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ABSTRACT

This volume, the first of two reports on development of teacher incentive structures, focuses on implementation of a career ladder design and teacher evaluation experiment in four Utah school districts. The report has five sections. Section 1 describes study background and implementation of an evaluation-reward system that featured data collection by teachers. A panel of teachers, administrators, and parents made promotion decisions, which included a stipend and job enlargement opportunities. Career ladder committees conducted evaluations. Section 2 describes the districts' plans and design features compared with preexisting approaches. The promotion system was intended to be a substantial career development move for teachers. Section 3 discusses evaluation, promotion, and planning outcomes. Section 4 presents conclusions and recommendations, including findings that: (1) teachers can control their evaluation; (2) good evaluation requires resources; (3) inservice is crucial; (4) teachers' competition for quality performance creates difficulties; (5) teachers select promotion pay over job enlargement; and (6) merit pay is a threat to career ladders' development. Section 5 consists of nine appendices; these include detailed descriptions of the career ladder plans and evaluation system, supporting information on legal issues and use of microcomputers, and a bibliography. (CJH)

FINAL REPORT: SECRETARY'S DISCRETIONARY PROGRAM IMPLEMENTATION GRANT TO DEVELOP TEACHER INCENTIVE STRUCTURES

U.S. Department of Education Grant # G008410033

CAREER LADDERS AND TEACHER INCENTIVES:

THE UTAH EXPERIMENT

PART I: THE IMPLEMENTATION

A collaborative implementation effort among the University of Utah Department of Educational Studies and the Park City, Granite, Nebo, and Rich School Districts

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June 1, 1986

SECTION ONE: INTRODUCTION

Activities funded by this grant were in one of two themes: (1) implementations of a career ladder design and teacher evaluation in four Utah districts and (2) case studies of teacher perceptions of career ladder implentation. This report (Final Report: Part I) describes the implementation in the demonstration sites. The case studies are contained in the companion volume Final Report: Part II.

Background

In 1984 the Utah Legislature provided $15 million for local districts on a discretionary basis to design career ladders. The following year the annual allocation was raised to $30.7 million; for 1986-87 the amount is approximately $38 million. The basic ideas of career ladder development were to:

a. create a multi-level compensation program for teachers,
b. lengthen the contract year
c. provide a "performance bonus" for outstanding teaching, and
d. create an opportunity for some teachers to work year round. (A Call to Action, 1983).

Unlike other states (such as Tennessee), the Utah approach was to encourage local development, rather than to implement a state-wide plan. The career ladders program, like those in other states, has faced controversy, but the political situation suggests a continuance of the program (Jones, 1986; Nelson, 1986).

The Utah Teacher Evaluation Project (Peterson, Kauchak & Driscoll, 1983) has functioned at the University of Utah, Department of Educational Studies, as a resource for districts, legislature and other state agencies. The Project has tested career ladder developments with the Park City School District.

This grant enabled collaboration to be extended to additional districts in Utah.

Implementation of an Evaluation-Reward System

The purpose of the implementation theme of this study was to put in place an innovative teacher evaluation and reward system in four different Utah districts.

The innovative evaluation and reward system developed for this study is a dossier-promotion approach. The first distinguishing feature is that teachers are expected to collect a set of data from at least four perspectives (or "lines of evidence") which they assemble in a dossier. The dossier is much smaller than a portfolio of teacher work; it is limited to approximately 15 pages. The second feature is that the promotion decision is made by a panel of reviewers which is teacher dominated, but includes administrators and parents. The final important feature of the system is a promotion which includes a title, stipend of approximately $1500, and opportunities for job enlargement assignments. The system is fully described in Appendices A, B and C of this report.

The Implementation

The teacher evaluation and reward system was installed in four diverse Utah school districts. Implementation was done by providing advice, models, materials, and inservice to the districts through career ladder committees which governed design and practice. All systems were reviewed and modified by State Office of Education. The same basic model of evaluation and reward was presented to each of the four implementation districts,

but changed according to the decisions of local career ladder committees.

In three districts the promotion system was the main "vertical" feature of the ladder program. Job enlargement components constituted the remaining part of the programs. Job enlargement ranged from participation in evaluation activities by six teachers in one district, to fully half the system in additional days or duties for teachers in another district. In the fourth district the system was a small part of the total career ladder system (10% by budget) and functioned as a merit pay component. The districts are described in Section Two of this report.

Evaluation of Implementations

The main evaluation was derived from the district career ladder committees for the subsequent year. Each district conducted an evaluation program on career ladder development. Committee decisions following this implementation ranged from keeping the system intact in two districts, modification in a third, and abandoning it all together in the fourth district. The findings and continuation results are presented in Section Three of this report.

This Report

This report is divided into five sections. Section One is an introduction. Section Two describes the four districts, and variations in their plans. Section Three describes the evaluation, promotion and planning outcomes. Section Four presents conclusions and recommendations. A detailed description

of the evaluation and career ladder plan is included as Appendices A, B and C. Other supporting information, including legal issues, use of microcomputers, and Bibliography, appears in appendices in the fifth section.

SECTION TWO: THE CAREER LADDER SYSTEM

The career ladder design was implemented in four Utah school districts: Granite, Nebo, Park City (known as "Snow District" in the case studies), and Rich School Districts. The districts ranged in size from the largest in the state (Granite-with 3,271 teachers) to Rich (29 teachers). The Park City system has run for two years; the other districts for 1985-86 school year. Figure 1 presents a comparative description of the four districts.

FIGURE 1: FOUR IMPLEMENTATION DISTRICTS

DISTRICT	# OF TEACHERS	DESCRIPTION	# TEACHERS PROMOTED	PROMOTION STIPEND
Granite	3,271	urban, suburban	509	$1000.*
Park City	66	ski resort	47	$1500.
Nebo	635	suburban	333	$1200.
Rich	29	rural	19	$2100.

*merit pay instead of promotion

Utah career ladders have vertical and horizontal features, as well as merit pay (Utah State Office of Education, 1986). Vertical features are distinctions among teachers made according to performance or additional duties. The distinctions usually are accompanied by stipends ranging from several hundred to several thousand dollars. Vertical distinctions typically are made for one year only, the promotion design which was installed in this project is unique in the State. Horizontal features are provisions for all teachers in the district, such as additional preparation days. Merit pay was included under a requirement for a "performance bonus" which by State Office of Education regulation was to be at least 10% of the total career ladder

program in each district. For the year of this implementation, a promotion system was considered by the State regulators to fulfill performance bonus requirements.

The promotion system which was a key part of this implementation is intended to be a substantial career development move for teachers. Promotions permit acknowledgement of good practice, while not being tied to narrow indicators of quality or periods of performance. A promotion essentially is a reward for demonstrated quality teaching.

Numbers of teachers to be promoted in a career ladder system is an issue of contention. In the system implemented in this study, the first stage of promotion ("Associate Teacher") was anticipated to be appropriate for as many as 70% of the teachers in a district. Some critics take the viewpoint that promotion means outstanding, and should be reserved for a small elite group. Others take the view that any teacher who works well deserves the reward. The design included both points of view by making the first promotion generally available to all who could demonstrate through their dossier that they had performed with quality. The second stage of promotion to "Teacher Leader" is still under development and was not included in this implementation.

Teacher evaluation systems for the new career ladders within the State vary, but most emphasize principal reports using a checklist. Two dominant approaches include a clinical supervision model--the Improving Teacher Competence (ITC), and a "research based" checklist of classroom behaviors--(AIM). The evaluation design for this implementation is a considerable departure from

current evaluation practice. For example, principal input is deemphasized. Also, a wide range of measures is included; for example, teacher tests (National Teachers Examination) was used in the implementation districts, but nowhere else in Utah. Teacher control of evaluation lines of evidence and data is another provision that set the implementation districts apart from other career ladder approaches in the State. The dossier system was unique in the State. Finally, the use of panels of teachers, administrators, and parents was distinctive.

Comparative Features of Basic Plan

The basic career ladder for this implementation project was designed in light of preexisting approaches (Peterson, et al., 1985). The plan differed from the 1970s Temple City experience in having a much more complicated teacher evaluation process, but less definition to teacher differentiation (Freiberg, 1984-5; English, 1984-5). The dossier in this project differs from the portfolio included in the Charlotte-Mecklenburg approach; teacher control of evaluation data and inclusion of parents on decision making panel are further distinctive features (Schlechty, Joslin, Leak & Hanes, 1984-5). Less reliance on classroom observation for teacher evaluation is characteristic of this model relative to the Tennessee career ladder plan (French, 1984-5) and the earlier approaches.

The District Plans

While the same career ladder model was presented to each district for implementation, actual operations were determined by local career ladder committees and regulated by the State Office

of Education. Consequently, the implementations varied in the four districts. Two were very close to the original design. Figures 2 through 5 summarize the career ladder designs in each district. Additional descriptions are presented in Appendix c.

The career ladder system for Park City was based on a "mainline" opportunity for all teachers to receive reward and recognition for classroom performance and for additional opportunities for some teachers, at any given time, to perform leadership duties for which they receive additional pay. The promotion stipend was set at $1500. per year for the five year duration of the promotion.

Rich School District had goals in their design of (a) reducing the role of the principal in decision making and (b) minimizing extra work for extra pay. In addition, the District is fairly remote (northernmost in Utah) and has a problem with high turnover with beginning teachers. A promotion system that rewarded longevity was desired. Job enlargement in the District included two committees working on the career ladder itself (career ladder committee and promotion panel), and several optional teacher initiated jobs. The promotion stipend was approximately $2200 per year for five years.

FIGURE 2: PARK CITY DISTRICT CAREER LADDER PLAN

I. Number of Teachers: 66

II. Allocation for career ladders: $101,280

III. Vertical dimension: Three ladder levels (A) Certified Teacher, (B) Associate Teacher, and (C) Senior Teacher. Teachers are placed on these levels based on applications containing multiple lines of evidence that are judged by a promotion panel. Senior Teacher level will not be operational until the 1986-87 school year.

IV. Job enlargement: several district prescribed or teacher generated options. District options include service on career ladder promotion and oversight committees and service as a curriculum committee chairperson or test developer. Teacher projects include a wide variety of options.

V. Extended year: One mandatory day for all teachers to be used for parent conferences.

VI. Advancement on career ladder: Teacher applies, submits an extensive dossier including four of a possible eight lines of evidence. Administrator report and pupil achievement data are required. Promotion panel reviews for acceptance or rejection; five of eight votes required.

VI. Promotion or Bonus: Promotion for five year period. Annual stipend $1500.

FIGURE 3: NEBO DISTRICT CAREER LADDER PLAN

I. Number of Teachers: 635

II. Allocation for career ladders: $1,129,282

III. Vertical dimension: Four ladder levels. Level 3, Associate Educator, prepares a dossier that is reviewed by the promotion review board. Re-evaluation takes place during the third year at this level. Level 4, Senior Educator, has maintained the Associate Educator through two successive evaluations.

IV. Job enlargement: Optional, by application on all levels, as facilitators, promotion review board, and building level positions. Number of positions determined at the building level. Each building allocated $200 per FTE. Building committee works with principal for decisions.

V. Extended year: Seven days for inservice training in essential elements of instruction, teacher preparation.

VI. Advancement on career ladder: Promotion based on committee analysis of dossier.

VI. Promotion or Bonus: Promotion for three years. Share of allocation to Performance Bonus, approximately $1100.

FIGURE 4: RICH DISTRICT CAREER LADDER PLAN

I. **Number of Teachers: 29**

II. **Allocation for career ladders: $51,728**

III. **Vertical dimension: Three ladder levels (A) Certified Teacher, (B) Associate Teacher, and (C) Senior Teacher. Teachers are placed on these levels based on applications containing multiple lines of evidence that are judged by a promotion panel. Senior Teacher will not be operational until 1986-87.**

IV. Job enlargement: Six additional service assignments: curriculum development, student teacher advisor, promotion review board, dossier oversight, mentor teacher, and special assignment.

V. Extended year: Two additional days, one for dossier preparation and one for beginning of school year preparation.

VI. Advancement on career ladder: review of extensive dossier containing at least 4 lines of evidence. Promotion board consists of teachers, administrators, and community representatives.

VI. Promotion or Bonus: Share of Performance Bonus allocation (approximately $2000.).

FIGURE 5: GRANITE DISTRICT CAREER LADDER PLAN

I. Number of Teachers: 3,271

II. Allocation for career ladders: $5,098,692

III. Vertical dimension: teachers choose vertical dimension for one year, selected upon classroom evaluation, receive extra responsibilities and extended contract year.

IV. Job enlargement: ten to twenty additional contract days for instruction related service to school or district. Service rendered during summer, before or after school.

V. Extended year: Six and one half days total. One day prior to school. One day at conclusion of school. Two days to students' instructional calendar. One half day for local school inservice training.

VI. Advancement on career ladder: incentive personnel selection committee, at each school, consisting of 3 teachers, one PTA, and school principal.

VI. Promotion or Bonus: Merit pay only--quotas, one year. Open to those with at least two full years with satisfactory evaluation. Applicants submit a dossier with at least four lines of evidence. Decisions made for regional panels.

Nebo School District also wanted to minimize principal decision making and additional tasks. Their horizontal component was the largest in the State, making seven additional working days available for every teacher. Nebo also had a greater number of job enlargement opportunities. While the evaluation and promotion plans were similiar to Rich, the horizontal provision meant that the promotion stipend was approximately half that of the Rich District. The duration of the Nebo promotion initially was set at three years to permit closer monitoring.

Granite School District career ladder system was the most divergent of the four. The dossier system was used not for promotion, but for merit pay. Ten percent of the budget was allocated by State guideline for "performance bonus." The career ladder panel decided that the money would be limited to a given number of awards to make each $1000 for the one year. The resulting quotas meant that the decision panels made competitive judgements. The system included no long term vertical benefits.

Incremental vs. Structural Changes for Teachers

Career ladder plans may be designed to be lesser or greater changes for classroom teachers. So-called incremental changes have the advantage of slowly introducing improvements and allowing for development of new procedures. They consist of adding small improvements which promise to add up to something substantial. They have the disadvantage of not capturing the imagination and needs of teachers sufficiently to permit survival of the program (English, 1984-5). Major structural changes for teachers may answer the challenges of the current educational reform movement

in this country, but they require a great deal of prior development. For example, the paraprofessionals need to be trained for the teacher leaders to lead, and resources must be available for the new professional teachers to work face to face with each other. Structural changes often are risky "go for broke" enterprises which have the danger of total dismissal, even of promising elements.

