on the answer sheet that tells how much you like or would like to work in each way, even if you don't do so now.

	Like Very Much	Like Somewhat	Undecided	Dislike Somewhat	Dislike Very Much
106. Alone by myself	20	35	11	20	12
107. With the whole class	21	41	14	15	7
108. With a small group of students, who know as much as I do	39	35	12	6	5
109. With a small group of students, some who know less, some who know as much, and some who know more than I do	31	31	17	11	8

DO NOT WRITE ON THIS PAGE

-8-

Listed below are some things that might be used in a class. Choose the letter on the answer sheet that tells how much you like or would like to use each thing, even if you don't use it in a classroom.

	Like Very Much	Like Somewhat	Undecided	Dislike Somewhat	Dislike Very Much
110. Textbooks	11	38	14	22	12
111. Other books	10	39	26	15	6
112. Work sheets	14	40	15	17	10
113. Films, filmstrips, or slides	43	35	9	6	3
114. Games or simulations	39	29	16	7	4
115. Newspapers or magazines	18	37	23	12	5
116. Tape recordings or records	21	28	22	16	8
117. Television/video	54	31	6	3	1
118. Calculators	38	34	15	5	3
119. Globes, maps, and charts	20	34	20	13	9
120. Animals and plants	35	33	17	6	4
121. Lab equipment and materials	37	30	14	9	5
122. Computers	48	25	14	3	5

Listed below are some things that you might do in a class. Choose the letter on the answer sheet that tells how much you like or would like to do each thing, even if you don't do it in class.

	Like Very Much	Like Somewhat	Undecided	Dislike Somewhat	Dislike Very Much
123. Listen to the teacher	17	46	13	13	6
124. Go on field trips	60	23	8	3	2
125. Do research and write reports, stories, or poems	10	24	13	22	24
126. Listen to student reports	10	26	20	22	17
127. Listen to speakers who come to class	30	40	11	9	5
128. Have class discussions	40	32	11	7	5
129. Build or draw things	29	28	18	12	8
130. Do problems or write answers to questions	11	31	20	20	13

DO NOT WRITE ON THIS PAGE

	Like Very Much	Like Somewhat	Undecided	Dislike Somewhat	Dislike Very Much
131. Take tests or quizzes	5	25	15	27	23
132. Make films or recordings	24	23	29	11	8
133. Act things out	19	22	22	16	16
134. Read for fun or interest	38	31	13	8	5
135. Read for information	17	36	17	17	8
136. Interview people	17	24	24	17	12
137. Do projects or experiments that are already planned	20	37	17	13	7
138. Do projects or experiments that I plan	24	30	21	12	8

Please indicate how important each of the following items was in your choice
of classes here at Royal High School.

	Very Important	Important	Not Sure	Not Important	Very Unimportant
139. Taking classes from teachers I like	58	23	6	6	2
140. Being in the same classes as my friends	32	33	11	15	3
141. Completing graduation requirements	74	12	3	3	2
142. Learning skills for a future job	60	24	6	2	2
143. Taking classes that will help me be a better person	46	31	10	4	2
144. Being challenged by taking hard subjects	22	33	19	13	6
145. Taking classes that will prepare me for the future	55	26	8	2	2
146. Getting a wide variety of classes	34	32	17	7	2
147. Preparing for college	48	24	13	5	3
148. Taking classes requiring little work	10	18	29	31	15
149. Avoiding subjects I don't like	22	24	22	17	7
150. Taking classes that are popular	9	17	28	27	12
151. Taking classes my parent(s) consider important	9	28	22	21	13
152. Taking classes where I can get good grades	22	30	18	17	5

Questions About the Learning Resource Center (LRC)

153. Have you heard of the Learning Resource Center?
     79 A. yes
      8 B. no

154. If yes, how often have you gone with your classes to the Learning Resource Center?
     22 F. Never
     52 G. Only once or twice
     10 H. About once or twice a month
      3 J. About once or twice a week
      2 K. Almost every day

155. How often have you gone to the Learning Resource Center by yourself?
     50 A. Never
     26 B. Only once or twice
      8 C. About once or twice a month
      3 D. About once or twice a week
      3 E. Almost every day

If you have ever used the Learning Resource Center, have you used any of these services?
(Answer yes or no for each of the following).

		Yes	No
156.	Diagnostic testing for reading and math problems	8	72
157.	Entry testing for proper class placement	8	72
158.	Assistance with assignments from classroom teacher	16	64
159.	Work on tasks assigned by the Learning Resource Center	10	70
160.	After school seminars	8	71
161.	Study hall	17	64
162.	SAT preparation	10	70
163.	Proficiency test preparation	11	70
164.	Use the computer	18	62
165.	Study skills	19	61
166.	Language laboratory	11	69
167.	Assistance in researching or typing papers	12	68
168.	Use the typewriter	8	72
169.	Receive individual tutoring	6	73
170.	Develop library/research skills	9	71
171.	Develop reading skills	9	70
172.	Develop writing skills	10	69
173.	Develop math skills	6	73
174.	Develop listening skills	12	68
175.	Develop test taking skills	14	65

DO NOT WRITE ON THIS PAGE

176. Have you received credit for Writing I through the Learning Resource Center?
  4 F. yes
<u>76</u> G. no

177. Have you received credit for Developmental Reading through the Learning Resource Center?
  4 A. yes
<u>76</u> B. no

	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
178. The Learning Resource Center is helping students at Royal.	16	<u>32</u>	<u>32</u>	4	3
179. Most students know about the resources available in the Learning Resource Center.	9	<u>23</u>	<u>23</u>	<u>21</u>	9
180. I have been helped by the services of the Learning Resource Center.	9	<u>18</u>	<u>20</u>	18	<u>20</u>
181. I am comfortable about using the services of the Learning Resource Center.	11	18	<u>35</u>	11	11
182. My work in the Learning Resource Center has helped me in my courses.	7	12	<u>32</u>	16	18
183. My work in the Learning Resource Center has made me feel more secure about my ability to do the work assigned by my teachers.	6	11	<u>32</u>	16	19

Questions About the Career Magnet School

	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
184. I understand what the Career Magnet School program is trying to do.	20	<u>26</u>	18	11	13
185. I would like more information about the Career Magnet Schools.	<u>28</u>	<u>24</u>	20	6	9

DO NOT WRITE ON THIS PAGE

A P P E N D I X   B

Outline of Two-Day
Work Group Retreat On
Using and Reporting Information

Some Guidelines for June 18-19
High School/UCLA Workshop

Thinking About the Use of Information for
Different Purposes

● Different contexts (or levels):

    Individual, e.g., student test scores, survey responses,
        etc. used diagnostically on a per student basis.

    Class, e.g., student test scores, survey responses,
        etc. aggregated (e.g., averaged, tabled, etc.) for
        all students in a particular class and used for
        teacher-class planning.

    Department, e.g., student data aggregated for a particular
        department (e.g., math) and used for teacher/administra-
        tor planning.

    School, e.g., data aggregated for entire school (perhaps
        organized by grade, sex or other relevant attribute
        depending on purpose) and used for administrative and
        teacher planning.

● Let's take a couple of examples:

    Function of schooling questions
        (#90 and #91)

    Educational aspiration questions
        (#6 - 8)

    Instructional grouping questions
        (#106 - 109)

● Some different ways of looking at survey questions:

    ---One-by-one
    ---Contrasting one with another
    ---Crosstabulating (detailing the relationship of) one
            with another

● Small group brainstorming:

    Think up several examples using survey data (or
    envisioned analyses of these data) of how information
    could be used for:

        ---Individual level instruction
        ---Classroom level planning
        ---School level planning

● Total group brainstorming:

    In particular, in what ways can we increase the potential
    relevency of single items of information by interrelating
    them with other important information? Specific
    examples are needed.

● Reporting formats:

    How would you like to see the results reported back?
        ---Small work groups take a shot at several examples.

    Are there any general "rules" that emerge?
        ---Total group discussion

A P P E N D I X C

Description of District
Information System
File Structure and Contents

The district's information system (implemented on a Burroughs Model 6800 mainframe computer with remote terminal access at district and school levels) is made up of a number of files that can be linked together by identification pointers (using COBOL) for purposes of updating, sorting, merging and selecting information in analysis and reporting operations.

Of essential importance to this project are these five student files compiled and maintained by the district:

CTBS Test Score File: cumulative record of all student test score results for all quantitative and verbal scales.

Activity Record File: Miscellaneous information such as students AFDC, GATE, bilingual, and special education statuses; permits (smoking, auto, off-campus); extracurricular activities; and contacts with health office, principal, counselors.

Master Record File: Basic linking file consisting of student's grade, sex, address, phone, other personal and family data (e.g, mother/father occupation; emergency contacts; health data; doctor name); FES, LES, NES, MGM codes; ethnicity codes; school entry/leaving date(s); etc.

Attendance File: Complete record of daily attendance including full days and partial days absent.

Cumulative Grade File: Total number of letter grades of each type (A-F), current GPA, total credits class rank, class size, expected graduation date.

Using these (and other) files, basic information on students such as class schedules, attendance data, test data, course grades, career and educational goal information, records of academic/social referrals and conferences, and miscellaneous extracurricular activities and activity permits can be stored, accessed, and used for various reporting purposes.

Using terminals (linked to the main frame) at the building level, administrators, counselors, and other trained staff can access (and print) data displays containing the following information:

1. Cross-referenced information: more than 175 variables, student indicators, and activities can be cross-related by the computer.

2. Current test data and history of test data.

3. Special education IEP data.

4. Attendance and re-admits.

5. Addresses and grids of residence.

6. Graduation requirements.

7. Permanent record card.

8. The four-year educational plan.

9. Student master record.

10. Activity-referral form.

11. Search class by the section number.

12. Course requests.

13. Student locator--look up and update.

14. Master schedule and section number.

15. Student continuum data (CMI test information).

16. Proficiency test results.

17. Career Magnet Schools: paths, programs and course plan.

18. Budget data.

19. School-wide academic and activity calendars.

A more complete description of the district's information system as well as a general discussion pertaining to hardware-software issues in using such systems at district and building levels is contained in the 1984 Deliverable by Ender.

A P P E N D I X   D

Outline for Meetings with
Teachers for Disseminating
Studnet- and Class-At-A-Glance Reports

Dissemination and Discussion of "At-A-Glance" Forms

1. Greetings/Introductions/Pass out teacher packets.

2. Recall context of our study:

   ● The "work group": A collaboration among a dozen or more teachers, couselors and administrators, and several UCLA staff.

   ● Student survey conducted last May to add student attitudes and perceptions to the other data on students already available in the district's information system.

   ● The idea was to try out several ways of reporting and hopefully using this information.

   ● The work group came up with three possible ways to organize and use information and presented these at a staff meeting last semester: student-, class-, and school-at-a-glance forms.

   ● The work group requested that the district produce student- and class-at-a-glance forms for trial testing this semester.

3. Review these forms: what is on them and how to read and interpret them.

4. Primary objective:

   This is an exploratory study. These particular reports are just examples of what can be done. Our goal is to see if information like this -- or any other information you might like instead -- can be useful to have available for classroom teaching and learning.

5. Some initial thoughts of the work group regarding use/abuse issues:

   ● Information should not be used in ways that bias teachers' perceptions and create self-fulfilling prophecies for students.

   ● Rather, information should help guide initial decision-making or help in solving problems that come up later; examples are: forming small instructional groups and dealing with late assignments.

   ● Confidentiality -- the work group is very concerned about maintaining confidentiality of the information. The data on students are meant only for the professional use by staff and should not be available to anyone else but the staff.