The career ladder, dossier-promotion elements in these districts represent incremental provisions which are designed to later be included in major structural changes for teachers. The innovative features are intended to be forerunners of more substantial change for classroom teacher working conditions.

SECTION THREE: IMPLEMENTATION OUTCOMES

District Results

Park City

The District employed 67 teachers during the first implementation period. Of these, 55 were eligible for promotion because of years of experience. Forty-four eligible teachers gathered data; five non-eligible teachers gathered data. Of the 44 eligible teachers, 40 (60% of District teachers) were promoted, 3 were denied by Panel review (7% of those reviewed), and 1 teacher gathered, but did not submit, materials for review.

In the second year the District had 66 teachers. Six teachers submitted dossiers for promotion. Five were approved and one was denied. Two of those approved had been denied in the first round of review. At the end of the second year 75% of the District teachers had been promoted to the Associate Teacher level.

Near the end of the second implementation year the career ladder committee for the District decided to keep the dossier-promotion system. Alternate schemes had been investigated throughout the year which might (a) reduce teacher anxiety and (b) provide greater confidence for teachers in the evidence gathered. In particular, the committee looked for classroom observation approaches.

High priorities for future development of the dossier-promotion system in the District are (a) creating teacher leadership positions, (b) expanding the pilot systematic observation system, and (c) devising a workable merit pay

component to meet State mandates.

Nebo

The Nebo District employed 635 teachers during the implementation year. Of this total, 341 (54%) submitted dossiers for review. The regional promotion panels approved 333 candidates while rejecting 8 (2.3%).

The District career ladder committee decided late in the year to retain the system for the future. Highest priorities for development included (a) refining the student achievement line of evidence, (b) raising the total number of Associate Teachers, (c) better defining the job enlargement component, and (d) devising teacher leader positions.

Rich

Rich School District, with 29 teachers, was the smallest district in the implementation. During the first year 19 (65%) teachers submitted dossiers and were promoted (none denied). No teachers elected to fill job enlargement opportunities; money set aside for this feature reverted to the promotion stipend.

The career ladder committee decided to maintain the dossier promotion system. Work was begun on (a) adding the Teacher Leader position for subsequent years, (b) revision of several assessment forms and procedures, and (c) adding a merit component to be granted by the principals to 4-8 District teachers each year.

Granite

Of the 3,271 teachers in the District, only 550 (17%) submitted dossiers for review. The quota for awards was 509.

The merit pay program in this District was competitive,

quickly introduced, and not integrated with the vertical or horizontal features of the career ladder. Following this experience a task force for the District career ladder committee recommended changes for the next year which included dropping the dossier review system in favor of a classroom observation scheme (AIM). A participant observer's analysis of the program in one junior high school is included as Appendix E.

Additional Analysis Related to this Implementati ..

Project deadlines did not permit a full analysis of the evaluation procedures or teacher satisfactions of this implementation. However, this analysis is underway and will be reported in the research literature. Additional analysis will include:

data on individual lines
lines of evidence interaction
reliability of dossier judgments
evaluation strategies for "special assignment" and minorities teachers
teacher satisfaction

SECTION FOUR: CONCLUSIONS AND RECOMMENDATIONS

1. Teachers can control their own evaluation. They are able to make judgments about what is appropriate for their situation and what is not. However, it takes time and experience for teachers in a district to develop professional expectations about what is quality practice, and what constitutes sufficient evidence.
2. Teacher evaluation is largely a sociological and political problem; technical data gathering aspects are an important part. The reaction of teachers to an evaluation system determines its initial success to a greater extent than does the technical adequacy.
3. Good evaluation is complex and requires resources. It calls for time, money, and creativity.
4. Introduction time of sophisticated evaluation is considerable. A good evaluation system equires experience, lore, examples, and tradition. Teachers begin very unfamiliar with evaluation ideas and standards.
5. Inservice is in teacher evaluation is crucial. Technical knowledge of teachers is limited. The bulk of teacher opinions and decisions are based on idiosyncratic experience rather than knowledge of good practice, alternatives for data gathering, processes of decision making, and standards for quality.
6. A high percentage of teachers in a district are able to present quality data. While style-preferences may vary, on the order of 70% of the teachers in the participating

districts are working well with different approaches.

7. Competition among teachers in terms of making a case for quality performance creates difficulties. While teachers in current practice do not cooperate a great deal, they are very protective in terms of perceived threats to their collegiality. Present interactions are not extensive, but they are dear to teachers.
8. Replacement of group mass protection relationships with an individual case judgment system, as was done in this study, faces an initial resistance but has a potential for a stronger struture for teachers in the long run.
9. Teacher confidence in lines of evidence takes time. Teachers are able to see the holes in any line, and draw quick conclusions about long term problems.
10. Numerical guidelines are helpful; may mislead. Teachers, especially ones new to the process, are uneasy over pure judgmental systems. The initial comfort of "what is required" is difficult to replace.
11. Where job enlargement (additional pay for additional work) and promotion stipends compete, teachers will select promotion pay.
12. Teacher leadership remains an ill defined concept. There are few opportunities for teachers to lead in any systematic sense.
13. Merit pay is a serious threat to development of career ladder systems.
14. Involving teachers over time in system development and

decision making is important.

15. A number of new legal questions are raised by these changes in teacher evaluation (see APPENDIX A).

APPENDICES

A. SUMMARY ARTICLE ON PARK CITY SYSTEM

B. DISTRICT HANDBOOK FOR EVALUATION & PROMOTION SYSTEM

C. SUMMARY OF CAREER LADDER PLANS FOR FOUR DISTRICTS

D. NEWSPAPER CLIPPINGS

E. PUBLIC OPINION POLL: PARK CITY SCHOOL DISTRICT

F. PARTICIPANT-OBSERVER'S CRITIQUE OF GRANITE DISTRICT APPLICATION

G. LEGAL ISSUES RAISED BY CAREER LADDERS

H. USE OF MICROCOMPUTER IN TEACHER EVALUATION

I. BIBLIOGRAPHY

KEN PETERSON AND ANTHONY MITCHELL

Teacher-Controlled Evaluation in a Career Ladder Program

Park City's "permissive" evaluation system encourages teachers to choose evidence to document their value to the district and make them eligible for promotion.

In 1984, the Utah legislature gave each school district in the state the go-ahead for setting up a teacher incentive career ladder program under state office of education guidelines. Such a program would provide monetary rewards to teachers for additional duties or for excellence in classroom performance. The challenge facing the Park City School District and their University of Utah collaborators was to develop a teacher evaluation system that was believable by teachers, community members, legislators, parents, and researchers in what sociologists have described as a hostile workplace climate for such activity. As in other parts of the country, district teachers were responsive to the idea of an evaluation system for promoting and rewarding teachers, but they were skeptical that it could be done.

A major assumption of the Park City system was that observation by principals should not be overused in teacher evaluation because of its substantial limitations. The district decided to continue to use the valuable evidence currently provided by principals but not to stretch their role with fantasies about increasing their observation time and heightening their discriminatory powers.

The system planners also realized that quality teaching can be recognized in a variety of forms, or lines, and is not confined to a narrow collection of strategies or competencies. The lines of evidence, an emergent approach to evaluation, document and acknowledge teacher performance from several different points of view.

Based on the assumption that no single line of evidence can disclose the value of *all* teachers, the approach incorporates evidence from a number of different perspectives, such as results of a parent survey, or pupils'

scores on standardized tests (see Figure 1).

To orient teachers to the complex procedures and requirements of the evaluation system, the district provided inservice courses and technical advisors. Pretests given to the teachers indicated that they lacked the required knowledge and attitudes to participate successfully. Posttests following the teachers' orientation to the system revealed encouraging growth.

How the System Works

The lines of teacher evaluation evidence are crucial to the Park City system. A dossier, usually containing a minimum of four lines of evidence and ranging in length from 15 to 30 pages, is kept for each teacher. This dossier represents the teacher's best evidence of his or her value to the school district.

The teachers begin by selecting several lines of evidence for accumulation. They develop each line over time, giving careful attention to the research literature, to their own rationale for selecting a particular line of evidence, and to the ease with which the evaluation panel will be able to use the evidence to paint a coherent picture of their performance. Which evidence the teachers pursue depends upon its appropriateness and availability, but teachers understand that they will later need to give it to a panel governing promotion.

"A dossier, usually containing a minimum of four lines of evidence and ranging in length from 15 to 30 pages, is kept for each teacher."

Figure 1. Lines of Teacher Evaluation Evidence

- Pupil report
- Parent survey
- Peer review of materials
- Teacher tests
- Systematic observation
- Administrator report
- Student gain data
- Professionalism
- Special service
- Other

Park City assists teachers in learning to use district forms to gather evidence and to organize it in their dossiers. For example, a teacher might call for a pupil report near the end of the year. A time is scheduled for an impartial data-gatherer to visit the teacher's classroom for five minutes, during which the teacher leaves the room. The data-gatherer uses the appropriate form for taking evidence from the teacher's students. The results are tallied on two copies of the form, one of which is given to the teacher to inspect. If the teacher approves of the results, the other copy is placed in the teacher's promotion dossier. If not, the teacher may retain both copies of the form. This procedure is used for all lines of evidence, even administrator visits.

The dossiers are evaluated by a panel on promotion, which consists of four teachers, two administrators, and two parents. The panel is not aware of evidence teachers have chosen *not* to include. Their overriding concern is, "Does the dossier present compelling evidence that justifies a promotion?" Five out of the eight panel members must vote favorably for the teacher to be promoted, and the panel may identify and reward truly exemplary practice as evidenced in the dossiers. Promotions are not competitive, and there are no quotas.

Promotions are valid for five years, during which time principals conduct routine evaluations. At the end of this period, teachers must be reviewed again to stay in place or to advance on the career ladder. Promotions do not require additional duties but make teachers eligible for a small number of optional job enlargement opportunities, such as writing curriculum or handling some piece of state Department of Education compliance business. Teachers given the opportunity to execute these responsibilities are remunerated on the basis of a contract.

The Permissive Nature of the System

The Park City evaluation system is "permissive" in that teachers control which evidence to present to make their best case. Observers external to the district have criticized this permissive approach, but teachers, familiar with evaluation procedures that permit choice, have adopted it. Some observers have also objected to teachers selecting evidence. For example, teachers who think parents have little to contribute to teacher evaluation do not need to use that line. Similarly, those who regard teacher tests as irrelevant need not report scores. Such a nonthreatening beginning has given teachers confidence with the result that they are currently using more lines of evidence than are being used in any other career ladder plan. Nearly half of the teachers use teacher tests, student and parent surveys are common, and pupil achievement data are included in more than half of the dossiers.

The system's permissive nature has also increased the number of acceptable lines of evidence. Lines required of all teachers must have nearly unanimous support. Few lines enjoy such acceptance. Discriminating use of lines of evidence avoids logical traps; for example, creating difficult-to-defend prescriptions for all teachers on the basis of specific instances of teaching excellence.

Finally, the Park City system encourages professional behavior. It is the teachers' responsibility to demonstrate their value, and they have become involved in each other's assessments and in discussions about what constitutes value.

Photographs by Nan Schalot

"Now that parents, legislators, and critics know the good things that are going on in the schools, both they and principals can support teachers more effectively."

Program Difficulties and Benefits

The Park City design is not without problems. It is a relatively cumbersome system, especially at first, with many unfamiliar details. For example:

- All lines of evidence were not fully developed.
- Introduction of data gathering and accompanying instruction can be expensive.
- Use of multiple lines of evidence requires teacher sophistication.
- Necessary teacher support requires that benefits be seen, not just described.
- Initial use threatens teacher security because of independence from familiar support of principal and colleagues.
- Teachers not electing to participate report feeling isolated.
- The design is not especially effective for diagnosing problems in teaching and prescribing improvements.

On the plus side, Park City teachers have realized nonmonetary rewards in addition to promotions. Many have reported the satisfaction of what Lortie (1975) called "authoritative reassurance" about their work, which comes from documenting their impact. The results of a number of the lines have gained publicity in the community. For example, NTE scores of the teachers electing to take the exams were quite high, and parents have appreciated being asked for their perspectives.

The Park City administrators realized that the decision to use evaluation to document good practice would have significant consequences. By making professional expectations explicit, the program has been able to document the value, impact, and merit of good teaching. At the same time, it has relieved pressure on principals by easing their responsibility as sole judges of teacher value. Now that parents, legislators, and critics know the good things that are going on in the schools, both they and principals can support teachers more effectively.

The Park City approach has shown how teacher evaluation and promotion can affect the sociology of the teaching workplace. Providing teachers with a shared professional hurdle has also heightened their sense of shared professional identity.□

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APPENDIX B: TEACHER EVALUATION AND PROMOTION HANDBOOOK

Introduction

The teacher evaluation system is a Dossier-Promotion type. This system has a number of features:

--Performance is documented by individual teachers in a dossier which they prepare and present for review.

--The value, merit, and impact of the documented performance are determined by a Panel which represents different District points of view, but is dominated by peer teachers.

--Individual dossiers contain a variety of lines of evidence; they are not consistent among teachers.

--A satisfactory review leads to a promotion which has a title, some permanence (re-review required in five years), and no specified additional duties. Promoted teachers do have additional expectations for professional responsibility.

While the major immediate purpose of dossier preparation is a review for promotion, dossier assembly and maintenance as a form of teacher evaluation has additional benefits for teachers and the educational system. An up-to-date dossier can be a source of security for teachers because it is an alternative to yearly, but superficial, administrative review. The multiple lines of evidence contained in a dossier present a broader, and more customized, picture of teacher performance than single line of evidence systems such as observation checklists or clinical supervision approaches. Evidence systematically collected for individual dossiers can be compiled to give a useful view of current teacher performance in the District. Many of the lines, such as pupil report, are more reliable when they present data from many years of practice. Finally, the exemplary practices of individual teachers can be documented. For these and other reasons, teachers who are promoted will be encouraged to update their dossiers each year.