   ● Discreet vs. conspicuous use of information in presence of the student -- an example dealing with late assignments: "Are you working, is it interfering with your homework, how do you feel about yourself as a student?" versus "I see here that you are working half time, have a low self-concept, no wonder you turn in homework late!"

6. To help structure your evaluations of all this, we have drawn up a form (see back of this sheet) listing some general issues to keep in mind. Please feel free to record your observations/comments on this form over the next couple of months. We will meet again in May to get your feedback. Thank you very much!

Student- and Class-
At-A-Glance Forms

ISSUES LIST

1. Uses at the beginning of the semester:

2. Uses during the semester:

3. Useful data modifications, i.e., revisions, deletions, additions
   of information:

4. Useful format changes:

5. Abuses to be concerned about:

6. Other comments/concerns/recommendations:

A P P E N D I X   E

Teacher Survey on
Information Use

High School Faculty Survey on Information Use (5/1/85)

1. Your department (or department in which you teach the most courses):

Department	No. of Responses
Business	3
Foreign Language	4
Math	9
Drivers' Education	2
Home Economics	2
Health	3
Social Studies	5
Industrial Arts	4
Science	7
English	8
Special Education	1
No Response	2

2. Recent interviews with some faculty members indicated a wide range of responses to the "At-A-Glance" forms. Which of the following best reflects what you did with the Students- and Class-At-A-Glance forms? (Please check only 1 answer for each form.)

	Students-At-A-Glance	Class-At-A-Glance
I never received the form	[4]	[4]
I received the form, but never looked at it	[1]	[1]
I glanced over the form, but then put it away . . .	[20]	[18]
I used the form or took the information into account one way or another.	[23]	[20]
None of the above	[1]	[1]

IF YOU USED EITHER FORM AT ALL, PLEASE ANSWER THE QUESTIONS ON THE BLUE PAGES.

IF YOU DID NOT USE EITHER FORM, PLEASE ANSWER THE QUESTIONS ON THE NEXT TWO PAGES.

3. Which of the following best indicates your reasons for <u>not</u> using <u>each</u> form? (Please check only those that apply.)

	Students-At-A-Glance	Class-At-A-Glance
I have year-long classes and I already knew enough about the students	[6]	[6]
I got the forms too late in <u>this</u> semester.	[2]	[2]
I didn't trust the validity of the student responses.	[5]	[1]
The information was too old to be useful	[0]	[0]
I didn't understand the form	[1]	[1]
I felt the information might bias my judgment of students	[10]	[8]
Because teaching is an art, information of this sort is not useful	[1]	[0]
The form was a good idea, but it didn't have the right information.	[0]	[0]
Other (Please explain in space below for each form)	[5]	[4]

4. Is there anything that could be changed that would make each form more useful to you?

Students-At-A-Glance: Yes [2]   No [8]   No response [39]
Class-At-A-Glance: Yes [2]   No [8]   No response [39]

IF YES TO EITHER FORM:

4a. What modifications would you recommend in terms of:

<u>Students-At-A-Glance</u>		<u>Class-At-A-Glance</u>	

<u>Deleting</u> certain information?

"Career Magnet School"	– 1	"Not feasible alternatives" (trips) – 1
"Duplications, such as Academic Self Concept & liking school"	– 1	"Repetitive categories" – 1
"Job is not too important"	– 1	
"Not feasible alternatives"	– 1	

<u>Adding</u> new information?

| "Identify special ed. students | – 1 |
| "Add 'test taking' category (e.g., self-confidence at test taking and tests as a measure of ability) | – 1 |

4a. continued

Modifying existing information?

Changing the report format?

5. Regardless of whether or not you would use these forms under any conditions, what (if any) potential abuses are you concerned about?

Students-At-A-Glance		Class-At-A-Glance	
"Preformed judgment," "prejudice," and "changed expectations"	- 11	"Preformed judgment," "prejudice," and changed expectations	- 11
"Not practical for my uses"	- 1	"Not practical for my uses"	- 1
"Student access to forms/information	- 11	"Student access to forms/information"	- 1
"Teacher misuse/overemphasis	- 1	"Validity of student responses"	- 1
"Validity of student responses"	- 1		

6. Other comments, concerns, or recommendations?

"I think the Student-At-A-Glance is useful and would use it at the beginning of the year. I would use it as a reference during the semester, but not to tailor the class. It is a useful reference tool."

"I thought the entire survey was an interesting idea. I just arrived at Royal in February and felt uninformed about what was going on."

"This is 'pie in the sky' idealism and not practical in the real world of mass education."

"Many times Student Preferences are not possible such as field trips or applicable to the level of Special Ed. students."

"Class at a glance is an interesting intellectual exercise but not really useful."

3. How would you rate your <u>frequency</u> of use of each form? (Please circle the appropriate rating.)

    Students-At-A-Glance:

	1	2	3	4	5
	Seldom				Frequently
No. of responses	[7]	[6]	[12]	[4]	[2]

    Class-At-A-Glance:

	1	2	3	4	5
	Seldom				Frequently
No. of responses	[9]	[9]	[9]	[2]	[0]

4. How would you rate the <u>quality</u> of use?

    Students-At-A-Glance:

	1	2	3	4	5
	Low				High
No. of responses	[2]	[5]	[10]	[7]	[6]

    Class-At-A-Glance:

	1	2	3	4	5
	Low				High
No. of responses	[6]	[5]	[12]	[4]	[3]

5. Which one of the following best describes your use of the forms?

    No. of responses

    [20]   I focused mostly on the Students-At-A-Glance form.

    [4]   I focused mostly on the Class-At-A-Glance form.

    [6]   I focused on both forms about equally.

6. Which statement best describes when you made the most use of each form? (Choose one response for each form.)

	Students-At-A-Glance	Class-At-A-Glance
I used it mainly at the beginning of this semester	[17]	[18]
I used it mainly later on in this semester .	[6]	[2]
I used it throughout this semester	[8]	[3]

7. Please check which of the pieces of information you have used from each report form. (Please check ALL that apply.)

Students-At-A-Glance		Class-At-A-Glance	
[9]	Special education classification	[12]	Instructional grouping preferences
[20]	Educational expectation	[14]	Liking of subject
[16]	Absenteeism	[16]	Activity preferences
[17]	CTBS test scores		
[23]	GPA		
[18]	Academic self concept		
[8]	Homework		
[8]	Job		
[9]	Extra curricular activities		
[12]	Liking of school		
[3]	Bilingual codes		

8. Please briefly indicate how used each form:

Students-At-A-Glance		Class-At-A-Glance	
Grouping pruposes & activity planning	– 5	Activity grouping & material planning	– 13
To discover basis of low performance	– 7	Gain overall understanding of class	– 2
To determine correlations and agreements with performance in class	– 5	Gain effort expectations	– 1
To establish brief background	– 7	Check if needs are being met; make appropriate adjustments	– 1
Counselling of students	– 2	Indication of likes and dislikes	– 4
Parent conferences	– 1	General information	– 2
To discover if students are working to abilities	– 4		
Check self-concept & motiv.	– 6		
Chcek GPA only	– 3		
Flag potential problems	– 2		

9. What modifications would you recommend in terms of:

Students-At-A-Glance		Class-At-A-Glance	

Deleting certain information?

Students-At-A-Glance		Class-At-A-Glance	
Career magnet school	– 1	Unlikely student preferences	– 1
Days absent	– 1		
Academic self concept	– 1		
Homework	– 1		
Activities	– 2		
Liking of school	– 1		
Bilingual codes	– 1		
Special Ed. codes	– 2		

Adding new information?

Students-At-A-Glance		Class-At-A-Glance	
Total periods missed	– 1	Parents' educational level	– 1
Parents' educational level	– 3	Writing (activity preferences)	– 2
Parental living situation	– 1	Small group work	– 1
Reason for taking class	– 1	Liking school in general	– 1
Last class taken in specific subject area and/or grade	– 2	Family status/living situation	– 1
Parents' expectations	– 2	Previous success in subject areas	– 1
More about students background	– 1		
Pass/Not Pass proficiency exams	– 1		

Modifying existing information?

Students-At-A-Glance		Class-At-A-Glance	
Academic self concept computation	– 1		
Educational experience (more realistic goals)	– 1		

9. cont.

| Students-At-A-Glance | Class-At-A-Glance |

Changing the report <u>format</u>?

Students-At-A-Glance		Class-At-A-Glance	
Add lines after every five cases	- 1	Entire form is of little value	- 1
Are CTBS necessary?	- 1	Horizontal and bar graphs	- 1
More horizontal separation	- 1	Make print larger	- 1
Put code info. on separate sheet	- 1	Leave blank between stars and X's	- 1

10. What (if any) potential <u>abuses</u> are you concerned about with respect to the use of these forms?

Students-At-A-Glance		Class-At-A-Glance	
Prejudgment and changed expectations	- 9	Prejudgment and bias	- 5
Student access and possession	- 8	Confidentiality	- 1
Confidentiality (esp. regarding special education)	- 2	Student access and possession	- 2
Misuse/use against students	- 1	Validity of instructional grouping preferences	- 1
		Avoidance of other teaching modes	- 1

11. Other comments, concerns, or recommendations?

"I would like to see the survey given to our students again before the end of the school year, and this information continued as an ongoing project."

"How much does this cost? How much would it cost to continue?"

"Second week of school or semester is a good time to receive this info."

"I hope this can be continued. I have found the information extremely helpful."

"We need to know why the drop rate continues to be so high. Perhaps questions pertaining to this problem should be incorporated."

"This is a good example of 'Data Over-Kill.' Simplify the form—could not see relevance of <u>total</u> concept. It does make good dissertation material however."

"Give counselors all of info on Student forms."

"I think this is <u>SUPER</u>! Thank you. Counselors should have same <u>forms</u> as <u>teachers</u>."

"Seems a great deal of time and effort on the part of all those developing these forms considering the kind of use this material can be put to."

"Receive at beginning of school year!"

"There were students still checking into classes at the 5th week of the semester. This made it hard to have accurate information."

"I think it's great. Hope we get them again next year."

A P P E N D I X F

Annotated Student-
and Class-At-A-Glance
Report Formats

SECTION:
TEACHER:

District files (→ GRADE)
District files (→ ED EXPECT)
District files (→ DAYS ABS)
District files (→ GPA)