The Dossier-Promotion system is based on a number of ideas of teacher evaluation. First, good teaching is a complicated phenomenon, and comes in a variety of forms. There is relatively little value in a priori descriptions of good teaching, but great value in recognizing quality performance when it occurs in a context of need. Next, there are no single foolproof methods for determining teacher merit, value, and impact. In addition, all lines of evidence and contributing observers have biases which require the balancing of multiple audience views. Finally, the central task in a Dossier evaluation system is to assemble the best pertinent objective data possible for each teacher under consideration.

The system emphasizes teacher choice and control. Teachers are

expected to select the most pertinent lines of evidence. They inspect evaluation data before submitting them to the Promotion Panel. The promotion decision is made on the teacher's best case of evidence. This "permissive" approach enables a wider variety of evidence lines to be used in the larger District system, but does not diminish the challenge to the teacher to demonstrate excellent performance. Fairness in the Dossier-Promotion system does not mean that all teachers are evaluated with the same evidence; it does mean that all teachers have an equal opportunity to document their merit.

The Dossier-Promotion system recognizes the subjective nature of teacher evaluation; it places this phase in a panel which considers each individual case. It should be recognized that other evaluation systems (such as clinical supervision, competency-based, administrator checklist, test-based) place their subjectivity in the activity of selecting initial criteria before actual performances are examined.

The minimum standards suggested for most of the lines of evidence need to be carefully used in order not to change the main evaluation task: documentation of quality performance. Minimal standards can be misleading in the question of determination of quality. The focus of the evaluation system can be either (A) show evidence that exceeds minimum standards, or (B) demonstrate quality performance. The dossier system task is clearly the latter.

The system takes its legal and professional precedents from the procedures commonly used in higher education. It differs significantly from these procedures in that it emphasizes the certification nature of the promotion by including non-professionals on the decision making Panel.

The following sections will give an overview of the dossier preparation process, give specific guidelines for each of the lines of evidence, describe the decision-making process, and present evaluation forms used in the District.

THE PROMOTION DOSSIER

1. Assembly of the dossier is the responsibility of the candidate teacher.

2. Dossiers must be submitted two weeks prior to review.

3. Teachers are eligible for promotion who have completed at least three years of successful teaching, including one year in the District.

4. Lines of evidence prepared by third parties (i.e., administrator report, peer review, student report, parent survey, teacher tests, systematic observation) will require the candidate to secure a copy for the dossier.

5. Dossiers should not be longer than 15 pages. They should be

bound and have a durable cover. They are considered to be a professional representation of a teacher's work; attention should be paid to the appearance of the dossier.

6. Five copies of the dossier are required for review. Four copies will be returned to the candidate. One copy will be kept in the District Office by the Promotion Panel in case of appeals and to provide information for future Promotion expectations. While absolute secrecy is not promised, the retained dossiers are considered confidential, and are for the use of the Promotion Panel and their staff only.

7. The candidate is encouraged to assemble one support document file, of any size, which contains materials that back up dossier contents and provide additional information. The Promotion Panel may or may not use the support document file, but it is in the interest of the candidate to provide as much material as possible.

SUGGESTIONS FOR ASSEMBLING A DOSSIER

A dossier represents a teacher's best case for quality performance. Preparation of a dossier begins with a teacher thinking about their tasks and results that are of value. The activity of assembling a dossier is a process of documenting these activities and outcomes. Because teaching is an open-ended and situation-specific job, the cases made by different teachers (and their dossiers) will look quite different. The various lines of evidence are less expectations and requirements, and more some fairly common ways in which teacher tasks and results can be documented.

It is best to begin dossier assembly as early as possible, and to add to it as time goes on. Some clear thinking about what is important in ones work is more helpful in the initial dossier design than trying to guess what the Promotion Panel will look for or finding out what others have done. Successful applicants have reported a range of six to 100 (!) hours to be required for dossier assembly. The most common seems to be a total of two working days.

Early arrangements need to be made to take the National Teachers' Exam, participate in systematic observation, or prepare for peer review of materials. Discussions with consultants, Oversight members, and promoted teachers all are helpful in assembling the dossier. Many applicants have said that their ideas for a good part of the dossier contents occured to them in the middle of dossier preparation. Finally, leave plenty of time for final dossier preparation (typing, signatures, early reviews).

The support document may contain transcripts, letters, lists and other materials which give credibility to evidence presented in the dossier. The support document does not have to be bound.

PROMOTION PANEL

The Promotion Panel has eight voting members for each review.

The members are four teachers, two administrators, and two community representatives. Two teacher members will be from the candidate's school, and one teacher from each of the two other District schools. Five affirmative votes for promotion are required.

Teacher members of the Promotion Panel pool will be elected by secret ballot from their respective school faculties. Each school will have two Promotion Panel pool members: a Full member and an Alternate member. Full members vote on all dossiers presented to the Panel. Alternate members vote only on candidates from their own school. Alternates may serve in an absence of the Full member. Teacher members are elected for two-year terms: the first year as an Alternate and the second year as a Full member. A new Alternate will be elected each year at each school.

Administrator members of the Panel are the Superintendent and principal of the candidate's school. Other principals may take their place in an absence.

Public members are appointed by the School Board. Nominations of public members may come from school-community councils, PTA, principals, or teachers. Public members serve a three year term.

Each meeting of the Promotion Panel will have an acting Chair which rotates among the Full teacher members and Superintendent. The Chair is responsible for managing the meeting, distribution of new dossiers, collecting and counting ballots, and preparing notification letters.

The Promotion Panel vote is by secret ballot. It has three possible findings:

1. Promotion
2. Promotion denied
3. Clarification needed

If promotion is denied, the applicant remains eligible for review in subsequent years.

"Clarification needed" means that the Panel will vote again on promotion, but requires additional information or clarification on specified lines of evidence which the candidate will be asked to furnish. The candidate may not add new evidence. If the total number of affirmative votes combined with "clarification needed" votes equals five or more, the applicant will be asked to provide additional information about the specific items under question.

The Promotion Panel will provide a written notification of the decision, including comments on strengths and weaknesses, for the candidate on the next school day.

Part II: Use of Lines of Evidence

The lines of evidence of teacher performance presented in this

section were designed to be used in a dossier teacher evaluation system. No one line is adequate to give a satisfactory picture of teacher performance, thus the use of multiple lines is recommended. Each line has limitations in focus and procedure which means that care must be exercised in selection and use. None of the lines is appropriate or fair for every teacher in a district; requiring their use can lead to lack of teacher support and technical difficulties.

Teachers should consider which lines fairly and appropriately document their performance. The lines can be used for formative or summative evaluation. It is recommended that teachers inspect data collected by these lines, and make the decision to use them in summative evaluation.

STUDENT REPORTS

I. Why consider student reports?

Students are accurate reporters of some, but certainly not all, parts of a teacher's work. Pupils are familiar with teacher performance, quality teaching is in their interest, they know their own case well, and they are quite an inexpensive source of information about teachers. Studies have indicated that students can make effective and consistent judgments. In particular, they are able to distinguish between teacher effectiveness and merely liking a teacher.

Pupil surveys need to be carefully designed and used to justify them as a line of evidence about teacher quality. Item selection is crucial. Topics of "opportunity to learn" and "global" items work well. On the other hand, many topics commonly found in pupil rating forms should not be used, including: popularity items, style, teacher knowledge, and personal characteristics. A representative sample of student opinion is essential.

II. Pupil Report Procedures

Students should be surveyed near the end of classes (for year long courses in April or May). Surveys in the last two weeks of a term should be avoided. Teacher should schedule an outside survey administrator (UTEP staff, clerk provided by District). Standard District forms will be used; items are presented in Section Four.

It is important that teachers prepare their classes for survey. Students need to know that the data gathering is important, that it makes a difference to the teacher and the system. A frank discussion may be helpful. Avoid pressuring the students, but let them know that their cooperation is needed and expected.

III. Standards

Pupil reports should be gathered on all elementary students and at least half of middle- or secondary-school candidate's classes. Multi-year data are preferable.

The minimal standard chosen to qualify as an acceptable line of evidence is an average rating on the global item ("this is a good teacher") at least one standard deviation above last years' mean for the appropriate grade level:

Grade Level	1984-85 mean (SD)
K-3	1.15 (.15) (3 item scale)
4-6	1.32 (.22)
middle-school	1.70 (.37)
high-school	1.60 (.30)

Scores higher than one standard deviation below mean will considered strong.

PARENT SURVEYS

I. Why use parent input in teacher evaluation?

Parents can provide a part of the picture for determining teacher quality in many, but not all, cases. One teacher responsibility is to give information about classes and students. Parents can give useful and accurate feedback about student reactions to classes in areas such as expectations and challenge. Past parent evaluation has consisted of much hearsay and isolated cases of praise or criticism which are difficult to use to determine teacher quality. Parent surveys provide a much more systematic and representative view of teacher performance.

As important as parent views are, they have limitations in teacher evaluation. Mere popularity with parents is positive but not compelling in determining teacher excellence. Items must be selected for parent surveys with great care. While most parents are expert in raising their own children, they are in most cases not expert at the tasks of a classroom teacher.

II. Using parent surveys

The District parent survey form (in Appendix) must be used. Teacher should ask school Oversight person for administration of the forms near the end of the term or course (or near Panel review time, if necessary). Forms will be distributed and returned by mail. Forms will be scored by outside party. Results are to be inspected by teacher before they are submitted to administrators or Promotion Panel.

Teachers should inform students that surveys will be sent home, the procedure is an important one, and students can help to remind and encourage parent participation.

III. Standards

The main criterion will be the mean score on the global item. A minimum average of one standard deviation above the mean has been selected. An average one standard deviation below the mean will be considered Strong.

Grade level	Mean	(SD)
elementary	1.41	(.28)
middle & secondary	1.59	(.50)

All parents of elementary school teachers should have an opportunity to complete forms. Half of the classes of middle- and secondary-teachers will be selected to receive forms.

Representativeness requires at least 12 parent responses from each of three independent classes. The current career ladder installation pressures mean that elementary teachers will have to be given some logistical consideration. Patterns of parent response over the past three years is the strongest evidence.

STUDENT ACHIEVEMENT

I. Why use student achievement?

One of the most important indicators of teacher quality is that students learn. It is often said that we "don't care much about how a teacher works, what classes they have taken, or what organizations they belong to--if the kids are learning!" However, it should be remembered that while good teaching does make a difference for students, teachers do not have direct control over student achievement. For example, prior achievement (pre-test scores) account for 60% of the variance (not amount) in student gains. Student motivation, parent support, and school facilities all play a role in student achievement. Thus, pupil achievement is an important line of evidence but a very difficult one to attribute to teacher performance.

In spite of the problems with linking student gain to teacher activity, some useful estimates can be made for purposes of teacher promotion. Two routes have been developed: a "purist" technical approach, and a "practical" strategy which has shown promise for current needs.

II. Student Achievement Data

PLAN A: Teacher provides pre- and post-test data on:

Part 1: a. Four major class goals for the year
b. Two major goals from a single teaching unit (3-6 week duration).

--Goals must be validated as "major" by principal, department Chair, or three peer teachers.

--Measures may be teacher made, departmental, or standardized. They may be paper-pencil, inventories, sample products, performances, objective-item or subjective-item, norm- or criterion-referenced.

--Measures must be validated as satisfactory by principal, department Chair, or three peer teachers.

Part 2: A description of what gains mean: what students now are able to do that they could not do at the beginning. What significance these learnings will have in the future.

PLAN B: Teachers present standardized test data, pre- & post-measures, comparisons with national norms, gains adjusted for prior achievement.

III. Standards

Students should show significant progress on the major goals. There should be evidence of increased competence and greater knowledge. The educational significance of the gains should be apparent. The Panel will place the results in one of four ratings:

Strong--multi-grade level gains, outstanding progress, impressive comparisons with other groups

Satisfactory--documented gains, clear educational value, important topics and goals

Weak--gains apparent, but little comparative data; minor goals, short term

No value--gains unclear; trivial or minor goals; no merit comparisons

PROFESSIONALISM

I. Why consider professionalism?

Documentation of professional activity is a good indicator that a teacher is prepared to teach well, works to keep quality performance, and is up-to-date in their practice. In addition teachers are expected to support good practice of colleagues participate in the larger school program, and contribute toward educational concerns outside of individual classrooms.

We say that a teacher is a good professional when they do things like the following:

they are self-critical about their practice, they evaluate their teaching systematically and objectively, their practice is improving, they give and get advice from colleagues, concern about quality is evident, they think about the implications of their work, initiative is taken to get the

best quality curriculum and instruction, colleagues are supported in good work, the larger school program is supported, and they take responsibility for educational concerns outside of their classroom.

A teacher does not have to do all of the above to be considered a good professional, but certainly to exhibit substantial and significant activity in this direction.

Of course, professional activity does not tell the whole story of teacher quality. The main teacher activity is in the classroom. Mere totals of outside experience and contributions do not necessarily contribute to teaching effectiveness. However, evidence of professionalism does speak to a teacher's readiness to perform and their contribution as a member of the profession and school district. Finally, professionalism is a relatively easy line of evidence to prepare and to interpret.

II. Content of the professionalism line

In order to document their professionalism, teachers should develop a resume which can include items like the following:

1. list of classes taken with dates and description (transcripts can be included in a support document);

2. list of professional organizations and offices held in these organizations;

3. list of community activities involved in and description of your role;

4. descriptions of particular ways that you have assisted colleagues in the performance of their duties, include names and dates;

5. descriptions of special services you have performed for the school or district;

6. list of visits, consultations (include dates and names);

7. list of any special training activities participated in;

8. advanced degree programs.

Include activities from the beginning of the teaching career. The resume to be included in the dossier should not exceed two pages. Put support documents (transcripts, letters, etc.) in a support folder which the Panel may review.

III. Standards for quality

Teachers may show professional activity in inservice, degree programs, District innovations, professional organizations, District

service which extends beyond the local classroom and program, support of colleagues, and community activities. Activities in the past five years are most important, but earlier accomplishments may be taken into account to make the case of long term professional quality.

Panel will place findings in one of four categories:

--Strong: consistent activity in more than four areas; updating of skills in continuous inservice; postgraduate degrees; leadership

--Satisfactory: consistent activity in several areas, with significant involvement in others

--Weak: uncoordinated inservice; unclear patterns of involvement; few areas of activity

--No value: no areas of significant, consistent involvement.