STUDENT NUMBER	STUDENT NAME	GRADE	CM SCHOOL	ED EXPECT	DAYS ABS	CTBS READ	CTBS LANG	CTBS MATH	GPA	ACAD SC	HOMEWORK	JOB	ACTIVITY	LIKE SCH
49043	ADAMS, WILLIAM B	12	.	4Y	.	.	.	.	1.1	H	+	P	3	+
49052	ANDERSON, JOHN L	12	6	HS	.	.	.	.	1.9	M	+	P	0	+
41950	BARRETT, ANDREW P	12	6	HS	57	33	14	3	1.9	M	-	0	0	-
49274	BARRY, LISA S	12	3	4Y	35	52	84	83	2.6	M	+	H	2	+
42468	BAYER, LINDA C	12	3	2Y	17	34	54	3	1.8	H	+	N	2	+
49341	CARCO, JULIE M	12	3	2Y	18	49	67	0	2.7	H	+	N	0	+
43686	CAMPBELL, BRIAN R	12	4	2Y	11	80	88	80	1.6	M	0	H	0	0
49048	CARACCIOLO, MELAN	12	6	2Y	23	68	72	68	2.9	M	+	N	4	+
42771	CARRILLO, D STEVE	12	6	HS	30	.	.	3	1.5	H	.	N	0	-
49050	EVANS, MICHELLE A	11	6	?	13	83	86	68	3.0	M	0	P	1	-
43177	FEENEY, TIMOTHY P	12	6		55	36	26	35	1.4		.			.
44197	FLETCHER, DAWN MI	12	6	4Y	27	19	7	7	2.1	M	+	P	3	+
49286	GAILEGLY, SHAWN M	12	1	4Y	7	66	84	95	3.8	H	+	P	3	+
49288	GILGENBERG, MARY	12	2	4Y	8	87	94	83	3.6	H	+	N	3	+
41828	GECCE, SONIA R	12	6	2Y	37	10	12	2	2.4	M	0	P	0	+
49291	HARSH, TAMARA L	12	7	2Y	11	45	62	40	2.6	H	-	P	1	+
49069	HILLENBRAND, STEV	12	4	2Y	31	41	20	10	2.2	M	+	P	0	+
49294	HUBBARD, W FRANK	12	4	HS	35	.	.	.	2.1	M	+	N	0	-
49295	HULL, ERIC J	12	1	2Y	10	63	64	64	1.7	M	-	P	1	0
49301	KOVACH, ROBERT S	12	1	4Y	6	86	96	99	4.1	H	+	P	2	+
49303	LARSEN, TODD M	12	6	2Y	35	62	40	83	2.4	M	+	P	2	+
49306	LUTZ, DARREN K	12	4	2Y	17	1	3	.	2.5	M	-	H	0	-
49167	MAC NEAL, CHERYL	12	5	2Y	27	61	8	32	2.5	M	0	H	0	+
48395	MAESTAS, PATRICK		3		43	50	35	35	.	.	.	N	3	+
49168	MICHIELSEN, PIETE	12	4	4Y	10	83	77	92	3.2	H	+	H	3	+
49309	MILLER, PAUL A	12	6	4Y	35	80	70	60	2.8	M	+	H	0	0
49172	O DONNELL, THERES	12	3	2Y	46	23	30	28	1.6	M	+	N	0	0
43336	PRESTA, DAVID WAY	12	2	2Y	32	78	50	3	2.9	M	+	P	0	-
49129	RUSSELL, DANIEL R	12	2	2Y	30	16	28	45	1.6	M	-	N	1	-
42520	SALAS, JO ANN G	12	6	4Y	47	.	.	.	2.1	M	+	P	0	0
42793	SCHNEIDER, JUSTIN	12	6	4Y	30	99	74	43	2.5	M	+	P	0	+
43660	SHAW, KEVIN M	12	5	HS	45	.	0	37	.8	M	-	P	.	0
43179	SMITH, LOYAL DAVI	12	8	.	118	8	0	37	1.1	M	+	P	0	+
49323	SOBVINO, GINA MAR	12	5	2Y	27	47	49	31	2.1	M	+	P	0	+
49109	SPELLMAN, DUANE A	12	4	HS	10	61	74	26	1.9	M	-	H	0	+
41481	SWABB, JONATHAN D	12	5	4Y	15	42	17	23	1.3	H	+	N	3	-
44147	SYNOLIS, ALLISON	12	6	2Y	56	54	73	40	2.9	H	+	P	2	+
49262	TIGNAC, LOUIS LEO	12	1	2Y	31	92	52	95	3.1	H	+	P	0	-
49329	VIEZI, GINA	12	8	2Y	27	63	50	60	3.0	M	+	H	1	-
43580	WOOD, JOSEPH A	12	4	2Y	25	12	12	23	2.2	M	-	P	1	-

. = MISSING

CM SCHOOL: CAREER MAGNET SCHOOL. *Reported on cover sheet of student survey*
   1=PHYSICAL SCIENCE AND TECHNOLOGY
   2=INTERNATIONAL RELATIONS & POLITICAL SCIENCE
   3=BUSINESS 4=INDUSTRY 5=PERFORMING VISUAL AND FINE ARTS
   6=MENTAL, PHYSICAL & BIOLOGICAL SCIENCES 7=LIBERAL ARTS
   8=ENTRY AND ESSENTIALS 9=DONT KNOW

ED EXPECT: EDUCATIONAL EXPECTATION. *survey question #8*
  QU=QUIT HIGH SCHOOL HS=FINISH HIGH SCHOOL
  2Y=GO TO TRADE/TECHNIC SCHOOL OR JUNIOR COLLEGE
  4Y=GO TO 4-YEAR UNIVERSITY ?=DONT KNOW

DAYS ABS: NUMBER OF FULL DAYS ABSENT. *District files*

CTBS TEST RESULTS ARE REPORTED IN PERCENTILE RANK. *District files*

ACAD SC: ACADEMIC SELF CONCEPT. H=HIGH M=MEDIUM L=LOW *Survey questions #15-23 (Based on total score)*

HOMEWORK: +=ALL/MOST OF THE TIME 0=SOMETIME -=SELDOM/NEVER *Survey question #102*

JOB: F=FULLTIME(30+) H=HALFTIME(20-30) P=PARTTIME(10-20) N=NONE *Survey question #4*

ACTIVITY: NUMBER OF EXTRACURRICULAR ACTIVITIES(1-5). *Survey questions #39-43*

LIKE SCH: LIKE OF SCHOOL. +=LIKE 0=NOT SURE -=DISLIKE *Survey question #74*

<u>CLASS AT-A-GLANCE</u>

FALL 84

SECTION NO: XXXX
NO. ENROLLED STUDENTS: 35
NO. STUDENTS TAKING SURVEY: 35

← District files

```
I---------------------------------------------------I
I                                                   I
I         INSTRUCTIONAL GROUPING PREFERENCES        I      ← Survey
I                                                   I        questions #106-109
I  ALONE             XXXXXXXXXXXXXXXXXXX--*********** I
I  WHOLE CLASS       XXXXXXXXXXXXXXXX-------********** I
I  HOM SMALL CLASS   XXXXXXXXXXXXXXXXXXXXXX---******** I
I  HET SMALL CLASS   XXXXXXXXXXXXXXXXXXXXX--********** I
I                                                   I
I     XXX LIKE    --- UNDECIDED    *** DISLIKE      I
I                                                   I
I---------------------------------------------------I
```

```
 I--------------------------------------------I
 I                                            I
 I          LIKING OF MATHEMATICS             I     ← Survey questions
 I                                            I       #92-100
 I  LIKE VERY MUCH                            I
 I  LIKE SOME       ************************** I
 I  UNDECIDED       ********************       I
 I  DISLIKE SOME    *                         I
 I  DISLIKE VERY MUCH  *                      I
 I                                            I
 I--------------------------------------------I
```

```
I---------------------------------------------------I
I                                                   I     ← Survey questions
I         STUDENT ACTIVITY PREFERENCE               I       #123-138
I                                                   I
I  LISTEN TEACHER   XXXXXXXXXXXXXXXXXX-------******** I
I  GO FIELD TRIPS   XXXXXXXXXXXXXXXXXXXXXXXX---***** I
I  DO RESEARCH ETC  XXXXXXXXX--***************** I
I  LISTEN STUDENT   XXXXXXXXXXX-------************ I
I  LISTEN SPEAKER   XXXXXXXXXXXXXXXXXXXXX--******* I
I  CLASS DISCUSSION XXXXXXXXXXXXXXXXXXXXXX----***** I
I  BUILD/DRAW THING XXXXXXXXXXXXX---------********* I
I  DO PROBLEM/ANSWER XXXXXXXXXXX---------********** I
I  TAKE TEST/QUIZ   XXXXXXXXX------***************** I
I  MAKE FILM/RECORD XXXXXXXXXXX-------*********** I
I  ACT THINGS OUT   XXXXXXXXXX------************** I
I  READ FOR FUN     XXXXXXXXXXXXXXXX---------******* I
I  READ FOR INFO    XXXXXXXXXXXXXXX-------********** I
I  INTERVIEW PEOPLE XXXXXXXXXXX-------*********** I
I  DO PROJECT PLNED XXXXXXXXXXXXXX-------********** I
I  DO PROJECT I PLN XXXXXXXXXXXX---------********* I
I                                                   I
I     XXX LIKE    --- UNDECIDED    *** DISLIKE      I
I                                                   I
I---------------------------------------------------I
```

(handwritten: District files) *(handwritten: District files)* *(handwritten: District files)*

UDENT NUMBER	STUDENT NAME	GRADE	CM SCHOOL	ED EXPECT	DAYS ABS	CTES READ	CTES LANG	CTBS MATH	GPA	ACAD SC	HOMEWORK	JOB	ACTIVITY	LIKE SCH
49043	ADAMS, WILLIAM B	12	.	4Y	.	.	.	.	1.1	H	+	P	3	+
49052	ANDERSON, JOHN L	.	.	HS	.	.	.	.	.	M	+	P	0	+
41950	EARRETT, ANDREW P	12	6	HS	57	33	14	3	1.9	M	−	P	0	−
49274	EARRY, LISA S	12	3	4Y	35	52	84	83	2.6	M	0	H	2	+
42468	EAYER, LINDA C	12	3	2Y	17	34	54	3	1.8	H	+	N	2	+
49341	CANCU, JULIE M	12	3	2Y	18	49	67	0	2.7	H	+	N	0	+
43686	CAMPBELL, BRIAN R	12	4	2Y	11	80	88	80	1.6	M	0	H	0	0
49048	CARACCIOLO, ERIAN	12	6	2Y	23	68	72	68	2.9	M	+	N	4	+
42771	CARRILLO, D STEVE	12	6	HS	30	.	.	3	1.5	H	0	N	0	−
49050	EVANS, MICHELLE A	11	6	?	13	83	86	68	3.0	M	0	P	1	−
43177	FEENEY, TIMOTHY P	12	6	.	55	36	26	35	1.4	.	.	.	3	.
44197	FLETCHER, DAWN MI	12	6	4Y	27	19	7	7	2.1	M	+	P	3	+
49286	GALLEGLY, SHAWN M	12	1	4Y	7	66	84	95	3.8	H	+	P	3	+
49288	GILGENBERG, MARY	12	2	4Y	8	87	94	83	3.6	H	+	N	3	+
41828	GECCE, SONIA R	12	6	2Y	37	10	12	2	2.4	M	0	F	0	+
49291	HARSH, TAMARA L	12	7	2Y	11	45	62	40	2.6	H	−	P	1	+
49069	HILLENBRAND, STEV	12	4	2Y	31	41	20	10	2.2	M	+	P	0	+
49294	HUEBARD, W FRANK	12	4	HS	35	.	.	.	2.1	M	+	N	0	−
49295	HULL, ERIC J	12	1	2Y	10	63	64	64	1.7	M	−	P	1	0
49301	KOVACH, ROBERT S	12	1	4Y	6	86	96	99	4.1	H	+	P	2	+
49303	LARSEN, TODD M	12	6	2Y	35	62	40	83	2.4	M	+	P	2	+
49306	LUTZ, DARREN K	12	4	2Y	17	1	3	.	2.5	M	−	H	0	−
49167	MAC NEAL, CHERYL	12	5	2Y	27	61	8	32	2.5	M	0	H	0	+
48395	MAESTAS, PATRICK	.	3	.	43	50	35	35	.	.	.	.	.	.
49168	MICHIELSEN, PIETE	12	4	4Y	10	83	77	92	3.2	H	+	N	3	+
49309	MILLER, PAUL A	12	6	4Y	35	80	70	60	2.8	M	+	H	2	+
49172	O CONNELL, THERES	12	3	2Y	46	23	30	28	1.6	M	+	N	0	0
43336	PRESTA, DAVID WAY	12	2	2Y	32	78	50	3	2.9	M	+	F	0	−
49129	RUSSELL, DANIEL R	12	2	2Y	30	16	28	45	1.6	M	−	N	1	−
42520	SALAS, JO ANN G	12	6	4Y	47	.	.	.	2.1	M	+	F	0	0
42793	SCHNEIDER, JUSTIN	12	6	4Y	30	99	74	43	2.5	M	+	P	0	+
43660	SHAW, KEVIN M	12	5	HS	45	.	.	.	.8	M	−	P	.	0
43179	SMITH, LOYAL DAVI	12	8	.	118	8	0	37	1.1	.	.	P	.	.
49323	SOEVINO, GINA MAE	12	5	2Y	27	47	49	31	2.1	M	+	P	0	+
49109	SPILLMAN, DUANE A	12	4	HS	10	61	74	26	1.9	M	−	H	0	+
41481	SWABB, JONATHAN D	12	5	4Y	15	42	17	23	1.3	H	+	N	3	−
44147	SYNOLIS, ALLISON	12	6	2Y	56	54	73	40	2.9	H	+	P	2	+
49262	TIGNAC, LOUIS LEO	12	1	2Y	31	92	52	95	3.1	H	+	P	0	−
49329	VIEZI, GINA	12	8	2Y	27	63	50	60	3.0	M	+	H	1	−
43580	WCOD, JOSEPH A	12	4	2Y	25	12	12	23	2.2	M	−	P	1	−