TEACHER TESTS

I. Why consider teacher test results?

Teacher tests, like the National Teachers Examination, are designed to sample teachers' knowledge. An important part of teacher quality is that they "know their stuff," i.e., have a good grasp of the subject matter which they teach and be adept in basic skills such as reading, writing, and listening. In addition, there is concern that teachers know the growing body of information about professional practice. Three teacher test areas are (1) subject matter, (2) communication skills, and (3) professional knowledge. Public and legislative expectations clearly are for teachers to perform well on teacher tests, a number of states mandate teacher test results as a part of certification or employment.

A number of testing programs provide objective tests written for public school subject areas. Middle- and high-school tests focus on specialty areas, such as German, Physical Sciences, Industrial Arts Education, and Social Studies. Elementary school teacher tests reflect the general knowledge areas taught in the early and upper grades such as mathematics, language arts, social studies, and science.

The teacher test line of evidence has, of course, a number of limitations for evaluation purposes. First, command of subject matter is no guarantee of classroom performance. There is no doubt that quality teaching requires a great deal more than knowledge of subject matter. Second, some teachers do not test accurately because their examination taking skills are inadequate or have declined. In spite of these limitations for evaluation, the use of teacher tests in a district evaluation systems permits substantial recognition and reward for teachers who do well on these measures.

II. Using teacher tests

The following tests are recognized for this line of evidence:

NTE Test of Communication Skills
NTE Test of General Knowledge
NTE Test of Professional Knowledge
NTE Specialty Area Tests (approximately 25 available)
Graduate Record Examination Advanced Test in Education
California Basic Educational Skills Test

A special administration of the NTE will be arranged for the District.

III. Standards

Minimal scores are expected to be at the 60%ile. Higher scores than this minimum contribute to the candidate's case of excellence. Test scores should be within the past five years.

PEER REVIEW OF MATERIALS

I. Why consider a peer review?

Peer judgment about teacher performance is an essential feature of a district evaluation system. Teachers are in the best position to know expectations, resources, standards, possibilities, needs, and examples of good performance. While their perspective can be much more realistic than that of other audiences, teachers can include a vision of what practice ought to be. Teachers are more apt to spot exemplary activities or strategies in their colleagues work, because they are aware of the challenges and varieties in the field.

Peer review is a difficult evaluation practice. When based upon class visits, it is no more reliable than the reports of others. When based on a reliable number of visits, it becomes prohibitively expensive in terms of good teacher time and money. It is subject to bias of friendship, politics, and style preference. Limiting peer review to materials has made a defensible line of evidence.

II. Using peer review

A teacher should collect materials for a peer review over as long a time period (up to two years) as possible. This is so that the preparation will not be too demanding at any given time. Materials may include:

sample student products
quizzes, exams
lesson plans
assignments
grades, records
laboratory exercises
pre-, post-test results
curriculum plans
photos of room
feedback to students
calendars
media lists

Materials for review should be submitted in not more than two boxes.

Peer review panels will be selected from teachers outside of the District. At least two members of each three-teacher panel will be at the grade level or subject area of the teacher under review. The panel will complete two forms: (1) Report to Promotion Panel, and (2) Feedback to Teacher. The Report form will have three categories of findings:

-Evidence of a Well Functioning Teacher,
-Well Functioning Teacher, with Exemplary Practice(s)
-Insufficient Evidence of Well Functioning

The Report form will be signed by all three teachers. Teacher under review will see Report, and decide if it is to be shown to any other person. Feedback to Teacher will provide specific comments and reactions for the teacher's use only. More details for this line of evidence are given in Section Four.

III. Standards for Review

The minimum finding required for using this line of evidence for promotion will be "Evidence for Well Functioning." Findings of exemplary practices may be taken into account as strengthening the case for teacher excellence.

OTHER EVIDENCE

I. Why include other evidence, not dealt with in other lines?

Quality teaching comes in a variety of forms; some performances that are recognized as excellent are quite situation-specific or unique to individual teachers. Teachers are expected to contribute individual features or provisions as a part of their professional work. The specified lines of evidence may not include every indicator of teacher quality. Thus, teachers are encouraged to consider designing and completing an additional line of evidence which deals with a unique contribution, student outcome, or District service that extends beyond usual professional expectations.

II. Use of "Other" as a line of evidence

The candidate should describe the nature and impact of their evidence. They should carefully document needs, events, outcomes, and other features of their work.

III. Standards for Judgment

While teachers are encouraged to use this line, it is one of the most difficult to describe and limit ahead of time. The Panel will consider the idea and the evidence. It will then make a subjective decision that what was presented in the line represents strong and compelling reason for promotion. If they consider that it does, it

will count as one of the four required lines. If they consider that the evidence is without merit, this line will not count toward promotion. If they find that the evidence is positive but weak, promotion will require other four satisfactory lines, or three other lines--one of which is above minimal.

Part III: Guidelines for Promotion Panel Decisions

The following guidelines will be used by Promotion Panel members in their review of dossiers and decisions about promotion.

1. There are no quotas for promotion. Numbers of successful candidates should not be taken into account in deciding about current applicants.

2. Only information contained within dossier will be considered. Other evidence, information, and hearsay about the candidate should not be discussed by, or influence the judgment of, individual members. The possible bias of individual members by external information is compensated for by the numbers of panel members and their various roles in the educational community.

3. The judgment for promotion is based on a dossier. It is not on a teacher as a professional, classroom merit, or reputation.

4. Deciding for promotion means that a teacher has presented sufficient evidence of being a well functioning, contributing member of the District. The evidence should be compelling and sufficient so as not to raise doubts in the Panel member's mind.

5. Quality evidence can pertain to a teacher's (A) preparation and potential, (B) process and performance, and (C) student outcome.

6. Lack of evidence in an area, e.g., pupil report or parent survey, should not be considered negative by Panel members. They should only consider evidence presented.

7. Panel members who are familiar with conditions and expectations at specific schools can share this information to provide a perspective.

8. More recent data, within the past three years, will be most important in decision making. Older data are less compelling, but valuable because they point to patterns of performance and accumulated merit.

9. Judgments should not be based on comparisons of specific teachers with each other. For example, the status of teacher Jones should not influence a decision

about teacher Smithe.

Understanding about the merits of a specific teacher may result from comparisons with the practice of other teachers in general. For example, levels of parent satisfaction of teacher Jones may be judged in comparison with averages of District teachers last year.

10. Panel members should share their differing perspectives, questions, and standards which come from their individual experience as well as representatives of roles within the educational community.

11. A Panel member should not make a decision about a dossier unless they are familiar with its contents.

12. Panel members will vote by secret ballot. A record of the numbers of votes will be kept by the acting Chair.

13. Each panel member is responsible not to vote on a dossier where there is a substantial conflict of interest.

14. Judgments about the merit and value of lines of evidence data are of two kinds.

A. Lines which have an objective or mandatory outcome include pupil report, parent survey, teacher test, peer review of materials, and systematic observation. Each of these has a minimal cutoff above which the Panel must find the evidence as supportive of promotion. As examples, an NTE score of 73%ile or student report global item average of 1.3 both automatically recommend for promotion.

B. Lines which require a panel judgment include professionalism, administrator report, student achievement, and other evidence. In these lines Panel members may find the evidence to suggest:

-strong merit, value & impact.
-satisfactory merit, value & impact.
-weak merit, value & impact.
-no merit, value & impact.

15. Only "strong..." or "satisfactory..." findings will count toward the required four lines for promotion. HOWEVER, the Panel as a whole has the descretion to balance a finding of "weak..." with "strong" performances in other lines (considerably above minimal) or compelling lines of evidence beyond the required four.

APPEALS

An appeal of a promotion denial may consist of four steps:

1. Confer with Oversight Committee member at local school for clarification of process and basis for appeal. (Unsuccessful applicants are eligible for review in subsequent years).

2. Meet with entire Oversight Committee to present case. New materials may not be added to dossier. Members will vote on whether or not there is a reasonable basis for appeal. Two votes (secret ballot) are required to have Promotion Panel reconsider the case. Oversight Committee prepares a written statement of the basis for re-review.

3. Re-review by Promotion Panel. Applicant may present case in person.

4. Further appeals are as per District grievance procedures.

The applicant or a representative may attend any stage of the appeal.

HOW NUMERICAL STANDARDS WERE DETERMINED

Numerical standards were developed for several lines of evidence for 1985-86. Pupil reports and parent surveys had minimal acceptable levels established by using the same rules which follow:

1. Tabulate 1984-85 data for Park City teachers.

2. Determine averages (means) on global items for teachers at each of four grade levels: K-3, 4-6, middle-school, and high school.

3. Test for statistical significance of differences in means by grade level. Grade levels which differ are to receive their distinctive minimal acceptable levels.

4. Compute means and standard deviations (average distance from the mean) for each distinctive grade level.

5. Rule for minimal level: a class average more than one standard deviation below the mean for that distinctive grade level group is considered to be not acceptable.

SUGGESTED TIMETABLE FOR DOSSIER ASSEMBLY

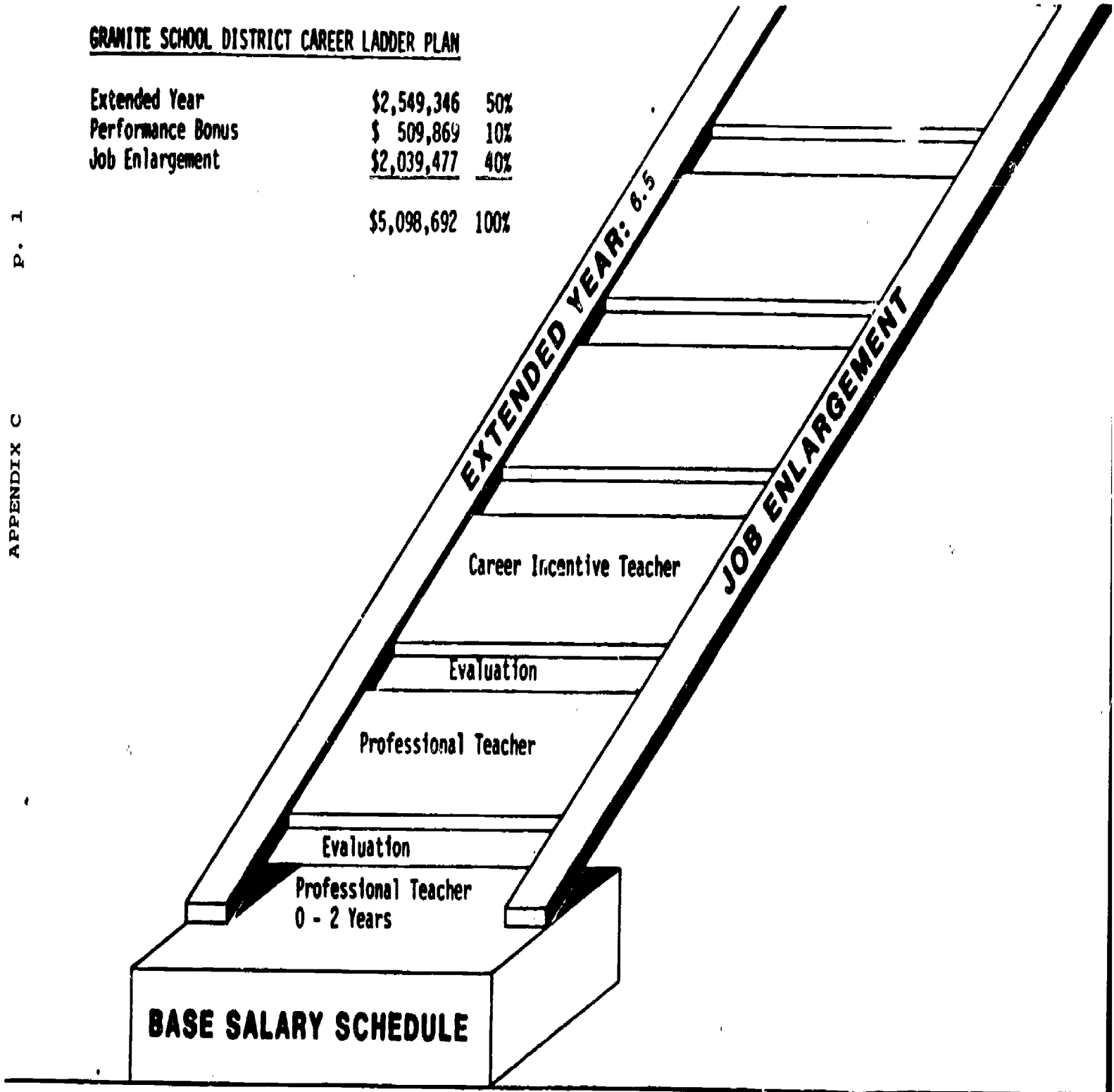
Sep	Oct	Nov	Dec	Jan
pretest validate goals plan peer review	professionalism register NTE	NTE	peer review materials	prepare peer review

Feb	Mar	Apr	May
administrator review peer reviews	update professionalism register NTE	parent surveys student reports NTE post-test	submit dossier

Teachers who have already been promoted may complete parent and student surveys in May, update professionalism at year end. Administrator reviews can be scheduled later in the year. The District may schedule its own administration of the National Teachers' Exam.