. = MISSING

M SCHOOL: CAREER MAGNET SCHOOL.   *(handwritten: Reported on cover sheet of student survey)*
   1=PHYSICAL SCIENCE AND TECHNOLOGY
   2=INTERNATIONAL RELATIONS & POLITICAL SCIENCE
   3=BUSINESS   4=INDUSTRY   5=PERFORMING VISUAL AND FINE ARTS
   6=MENTAL, PHYSICAL & BIOLOGICAL SCIENCES   7=LIBERAL ARTS
   8=ENTRY AND ESSENTIALS   9=DONT KNOW

D EXPECT: EDUCATIONAL EXPECTATION.   *(handwritten: survey question #8)*
 QU=QUIT HIGH SCHOOL   HS=FINISH HIGH SCHOOL
 2Y=GO TO TRADE/TECHNIC SCHOOL OR JUNIOR COLLEGE
 4Y=GO TO 4-YEAR UNIVERSITY   ?=DONT KNOW

AYS ABS: NUMBER OF FULL DAYS ABSENT.   *(handwritten: District files)*

TBS TEST RESULTS ARE REPORTED IN PERCENTILE RANK.   *(handwritten: District files)*

CAD SC: ACADEMIC SELF CONCEPT.   H=HIGH   M=MEDIUM   L=LOW   *(handwritten: Survey questions #15-2? (Based on total score))*

CMEWORK: +=ALL/MOST OF THE TIME   0=SOMETIME   −=SELDOM/NEVER   *(handwritten: Survey question #12?)*

OB: F=FULLTIME(30+)   H=HALFTIME(20-30)   P=PARTTIME(10-20)   N=NONE   *(handwritten: Survey question #4)*

CTIVITY: NUMBER OF EXTRACURRICULAR ACTIVITIES(1-5).   *(handwritten: survey questions # 39-43)*

IKE SCH: LIKE OF SCHOOL.   +=LIKE   0=NOT SURE   −=DISLIKE   *(handwritten: survey question # 74)*

EXHIBIT 1

District's Student Report

```
LNARF 082140  SCH:33 GRADE:10 SP:   EC:E2 ED: 9/12/83 DOB: 6/25/68 SEX:G TCH:
NAME:     MADYLENE MARY       PO BOX:     EMRG1:BONNIE     .     PH:  _-526-349
ADDR: 1555- AGNEW ST           #   -  .   EMRG2:BONNIE    .  .   PH:. --522-326
CITY:    VALLEY    ZIP:93065 DOCTR:DRUMMOND      PH:   -526-5240 RG:  / /
PHONE:  -527-9188   BPL:CINCINNATI, O      LSCH:WM GREEN, LAWNDALE
FR:EUGENE O          OC:MILLWRIGHT      EMP:GENERAL MOTORS, VN
MR:MADYLENE          OC:                EMP:
FP:  -997-5111 EXT:  40 MP:   -   -    EXT:     RES STATUS:BOTH PARENTS
LOCKER:        SIBLINGS: 1 PLACE: 2 ETHNICITY:4  GRID: 20   PSAT Q    V
G.P.A.:2.25  RANK: 355 OF  747  CTBS % MATH:   READ:  LANG:   SAT Q    V
A.F.D.C.:NO  HANDICAP:                      G.A.T.E.:NO  BILING:NO  SP ED:NO
ID CARD:NO   SCH RULES:NO  SMOKE PERM:NO  AUTO PERM:NO  OFF CAMP:NO  YR BOOK:YE
WORK EXP:NO  FREE PER:            LETTER SENT:                  CMS  1
VISITS: C.G.C.:   EUREKA:    LIBRARY:    HEALTH OFF:    PRINCIPAL:    PSYC:
A.S.B.:YES ATHLETICS:NO  OTHER ACTIVITY:NO  GROUPS:59
         R E F E R R A L  I N F O R M A T I O N  PAGE <01>
REF NO   PERSON MAKING REFERRAL    DATE    PERIOD      PERSON REFERRED TO
 0001  GUTHRIE                  09/14/82    05      BLACKBURN
    TYPE:  19 TRUANCY TARDIES              DISP:  27 PARENT CONFERNCE PHONE
 0002  HIRD                     09/15/82    01      FISCHER
    TYPE:  15 SMOKING                      DISP:  25 SCHOOL SUSPENSION
                                /  /
    TYPE:                                  DISP:
```