GRANITE SCHOOL DISTRICT CAREER LADDER PLAN

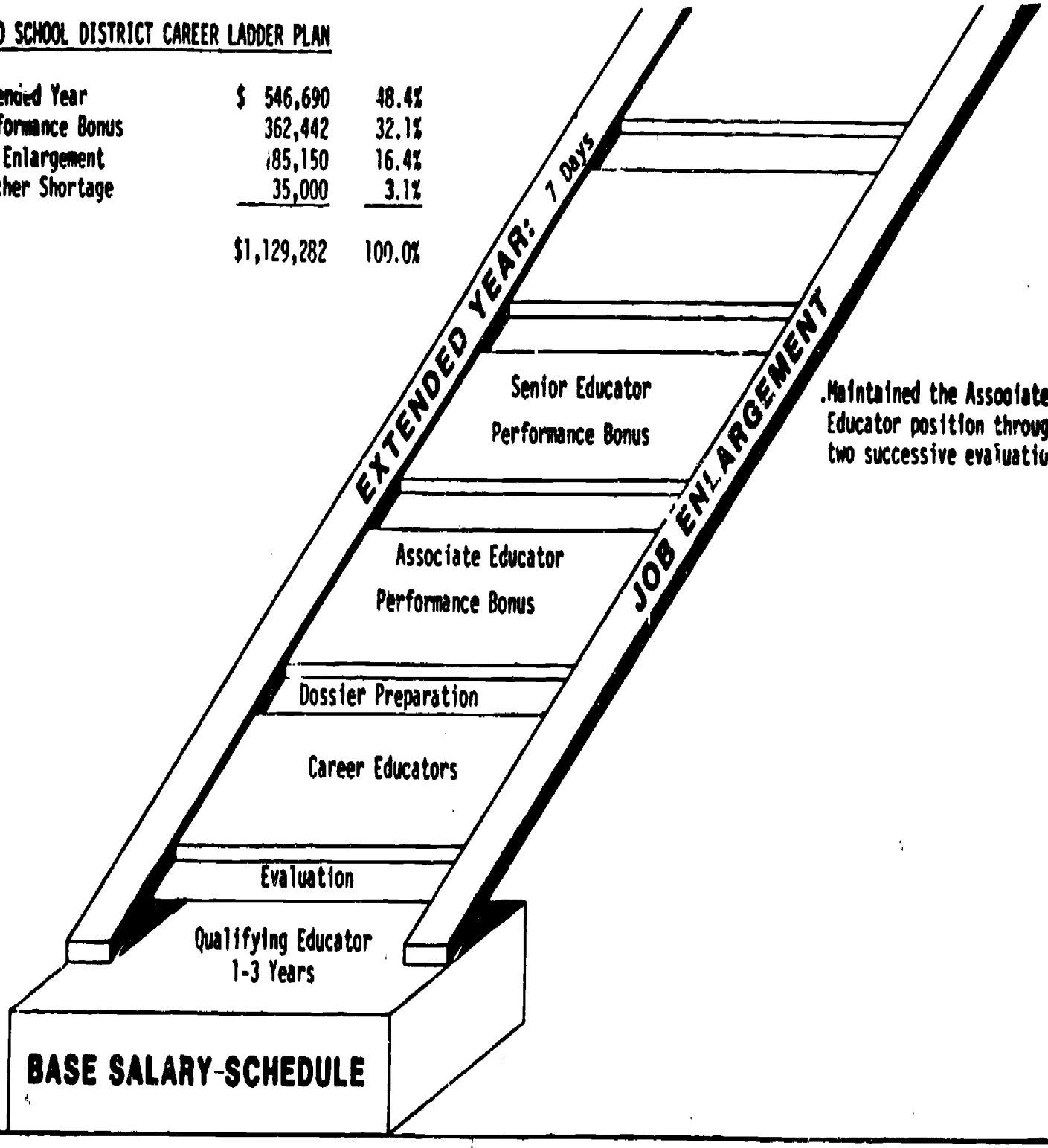
Extended Year	$2,549,346	50%
Performance Bonus	$ 509,869	10%
Job Enlargement	$2,039,477	40%
	$5,098,692	100%



1. Extended Year: Six and one-half (6-1/2) days total. One day prior to school; one day at the conlusions of three school quarters. These are teacher work days at the school. Two days have been returned to the students' instructional calendar. One-half day used for inservice training to be determined by the individual school.
2. Performance Bonus: Applicants submit a dossier containing lines of evidence to confirm outstanding performance. Minimum stipend is $1,000.00.

NEEO SCHOOL DISTRICT CAREER LADDER PLAN

Extended Year	$ 546,690	48.4%
Performance Bonus	362,442	32.1%
Job Enlargement	185,150	16.4%
Teacher Shortage	35,000	3.1%
	$1,129,282	100.0%

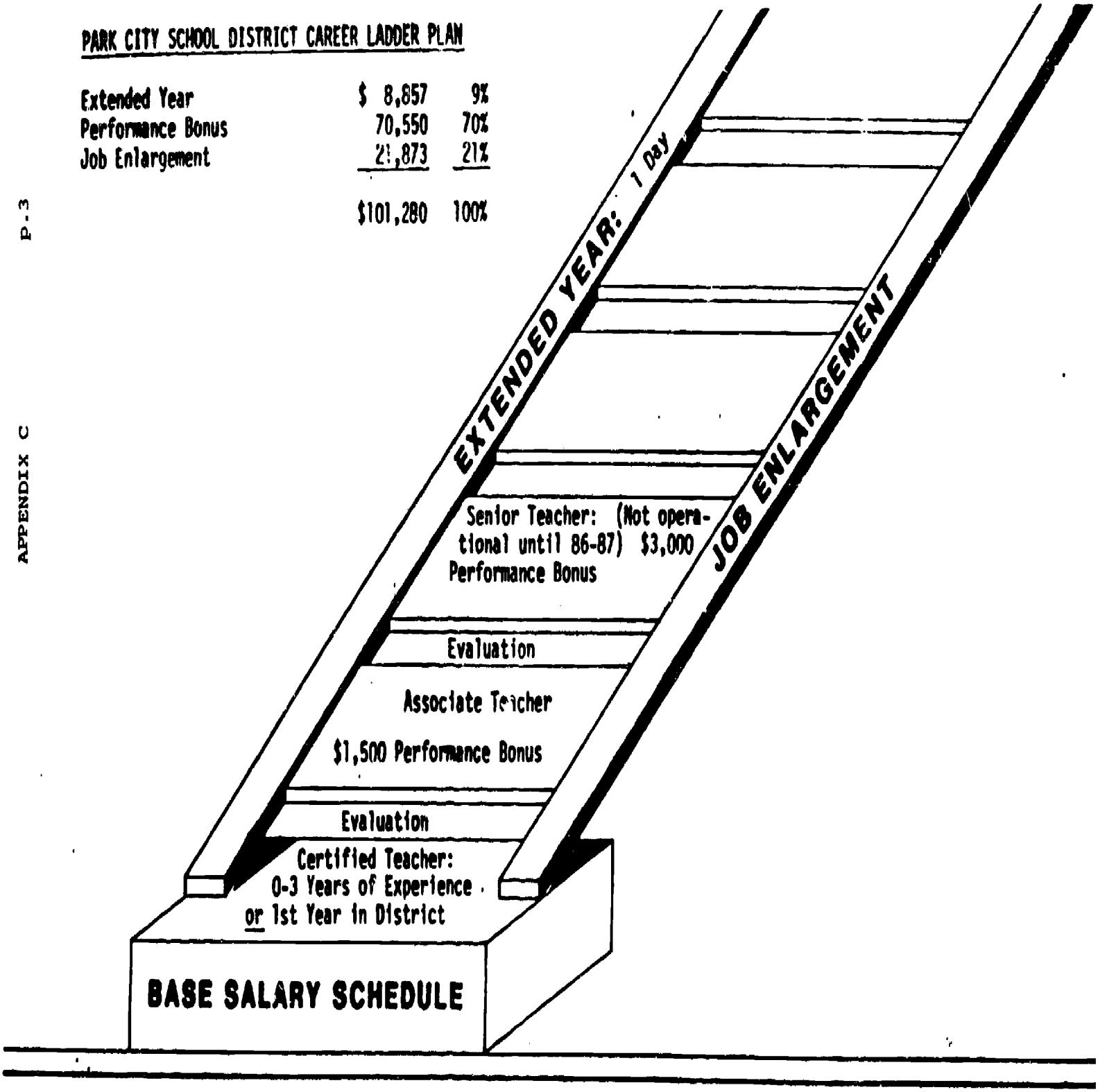


.Maintained the Associate Educator position through two successive evaluations

1. Extended Year: Seven days added. Four used for inservice training in essential elements of instruction and the remaining three days for teacher preparation.
2. Performance Bonus: Awarded to Associate and Senior educators based on acceptable dossier.
3. Job Enlargement: Optional, by application on all levels, as facilitators, promotion review board, and building level positions.
4. Teacher Shortage: Still recruiting for coming year. They plan to review the staffing after school has started. Anticipated use of funds will be for extension of contract to teachers and additional duties.

PARK CITY SCHOOL DISTRICT CAREER LADDER PLAN

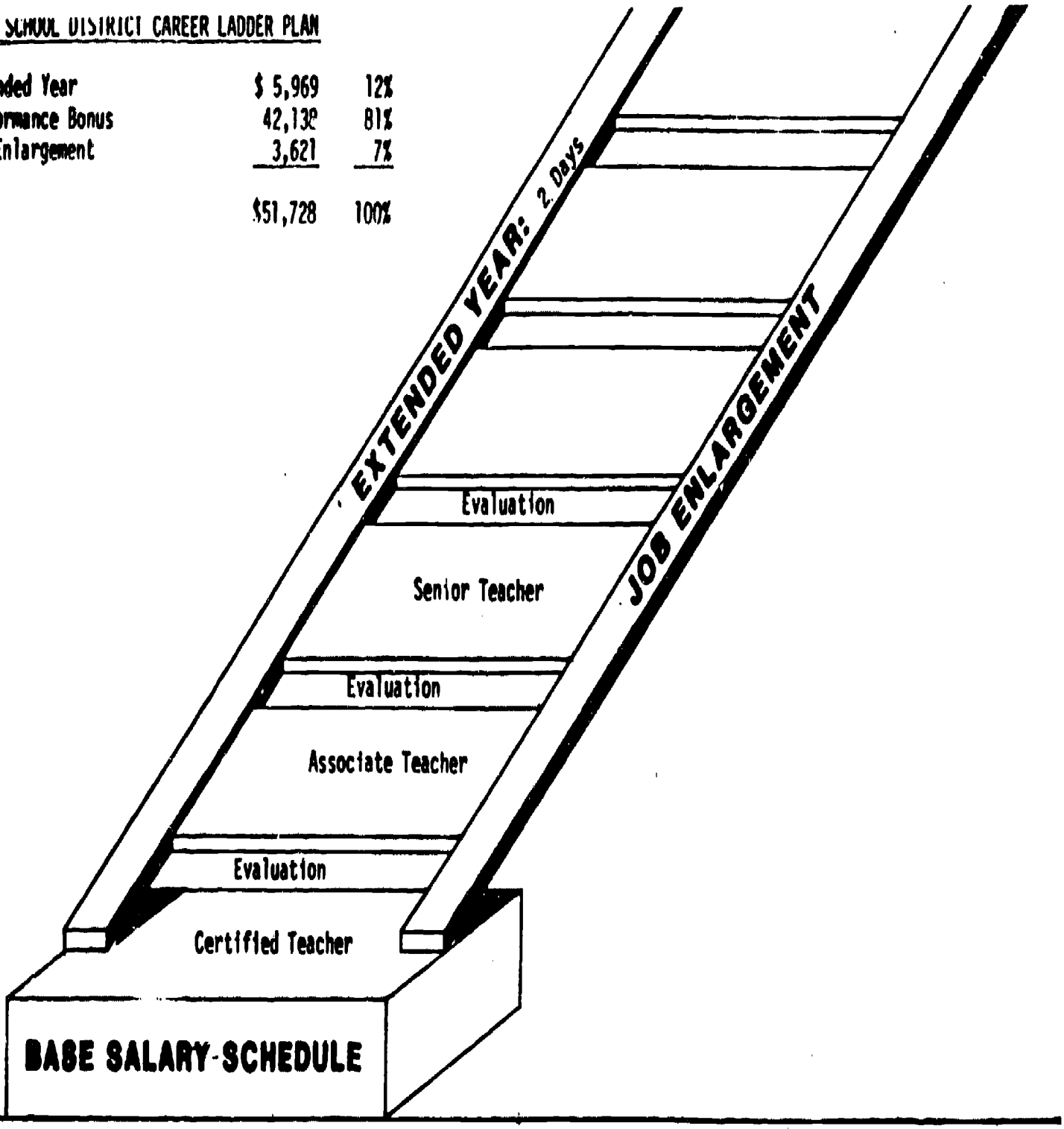
Extended Year	$ 8,857	9%
Performance Bonus	70,550	70%
Job Enlargement	21,873	21%
	$101,280	100%



This plan includes a high level of professional judgement in the evaluation of teacher dossiers containing a minimum of four and a maximum of eight lines of evidence. Administrator evaluation of teacher performance is the only clearly required line of evidence. This plan is heavily weighted toward performance bonuses (70%) and these bonuses are directly linked to promotion to the Associate Teacher level for as many as 82% of the district's teachers.

HIGH SCHOOL DISTRICT CAREER LADDER PLAN

Extended Year	$ 5,969	12%
Performance Bonus	42,138	81%
Job Enlargement	3,621	7%
	$51,728	100%



This plan is a revision of the 1984-85 plan for this school district and, as such, contains a "change over" phase for 1985-86. Thus, waivers will be given to most teachers in order to make the transition to the new plan. With little teacher turnover, almost all teachers will be eligible for all aspects of this plan during 1985-86.

1. Extended Year: Two optional days available for all teachers utilizing 10% of the available funds.
2. Performance Bonus: Associate and Senior Teachers are eligible to share 80% of the available funds.
3. Job Enlargement: All teachers are eligible for seven identified extra assignments that will utilize 10% of the available funds.

The Salt Lake Tribune, Sunday, April 13, 1986 B1

297 Utah Teachers Strut Their Stuff, Score in Top 18% on National Test

Nearly 300 teachers from Granite, Nebo and Park City school districts have received high scores on the National Teachers' Examinations as an optional part of career-ladder evaluations.

Kenneth D. Peterson, associate professor of educational studies at the University of Utah, said the average score of the 297 Utahns was in the top 18 percent nationwide.

He said 27 scores were in the top 1 percent for their subject areas and 44 percent of the teachers were in the top 10 percent.

Dr. Peterson is director of the Utah Teacher Evaluation Project, which has a grant from the U.S. Education Department to study teacher evaluations and career ladders in Utah.

The career ladder is a teacher pay reform adopted in Utah school districts for the 1984-85 school year in which teachers judged superior receive extra pay for extra work.

"The teachers opted to take the tests as part of the career-ladder programs which allow test scores as part of the evaluation process," said Dr. Peterson. He said there are no plans to require the tests of all teachers.

"While Utah citizens and legislators should be pleased with these scores, I'm not surprised by them," he said. "I've seen many academically well-prepared teachers in these districts. In addition, Utah teachers tend to do well on these tests."

The tests, produced by Educational Testing Service, are the most commonly used teacher examinations. They are designed to measure teachers' knowledge of their subjects and their professional knowledge about classroom work.

Dr. Peterson said using teacher tests is controversial.

"High test scores alone do not guarantee good teaching. We need teachers to communicate with young people, create active classrooms and do the hundreds of other jobs expected of them," he said.

"Because educators are concerned that teachers know their stuff, I think we should look for ways to increase the use of teacher tests," he said.

However, Dr. Peterson warned against mandating tests for veteran teachers, as recently done in Arkansas and Texas.

"Not all of our best teachers score well on these tests. It's just one form of excellence. Also, teacher tests are estimates that may become less accurate with people who have been away from test practicing for several years," he said.

While the tests are "quite good," he said it is difficult to write tests that match what all teachers actually teach in their classrooms.

"All of us in Utah need to create school working conditions that keep academically talented teachers in the classroom," said Dr. Peterson.

Poor way to reward Granite teache

Vicki Varela
Deseret News
Education writer

More than 800 teachers in Granite School District will put together brag books in their spare time over the next several months.

If a teacher's brag book includes impressive souvenirs of his or her professionalism, the teacher will get a $1,000 bonus from the school district, compliments of that now familiar but still confusing term "teacher career ladders."

Of course, nobody's calling the brag books *brag books*. Granite School District prefers to call them *dossiers*.

Brag book or dossier, the game is the same: Teachers must spend 20 or 30 hours packaging themselves to convince the school district they are a worthy investment.

To the winners, some 500 of them, go $1,000 bonuses. But what about the losers? A percentage of the $1,000 based on some sort of descending scale?

Nope. Those who can't convince their superiors of their outstanding performance won't receive an extra nickel.

In some ways the fix is in. Before a single brag book is handed in, it is already known that 335 teachers, will get nothing. That's because the district has $500,000 to dole out on the $1,000 bonuses, so no more than 500 of the 835 teachers who applied will get a slice of the pie.

All of this packaging has got teachers pretty riled up. And rightly so.

It is an impracticality, if not an indignity, for a teacher to stuff all the human interaction that goes on in the classroom between the pages of a scrapbook.

Imagine if doctors had to bottle up all the cancer cells they had killed, if pilots had to log all the accidents they had avoided or psychiatrists had to line up all the people they had saved from suicide.

Not many of the district's 3,009 teachers want to go 'on the record' with their gripes. The 835 teachers who have opted to seek the performance bonus are afraid gripes may diminish their chances at the $1,000 prize. The other 2,200 made their views known by not participating in the venture.

But dossiers are a standing joke in many faculty rooms these days. One junior high teacher says teachers at his school have quipped that they'll package their peers in an impressive dossier for a $50 fee.

The Granite Education Association surveyed teachers on their impressions of the bonus program, and the results were mostly negative, according to Bob Pierce, executive director of the GEA.

The survey results from one junior high school were mailed anonymously to this reporter. Teachers there came up with a sur of four items they favored about the dossier-based bonus and 16 items they disdained.

The upshot of the survey was that teachers want to be evaluated for what they do for children in the classroom, not for what kind of a dossier they can put together.

Michael Garbett, who oversees every career ladder program in Utah from the State Office of Education, says the Granite bonus plan is out of step with others throughout the state because of its emphasis on dossiers.

Many school districts don't require dossiers, and those that do give them far less emphasis than Granite, he said.

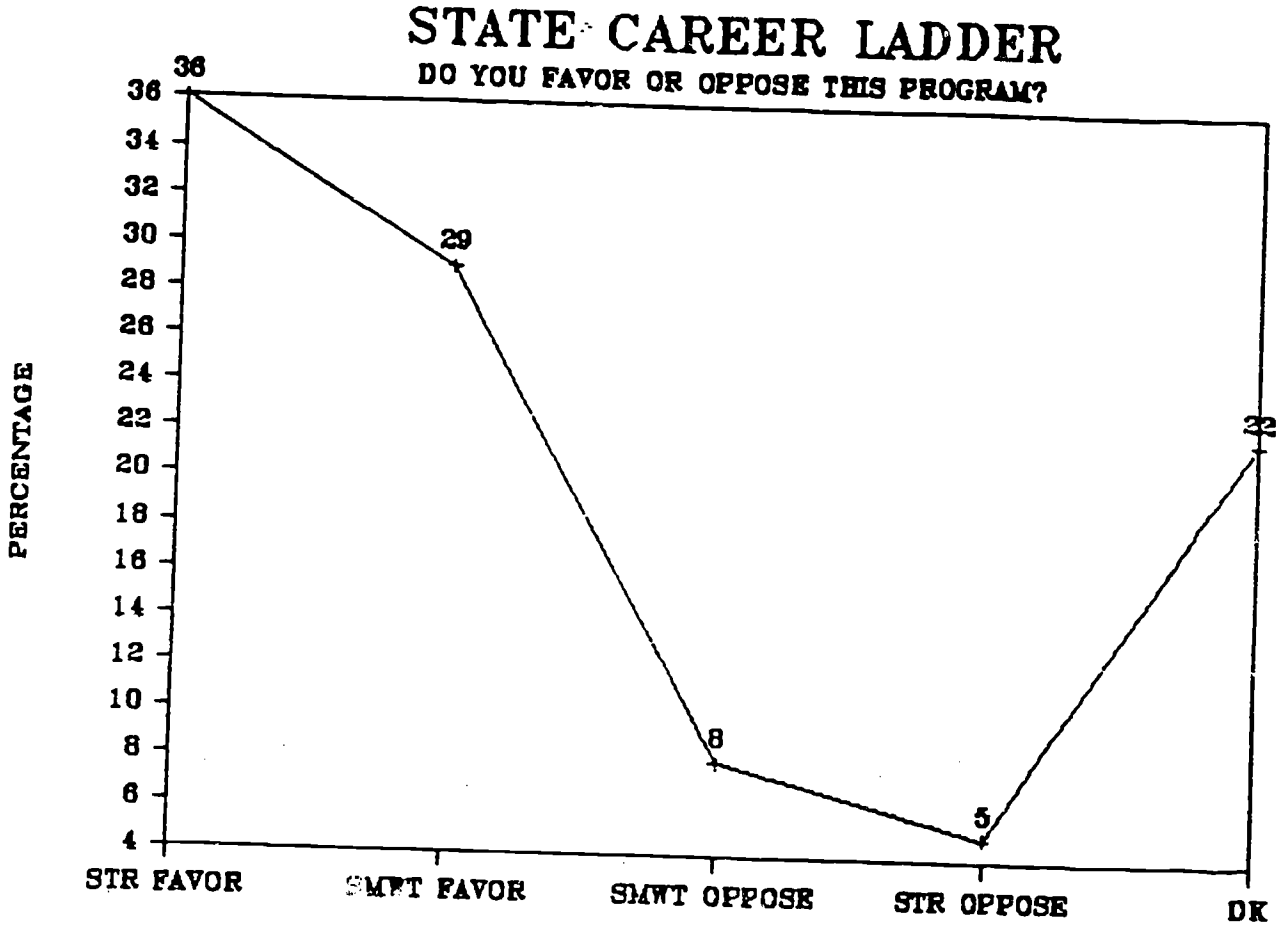
Other districts are doling out an average of 44 percent of their career ladder money for outstanding teachers, compared to Granite district, where only 5 to 10 percent of their career ladder money is being spent to reward outstanding performance. Also, other districts haven't set arbitrary limits to the number of teachers who get bonuses, he said.

Most of Granite's career ladder money has gone to teachers who were willing to take on special projects and to give every teacher several extra days for such things as lesson preparation and grading.

The bottom line is this: Granite School District must come up with a way of rewarding teachers for what they do in the classroom every day rather than how they look in a scrapbook.

If the district doesn't come up with a better bonus pay plan, teachers just may take their brag books somewhere else.

Question #53: Do you favor or oppose the idea of the state career ladder program?



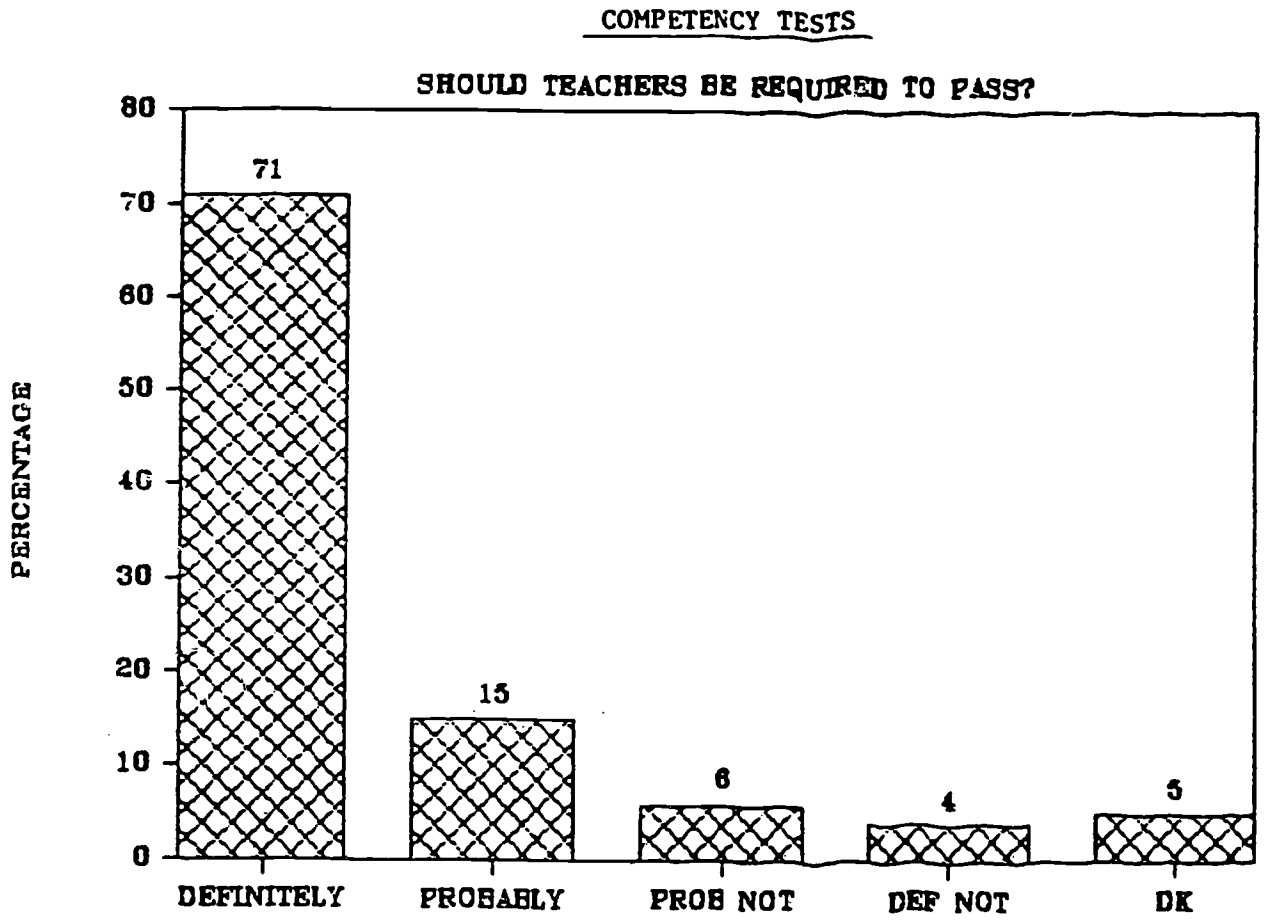
A state career ladder program for teachers is favored by the majority (65%) of Park City residents, however one of five (22%) say they "don't know". According to Dan Jones & Associates, although more people are knowledgeable today, the perception is that there is no consistency throughout the state concerning career ladders.

DEMOGRAPHIC PROFILE:

Those most in favor of a state career ladder program tend to fall into the following subgroups:

- under age 34 (1.56)
- some coll/tech (1.66)
- residents who rent (1.68)
- $25-35,000 income (1.61)
- less than 3 years in Park City area (1.61)
- parents with children in elementary school (1.73)

Question #54: Before they are hired by the school district, do you feel all teachers should or should not be required to pass a basic competency test to measure such things as their general knowledge and ability to think?



The Park City general public is overwhelming in favor (86%) of a required basic competency test for teachers before they are hired by the school district.

DEMOGRAPHIC PROFILE:

Residents most adamantly in favor of a required competency test for teachers are inclined to be: (lower mean score indicates more in favor)

- age 25-34 (1.31)
- less education, more in favor (high school grads - 1.24)
- females employed part time (1.28)
- $25-34,000 income (1.28)
- other Park City area residents (1.27)
- 1-3 years residency (1.21)
- parents with elementary age children (1.30)

APPENDIX F:
PARTICIPANT OBSERVER CRITIQUE OF GRANITE DISTRICT APPLICATION

Jean Kron, Teacher, Granite School District

The Performance Bonus Program (PBP), as well outlined in the Handbook, appears to have the potential to objectively evaluate teachers and to reward them for documented excellence. However, it was negatively received by teachers; only three teachers out of the 45 in my school participated. The purpose of this paper is to explore why most teachers chose not to take advantage of the opportunity to be financially rewarded for their excellence. Many teachers maintained that the PBP as conducted was not a bonus at all, but extra pay for extra work.

Following the presentation of the PBP to the faculty at our Junior High School, our support group met to discuss concerns and questions about not only the PBP, but teacher merit in general. My report is based on six meetings held in the Fall of 1985 which were attended by 10 to 12 teachers each session. It also is based on questionnaires from the teachers' organization and District. The school faculty is diverse, and well represents different kinds of teachers (ages, backgrounds, sexes) in the District.

From discussions and these sources, several predominant concerns arose based on teacher interpretation of the PBP:

> There are many teachers concerned about the [PBP's] delineation of "merit pay." Compiling a credible dossier does not equal merit pay, which teachers define as a reward for excellent classroom teaching; compiling a dossier does equal extra work, consuming time better spent in the activities of classroom interaction (i.e., the teaching-learning process). --Taken from a followup letter sent to the Boards of Education and several legislators.