STUDENT NUMBER	STUDENT NAME	GRADE	CM SCHOOL	ED EXPECT	DAYS ABS	CTBS READ	CTBS LANG	CTBS MATH	GPA	ACAD SC	HOMEWORK	JOB	ACTIVITY	LIKE SCH
0149043	ADAMS, WILLIAM B	12	.	4Y	.	.	.	.	1.1	H	+	P	3	+
0249052	ANDERSON, JOHN L	12	.	HS	.	.	.	.	.	H	+	P	0	+
0341950	ATWOOD, DANIEL K	12	6	HS	57	33	14	3	1.9	M	.	H	0	-
0449274	BAGLEY, LOIS J	12	3	4Y	35	52	84	83	2.6	M	0	H	2	+
0542468	BAKER, MARY M	12	3	2Y	17	34	54	3	1.8	H	+	N	2	+
0649341	BUTLER, JOYCE	12	3	2Y	18	49	67	0	2.7	H	+	N	0	+
0743686	CALDWELL, THOMAS C	12	4	2Y	11	80	88	80	1.6	M	0	H	0	0
0849048	CARTER, MATHEW	12	6	2Y	23	68	72	68	2.9	H	+	N	4	+
0942771	CLARK, LARRY P	12	6	HS	30	.	.	3	1.5	H	.	N	0	-
1049050	COOK, CHERYL	11	6	?	13	83	86	68	3.0	M	0	P	1	-
1143177	COOPER, JANE L	12	6	.	55	36	26	35	1.4	.	.	.	3	.
1244197	CURTIS, EDWARD N	12	6	4Y	27	19	7	7	2.1	H	+	P	3	+
1349286	DAVIS, LYNN	12	1	4Y	7	66	84	95	3.8	H	+	P	3	+
1449288	DUNCAN, JOHN	12	2	4Y	8	87	94	83	3.6	H	+	N	3	+
1541828	EATON, TIMOTHY	12	6	2Y	37	10	12	2	2.4	M	0	P	0	+
1649291	EMERSON, DOROTHY A	12	7	2Y	11	45	62	40	2.6	H	-	P	1	+
1749069	EVANS, ROBIN S	12	4	2Y	31	41	20	10	2.2	M	+	P	0	+
1849294	FARMER, DAVID R	12	4	HS	35	.	.	.	2.1	M	+	N	0	-
1949295	FELDMAN, ROBERT	12	1	2Y	10	63	64	64	1.7	M	-	P	1	0
2049301	FINK, AARON S	12	1	4Y	6	66	96	99	4.1	H	+	P	2	+
2149303	HARRIS, CURLEY M	12	6	2Y	35	62	40	83	2.4	M	+	P	2	+
2249306	HAYES, CYNTHIA	12	4	2Y	17	1	3	3	2.5	M	-	H	0	-
2349167	KAPLAN, HAROLD D	12	5	2Y	27	61	8	32	2.5	M	0	H	0	+
2448395	LEWIS, ANTHONY E	.	3	.	43	50	35	35	.	.	.	.	.	.
2549168	MARCUS, STANLEY	12	4	4Y	10	83	77	92	3.2	H	+	N	3	+
2649309	MC ARTHUR, EUGENE A	12	6	4Y	35	80	70	60	2.8	M	+	H	2	+
2749172	MILLER, ELIZABETH	12	3	2Y	46	23	30	28	1.6	M	+	N	0	0
2843336	MOORE, OSCAR J	12	2	2Y	32	78	50	3	2.9	M	+	N	0	+
2949129	PACE, DONALD W	12	2	2Y	30	16	28	45	1.6	M	-	N	1	-
3042520	RANDLE, ANN	12	6	4Y	47	.	.	.	2.1	H	+	P	0	0
3142793	ROBERTSON, SHEILA	12	6	4Y	30	99	74	43	2.5	M	+	P	0	+
3243660	ROSS, RICHARD M	12	5	HS	45	.	.	.	.8	M	-	P	.	0
3343179	SANDERS, JOAN N	12	8	.	118	8	0	37	1.1	.	.	.	.	.
3449323	SCOTT, MARION J	12	5	2Y	27	47	49	31	2.1	M	+	P	0	+
3549109	SILVERMAN, ARTHUR	12	4	HS	10	61	74	26	1.9	M	-	H	0	+
3641481	SNYDER, EVELYN G	12	5	4Y	15	42	17	23	1.3	H	+	N	3	-
3744147	STERN, BRUCE D	12	6	2Y	56	54	73	40	2.9	H	+	P	2	+
3849262	STUART, DONNA	12	1	2Y	31	92	52	95	3.1	H	+	P	0	-
3949329	THOMPSON, WENDY L	12	8	2Y	27	63	50	60	3.0	M	+	H	1	-
4043580	WALKER, VICKI S	12	4	2Y	25	12	12	23	2.2	H	-	P	1	-

. = MISSING

CM SCHOOL: CAREER MAGNET SCHOOL.
   1=PHYSICAL SCIENCE AND TECHNOLOGY
   2=INTERNATIONAL RELATIONS & POLITICAL SCIENCE
   3=BUSINESS 4=INDUSTRY 5=PERFORMING VISUAL AND FINE ARTS
   6=MENTAL, PHYSICAL & BIOLOGICAL SCIENCES 7=LIBERAL ARTS
   8=ENTRY AND ESSENTIALS 9=DONT KNOW

ED EXPECT: EDUCATIONAL EXPECTATION.
   QU=QUIT HIGH SCHOOL HS=FINISH HIGH SCHOOL
   2Y=GO TO TRADE/TECHNIC SCHOOL OR JUNIOR COLLEGE
   4Y=GO TO 4-YEAR UNIVERSITY ?=DONT KNOW

DAYS ABS: NUMBER OF FULL DAYS ABSENT.

CTBS TEST RESULTS ARE REPORTED IN PERCENTILE RANK.

ACAD SC: ACADEMIC SELF CONCEPT. H=HIGH M=MEDIUM L=LOW

HOMEWORK: +=ALL/MOST OF THE TIME 0=SOMETIME -=SELDOM/NEVER

JOB: F=FULLTIME(30+) H=HALFTIME(20-30) P=PARTTIME(10-20) N=NONE

ACTIVITY: NUMBER OF EXTRACURRICULAR ACTIVITIES(1-5).

LIKE SCH: LIKE OF SCHOOL. +=LIKE 0=NOT SURE -=DISLIKE