An examination of teachers' organization questionnaires suggess that teachers were more concerned about the time spent compiling a dossier than any other factor: "with many secondary classloads above the 200 mark, this type of time-consuming 'busy work' will only add to already overwhelming burdens." Or, "SOME REWARD! If you're really lucky, you win the opportunity for more work!" One teacher mentioned that "it only adds additional pressures within an already busy school year."

Many teachers feel that these additional time demands, added to an already full day (in the classroom and at home preparing and correcting), will detract from the quality of teaching by cutting into those activities directly related to classroom interaction.

> The peer and-or administrator evaluation required by the...Program does not take into account the fact that there is little, if any, peer-administrator evalation due

to the severe time restraints of the teaching day. Besides ignoring these very real time restraints, the...Program requres more time to be expended for peer tabulation of surveys to document further lines of evidence for a colleague's dossier--in addition to the time spent collating one's own.

The presentation of the PBP itself suffered a time constraint. During a cursory 15 minute presentation by our principal in faculty meeting, teachers were instructed to "read it over and if [we were] smart [we would] take advantage of this opportunity to make $1000...maybe." Merit pay per se was not discussed, nor was the purpose of a dossier as a means of teacher mobility, independence, and documentation of excellence. Not a syllable alluded to the fact that a truly reliable dossier could be considered valid only after at least one entire year, preferably more, of documentation. This information should not only be presented in the PBP, but supported by the District.

The concept of documentation through four lines of evidence has been so compromised due to financial, time, and political factors that several of the lines could, according to teachers, be considered invalid. The administrative reports at our school were filled out following a classroom visit of less than 15 minutes. Teachers circulated their own parent and student surveys, as well as tabulated their own results. The District has not supported evaluation procedures through dispersal and analysis of results. Teachers do not appear to be aware of the proper procedures, and if they are they apparently do not believe they will be held accountable for reliable results.

Teachers felt duped again by the District: "Districts should not be allowed to 'cop out' on their evaluation responsibilities in this manner. As usual, it gets passed down to the teachers." Teachers are skeptical of District programs that purport to be to their advantage. One teacher feels that "this program appears to pass the buck to teachers to avoid losing career ladder monies."

The possibility of a financial reward was the only motivation provided for teachers to document their excellence. Again, teachers responded indignantly: "Another riduculous attempt to make the public think that excellence in teaching is being financially compensated;" or, "a BONUS is not a BONUS if it has to be 're-earned' after the fact!" or, "I can make more money with less effort doing other types of part time work."

Tenured teachers felt threatened that, after 10 or 15 years of what they felt to be good teaching, they were asked to validate their competence. One teacher asked, "If I haven't been doing a good job so far, why have they kept me around this long?" One person felt that the Program presents the subtle implication that those teachers who do not apply lack ambition or pride in their profession, when in fact they do.

Teachers are uncomfortable in parading their classroom laurels and yet they dislike being lumped together as a group. "It's demeaning to have to pat yourself on the back." Due to what teachers define as poor preparation by the District and a cursory presentation by the principal, the validity of the Program was constantly in question. "More effort in the preparation of a dossier by a mediocre teacher could make him or her appear to be something he or she is not. By the same standard, a poor teacher could elaborately fulfill this kind of program and appear competent."

As the Program now stands, teacher criticisms are understandable and appropriate. Teachers could not possibly have verified excellence with a completion deadline of only six months. From the dossiers I reviewed, the lines of evidence in our school were not properly followed. The dossier itself was an easily maniplated means to a financial reward without checks or controls for valid evaluation.

All support group teachers did feel that merit pay is a good concept and should be rewarded and that a choice of multiple lines of evidence is a valid idea. They provided the following ideas for improving the process:

1. 'Proving' of teachers should take place during their educational process, with certification, and before they are offered tenure. Not to do so is evidence of poor management.

2. Formulate committees and train them in evaluation processes with reasonable criteria for teacher evaluation.

3. More than $1000. should be considered for such awards.

4. There should be additional steps added to the pay scale which, though incremental, could be awarded upon recommendation after a proper evaluative process.

5. Have anonymous peer evaluation.

6. Offer any teacher with over 14 years of experience an opportunity for a reasonable "bonus" evaluation.

After reading dossiers from my school, talking and listening to teachers, and taking an evaluation course, I found that teachers as a group are uneducated when it comes to proper evaluation procedures and their outcomes. They are basically unable to see evaluation as on ongoing and vital to mobility within the profession as well as away from it. To remedy this, the presentation of evaluation programs and procedures should be thorough and conducted by evaluation experts. Districts should accept the responsibility of providing financial and logistical backing to train and hire experts, formulate competent peer review

committees, conduct evaluation workshops for teachers, and reward teaching professionals for valid evidence of excellence.

APPENDIX G

LEGAL QUESTIONS POSED BY CAREER LADDER EVALUATION

Career Ladders complicate the evaluation process. Evaluation is increasingly not only for retention purposes, but for recognition of excellence. This change raises a number of professional questions and legal concerns which have yet to be answered.

Regular teacher evaluation begins with the presumption of competence bestowed by a certificate. Thus, evaluation for retention must show evidence either of incompetence or practice which interferes with the educational process. There is considerable experience and precedent for both of these difficulties. However, career ladder promotion has no presumption of meritorious performance. It is not clear what burdens of documentation, opportunity, and comparison will be required for this new type of evaluation.

Administrator reports clearly have legal precedents for teacher evaluation. However, this evaluation approach is discounted in the literature. It is to be expected that litigation will challenge principal ratings as the only way to assess teacher performance. The suitability of panels to make decisions, including peers and parents as well as administrators, may be questioned.

New lines of evidence (such as teacher tests, parent surveys, systematic observation) are being established. In addition to uncertainty about the criteria performance levels in each of these procedures, the use of multiple lines of evidence will raise questions of consistency and fairness. The novel point of fairness in the Dossier-Promotion system is that teachers should have equal opportunity to document their particular performance, not necessarily that all teachers be documented in the same way.

A major cause of legal problems arising from teacher evaluation has been difficulties between teachers and administrators because of conflicting roles of administrators: are they leaders of the educational community or summative judges? Already career ladders have led to increased problems between teachers and administrators which can be expected to eventually lead to litigation.

A final development brought on by career ladders is the need for much increased teacher initiative in professional evaluation. This change, which includes peer review, will raise new questions about fairness and responsibility for teacher evaluation. Clearly, new efforts to prepare for evaluation and to train evaluators will have to be made by school districts.

An interesting dilemma for educators is the extent to which teacher evaluation will develop through academic procedures, i.e.,

research and development, and how much of it will be shaped through legal procedures, i.e., statute and litigation.

APPENDIX H:

MICROCOMPUTERS IN TEACHER EVALUATION

Introduction

The new evaluation procedures will be more complicated for teachers. Not only does good evaluation use multiple data sources, it uses them in various combinations for each teacher. This is necessary because good teaching comes in a variety of approaches and styles, individual classroom settings differ greatly, and no one line of evidence is completely satisfactory for every teacher. Consequently, multiple forms and procedures must be available. Another complexity is that teachers will need to analyze their own data with statistics, graphics, and norms from other teachers. Finally, good evaluation will require improved record keeping.

In addition to helping teachers to carry out improved evaluation, microcomputers can assist them to learn the new ideas and procedures. Inservice education in evaluation can be accomplished with examples, instruction, and support network information distributed on computer disks.

Figure 1 presents a list of teacher evaluation tasks which can be assisted by a computer.

FIG. 1: Uses of a Microcomputer for Teacher Evaluation

Directions for evaluation procedures
(e.g., "how to do a peer review")
District evaluation forms, surveys
District form letters
Statistical analysis routines
(e.g., means & standard deviations)
Network data: teachers who wish to share information
District norms on evaluation forms and surveys
Individual teacher records
(e.g., resume, course lists, test scores)
Student achievement data
Bibliographies of evaluation techniques
Records of evaluation costs and time
Graphics for presenting evaluation data

How Computers are used in Teacher Evaluation

Microcomputers can help teachers with many evaluation tasks. Some of the procedures, such as gathering rating forms from students or parents, will be done in the same way by all teachers who use them. Other tasks, such as record keeping, will be unique to individual teachers. Teachers

will be expected to analyze and present their data in individualized fashion.

One computer resource for teachers is a collection of directions for various evaluation procedures recorded on a disk. For example, the steps and procedures for a peer review of materials call for a great deal of preparation by a teacher. These directions and suggestions can be put on a reference disk. Sample items from teacher tests is another example of an evaluation resource.

Specific forms used in a district can be kept on a disk. These forms may include student reports, parent surveys, peer review reports, administrator reports, teacher test summaries, systematic observation, and documentation of professional activities. While no one teacher will use all possible forms, having them available helps teachers to choose appropriate ones and encourages their use. The advantage of having these on a computer wordprocessing system is the ease with which a user can add, delete, or change specific items to make the forms fit his or her situation. Other district resources include forms for presenting results and decisions of evaluation persons or panels.

Once forms are collected, they may be scored by computers. Card readers and sheet scanners enable forms to be scored on a large number of teachers and items. Most of these scoring programs enable aggregated data analysis which can be helpful in compiling district results.

Teachers may use a number of statistical analysis programs written in BASIC such as computation of averages, standard deviations, and distributions. Still more sophisticated programs may be used, for example analysis of variance for testing statistical significance of differences in class pre- and post-test scores. Other procedures such as correlations and chi-square enable teachers to explore relationships among their data. Regression analyses enable educators to predict expected student gains, given pretest scores of actual classes. All of these tools allow teachers to better understand and use their own evaluation data. The advantage of the computer is to make the tools easier and faster to use.

Networking information on database systems make it possible for teachers to contact one another. For example, teachers who use parent surveys can enter their own names and schools for consultations by other teachers who are considering the procedure. Resulting phone calls and visits of teachers by each other enable better selection and use of evaluation procedures. The disks can be updated by the district or teachers' organization.

District statistics, such as ranges and averages of various surveys, can be helpful to teachers because they

communicate expectations and results of typical practice. For example, many teachers have found that records of how others allocate instructional time are very helpful as they plan for their own classrooms. Knowledge of levels of student satisfaction and achievement test gains shown by colleagues can help teachers gauge their own effectiveness. Availability of a wide range of norms permits formative evaluation by individual teachers who can compare their practice and results with those of colleagues.

Custom programs

Using a computer for evaluation goes beyond providing standard forms, procedures, and analyses. Teachers can develop their own custom records and data presentations of their preparation, teaching performance, and student outcomes. Good evaluation challenges individual teachers to conceptualize and document their value and impact to the educational system. As with other uses of computers, we should expect to see many examples of creativity in individual teacher evaluation.

```
]CATALOG

DISK VOLUME 254

*A 002 HELLO
*A 003 AVERAGE & S.D.
*A 006 GAINS SIGNIFICANCE
*A 008 COMPARE 2 GROUPS
*A 008 COMPARE >2 GROUPS
*A 005 CORRELATION
*A 006 DISTRIBUTION
*A 008 GROUP CF MEAN
*A 005 ITEM ANALYSIS
*A 003 RANDOM NUMBERS
*A 005 TEST RELIABILITY
*A 004 PREDICTED GAINS
```

```
 10  HOME
 20  PRINT "      AVERAGE & STANDARD DEVIATION
 30  PRINT
 40  PRINT
 50  PRINT "NUMBER OF ITEMS ";
 60  INPUT N
 70  PRINT
 80  FOR I = 1 TO N
 90  PRINT "ITEM ";I;
 100  INPUT D
 110 P = P + D
 120 M = M + D ^ 2
 130  NEXT I
 140 R = P / N
 150 V = (M - N * R ^ 2) / (N - S)
 160  PRINT
 170  PRINT "          MEAN = ";R
 180  PRINT "          S.D. = "; SQR (V)
 190  END
```

```
 10  HOME
 20  PRINT "
 30  PRINT                    RANDOM NUMBERS
 40  PRINT "
 50  PRINT              (LIMIT: 1-999 INCLUSIVE)
 60  PRINT
 70  PRINT "HOW MANY NUMBERS DO YOU WANT ";
 80  INPUT N1
 90  PRINT
 100  PRINT " LOWEST NUMBER ";
 110  INPUT N2
 120  PRINT "HIGHEST NUMBER ";
 130  INPUT N3
 140  HOME
 150  FOR I = 1 TO N1
 160 N =  PEEK (78) + 256 *  PEEK (79)
 170 X =  INT ( RND (N) * 1000)
 180  IF X >  = N2 THEN 200
 190  GOTO 160
 200  IF X <  = N3 THEN 220
 210  GOTO 160
 220  PRINT X
 230  NEXT I
 240  PRINT "WANT MORE ? (YES=1  NO=0) ";
 250  INPUT R
 260  IF R = 0 THEN 290
 270  HOME
 280  GOTO 70
 290  END
```

```
10  HOME
20  PRINT "         CORRELATION COEFFICIENT
30  PRINT
40  PRINT
50  PRINT "YOU WILL BE CALCULATING THE
60  PRINT "RELATIONSHIP BETWEEN TWO VARIABLES.
70  PRINT "EACH OF YOUR MEASUREMENTS IS A PAIR
80  PRINT "OF VALUES--ONE VALUE FOR EACH VARIABLE.
90  PRINT
100  PRINT
110  PRINT "ENTER NUMBER OF DATA PAIRS";
120  INPUT N
130  PRINT
140  PRINT
150  PRINT "FOR EACH DATA PAIR ENTER:
160  PRINT "  VALUE1,VALUE2 (E.G., 21,92)
170  PRINT "NOTICE: NO SPACE AND
180  PRINT "COMMA SEPARATES VALUES
190  PRINT
200  PRINT
210  FOR I = 1 TO N
220  PRINT "TWO VALUES OF PAIR ";I;
230  INPUT X,Y
240 J = J + X
250 K = K + Y
260 L = L + X ^ 2
270 M = M + Y ^ 2
280 R = R + X * Y
290  NEXT I
300 R2 = (N * R - J * K) /  SQR ((N * L - J ^ 2) * (N * M - K ^ 2))
310  PRINT
320  PRINT
330  PRINT "     *   *   *   *   *   *   *
340  PRINT
350  PRINT "CORRELATION COEFFICIENT (R)= ";R2
360  PRINT
370  PRINT
380  PRINT "THE AMOUNT OF OVERLAP
390  PRINT "(OR SHARED RELATION)
400  PRINT "OF THE VARIABLES IS ";(R2 ^ 2) * 100;"%"
410  END
```

```
10  HOME
20  PRINT "    COMPUTING EXPECTED GAINS
30  PRINT
40  PRINT
50  PRINT "YOU WILL NEED TO OBTAIN INFORMATION
60  PRINT "FROM THE TEST PUBLISHER ON THE
70  PRINT "PERFORMANCE OF THE GROUP ON WHICH
80  PRINT "THE TEST WAS NORMED.
90  PRINT "ASK FOR THE 'REGRESSION EQUATION,'
100  PRINT "WHICH HAS THE FORM:
110  PRINT "EXPECTED GAIN (Y)=A+B*PRETEST MEAN (X).
120  PRINT "THEN ENTER THE DATA BELOW:
130  PRINT
140  PRINT
150  PRINT "'A' VALUE";
160  INPUT A
170  PRINT "'B' VALUE";
180  INPUT B
190  PRINT
200  PRINT "ENTER THE PRETEST SCORE OR MEAN";
210  INPUT X
220  PRINT
225 Y = A + B * X
230  PRINT "THE GAIN EXPECTED FOR YOUR
231  PRINT "AVERAGE SCORE OR GROUP
240  PRINT "WAS ";Y;"."
250  PRINT
260  IF X < Y THEN 310
270  PRINT "YOUR SCORE WAS ABOVE EXPECTATION.
280  GOTO 320
310  PRINT "YOUR SCORE WAS BELOW EXPECTATION.
320  END
```

```
10  HOME
20  PRINT "          SIGNIFICANCE OF GAINS"
30  PRINT
40  PRINT
50 K(I) = 0
60 Q(I) = 0
70  PRINT "NUMBER OF STUDENTS";
80  INPUT R(I)
90 N = R(I)
100  DIM P(N,2)
110  PRINT
120  PRINT
130  PRINT "FOR EACH STUDENT ENTER:
140  PRINT "PRETEST SCORE, POSTTEST SCORE
145  PRINT "(E.G., 78,84)
150  PRINT "NOTICE: NO EMPTY SPACES AND
160  PRINT "A COMMA SEPARATES SCORES
170  PRINT
180  PRINT
190  FOR D1 = 1 TO R(I)
200  PRINT "  STUDENT ";D1;
210  INPUT X,Y
220 T1 = X - Y
230 K(I) = K(I) + T1
240 Q(I) = Q(I) + T1 ^ 2
250  NEXT D1
260 E = K(I) / R(I)
270 F = R(I) - 1
280 T = E /  SQR ((Q(I) - ((K(I) ^ 2) / R(I))) / (R(I) * (R(I) - 1)))
290  PRINT
300  PRINT "           T=";T
310  PRINT "          DF=";F
320 X = 1
330 Y = 1
340 T = T ^ 2
350  IF T < 1 THEN 400
360 S = Y
370 E1 = F
380 Z = T
390  GOTO 430
400 S = F
410 E1 = Y
420 Z = 1 / T
430 J = 2 / 9 / S
440 F1 = 2 / 9 / E1
450 L =  ABS ((1 - F1) * Z ^ (1 / 3) - 1 + J) /  SQR (F1 * Z ^ (2 / 3) + J)
460  IF E1 < 4 THEN 500
470 X = .25 / (1 + L * (.196854 + L * (.115194 + L * (.000344 + L * .019527
480 X =  INT (X * 10000 + .5) / 10000
490  GOTO 520
500 L = L * (1 + .08 * L ^ 4 / E1 ^ 3)
510  GOTO 470
520  IF T >  = 1 THEN 540
530 X = 1 - X
540  PRINT "           P=";X
550  PRINT
560  PRINT "THIS DIFFERENCE BETWEEN PRETEST AND
570  PRINT "POSTTEST SCORES"
580  IF X < .05 THEN 630
610  PRINT "IS NOT STATISTICALLY SIGNIFICANT.
620  GOTO 640
630  PRINT "IS STATISTICALLY SIGNIFICANT.
640  END
```

```
10  HOME
20  PRINT "        SIGNIFICANCE OF DIFFERENCE
22  PRINT "           BETWEEN TWO GROUPS
30  PRINT
40  PRINT "ENTER NUMBER IN LARGEST GROUP";
50  INPUT N
60  PRINT
70  PRINT
80  DIM P(N,2)
90  DIM V(2),R(2),M(2),D(2)
170 N = 2
200  FOR I = 1 TO  SGN (N - 1) + 1
210 V(I) = 0
220 D(I) = 0
230  PRINT "GROUP";I;":"
240  PRINT "  NUMBER OF CASES";
250    PUT R(I)
260  FOR J = 1 TO R(I)
270  PRINT "   CASE";J;
280  INPUT P(J,I)
290 V(I) = V(I) + P(J,I)
300 D(I) = D(I) + P(J,I) ^ 2
310  NEXT J
320 M(I) = V(I) / R(I)
330 V(I) = (D(I) - V(I) ^ 2 / R(I)) / (R(I) - 1)
340  NEXT I
350  PRINT
430 A = (M(1) - M(2)) /  SQR (1 / R(1) + 1 / R(2))
440 B = R(1) + R(2) - 2
450 A = A /  SQR (((R(1) - 1) * V(1) + (R(2) - 1) * V(2)) / B)
520 T =  ABS (A)
530 P = B
700  PRINT "            T=";T
710  PRINT "           DF=";P
720 X = 1
730 Y = 1
740 T = T ^ 2
750  IF T < 1 THEN 800
760 S = Y
770 E1 = P
780 Z = T
790  GOTO 830
800 S = P
810 E1 = Y
820 Z = 1 / T
830 J = 2 / 9 / S
840 F1 = 2 / 9 / E1
850 L =  ABS ((1 - F1) * Z ^ (1 / 3) - 1 + J) /  SQR (F1 * Z ^ (2 / 3) + J)
860  IF E1 < 4 THEN 900
870 X = .25 / (1 + L * (.196854 + L * (.115194 + L * (.000344 + L * .019527)
880 X =  INT (X * 10000 + .5) / 10000
890  GOTO 920
900 L = L * (1 + .08 * L ^ 4 / E1 ^ 3)
910  GOTO 870
920  IF T >  = 1 THEN 940
930 X = 1 - X
940  PRINT "            P=";X
950  PRINT
960  PRINT
970  PRINT "THIS   FFERENCE BETWEEN GROUPS
980  IF X < .05 THEN 1010
990  PRINT "IS NOT STATISTICALLY SIGNIFICANT.
1000  GOTO 1020
1010  PRINT "IS STATISTICALLY SIGNIFICANT.
1020  END
```

```
10  HOME
20  PRINT "SIGNIFICANCE OF DIFFERENCES IN AVERAGES
30  PRINT "    AMONG MORE THAN TWO GROUPS
40  PRINT
50  PRINT
60  PRINT
70  PRINT "TOTAL # OF STUDENTS IN ALL GROUPS";
80  INPUT N
90  PRINT "                    NUMBER OF GROUPS";
100  INPUT K
110  DIM C(K)
120  PRINT
130  FOR I = 1 TO K
135  PRINT
140 A = A + 1
150  PRINT "NUMBER IN GROUP ";A;
160  INPUT C
170  PRINT
180  FOR T = 1 TO C
190  PRINT "STUDENT ";T;
200  INPUT X
210 X2 = X ^ 2
220 T1 = T1 + X2
230 L(A) = L(A) + X
250  NEXT T
260 S2 = S2 + L(A)
270 Q(K) = (L(A) ^ 2) / C
280 S3 = S3 + Q(K)
290  NEXT I
300 S1 = S1 + Q(K)
310 W = S2 ^ 2 / N
320 D1 = K - 1
330 D3 = N - 1
340 D2 = D3 - D1
350  PRINT
360  PRINT
370  PRINT "DF (BETWEEN,WITHIN,TOTAL)= ";D1;" ";D2;", ";D3
380 V1 = (S3 - W) / D1
390 V2 = ((T1 - W) - (S3 - W)) / D2
400 F = V1 / V2
410 W2 = 1 - (((T1 - W) - (S3 - W)) / (T1 - W))
420  PRINT
430  PRINT
440  PRINT "            F = ";F
450 X = 1
460  IF F < 1 THEN 510
470 S = D1
480 T = D2
490 Z = F
500  GOTO 540
510 S = D2
520 T = D1
530 Z = 1 / F
540 J = 2 / 9 / S
550 K = 2 / 9 / T
560 Y =  ABS ((1 - K) * Z ^ (1 / 3) - 1 + J) /  SQR (K * Z ^ (2 / 3) + J)
570  IF T < 4 THEN 610
580 X = .5 / (1 + Y * (.196854 + Y * (.115194 + Y * (.000344 + Y * .019527))))
590 X =  INT (X * 10000 + .5) / 10000
600  GOTO 630
610 Y = Y * (1 + .08 * Y ^ 4 / T ^ 3)
620  GOTO 580
630  IF F >= 1 THEN 650
640 X = 1 - X
650  PRINT "            P = ";X
660  PRINT
670  PRINT
680  IF X < .05 THEN 710
690  PRINT "NONE OF THESE GROUPS
700  GOTO 720
710  PRINT "AT LEAST ONE OF THESE GROUPS
720  PRINT "HAS AN AVERAGE WHICH IS
730  PRINT "(STATISTICALLY) SIGNIFICANTLY DIFFERENT
740  PRINT "FROM THE TOTAL SAMPLE AVERAGE.
750  END
```

```
10  HOME
20  PRINT "           DISTRIBUTION SIGNIFICANCE
30  PRINT
40  PRINT "NUMBER OF ROWS ";
50  INPUT R
60  PRINT "NUMBER OF COLUMNS ";
70  INPUT C
80  DIM V1(R * C),V2(C),A(R)
90  PRINT
100  PRINT "CONTINGENCY TABLE:"
110  FOR I = 1 TO R
120  PRINT "ROW ";I
130  FOR J = 1 TO C
140  PRINT "  ELEMENT ";J;
150  INPUT V1((I - 1) * C + J)
160  NEXT J
170  NEXT I
180  PRINT
190 M = 1
200  FOR I = 1 TO R
210  FOR J = 1 TO C
220 A(I) = A(I) + V1(M)
230 M = M + 1
240  NEXT J
250 L = L + A(I)
260  NEXT I
270 N = R * C
280  FOR I = 1 TO C
290  FOR J = I TO N STEP C
300 V2(I) = V2(I) + V1(J)
310  NEXT J
320  NEXT I
330  FOR I = 1 TO C
340  FOR J = 1 TO R
350 P = A(J) * V2(I) / L
360 X = I + (J - 1) * C
370  IF R <  > 2 THEN 410
380  IF C <  > 2 THEN 410
390 Y = ( ABS (V1(X) - P) - .5) ^ 2 / P
400  GOTO 420
410 Y = (V1(X) - P) ^ 2 / P
420 Z = Z + Y
430  NEXT J
440  NEXT I
450  PRINT
460  PRINT "        CHI-SQUARE = ";Z
470  PRINT "DEGREES OF FREEDOM = ";(C - 1) * (R - 1)
480 V = (C - 1) * (R - 1)
490 W = Z
500 R = 1
510  FOR I = V TO 2 STEP  - 2
520 R = R * I
530  NEXT I
540 K = W ^ ( INT ((V + 1) / 2)) *  EXP ( - W / 2) / R
550  IF  INT (V / 2) = V / 2 THEN 580
560 J =  SQR (2 / W / 3.14159265)
570  GOTO 590
580 J = 1
590 L = 1
600 M = 1
610 V = V + 2
620 M = M * W / V
630  IF M < .0000001 THEN 660
640 L = L + M
650  GOTO 610
660 P = 1 - J * K * L
670  PRINT "                  P = ";P
680  PRINT
690  PRINT
700  PRINT "THESE OBSERVATIONS SUGGEST THAT
710  PRINT "THE CATEGORIES
720  IF P < .05 THEN 750
730  PRINT "DO NOT AFFECT DISTRIBUTION
740  GOTO 760
750  PRINT "DO AFFECT DISTRIBUTION
760  PRINT "WITH STATISTICAL SIGNIFICANCE.
770  END
```

```
10  HOME
20  PRINT "   RELIABILITY -- KUDER-RICHARDSON 21
30  PRINT
40  PRINT
45  DIM A(100)
46  DIM B(100)
50  PRINT "NUMBER OF SUBJECTS (TESTS) ";
60  INPUT N
70  PRINT
80  PRINT "  NUMBER OF ITEMS PER TEST ";
81  INPUT K
90  PRINT
100  PRINT "ENTER TEST SCORES"
105  PRINT
110  FOR I = 1 TO N
120  PRINT "TEST ";I;
130  INPUT A(I)
140 T = T + A(I)
150  NEXT I
160 M = T / N
170 MR =  INT (M * 100 + 0.5) / 100
180  FOR I = 1 TO N
190  FOR J = (I + 1) TO N
200  IF A(I) > A(J) THEN  GOTO 240
210 X = A(I)
220 A(I) = A(J)
230 A(J) = X
240  NEXT J
250  NEXT I
260  FOR I = 1 TO N
270  NEXT I
280  PRINT
290  FOR J = 1 TO K
300  NEXT J
310  FOR I = 1 TO N
315  FOR J = 1 TO K
320  IF A(I) = J THEN B(J) = B(J) + 1
330  NEXT J
340  NEXT I
350  PRINT "SCORE","FREQ"
360  FOR J = K TO 1 STEP  - 1
370  IF B(J) <  > 0 THEN  PRINT J,B(J)
380  NEXT J
390  FOR I = 1 TO N
400  IF A(I) = 0 THEN C = C + 1
410  NEXT I
420  IF C <  > 0 THEN  PRINT "0",C
430  FOR I = 1 TO N
440 X =  ABS (A(I) - M)
450 D = D + X ^ 2
460  NEXT I
470 V = D / N
480 S =  SQR (V)
490 SR =  INT (S * 100 + 0.5) / 100
500 R1 = (K * V) - (M * (K - M))
510 R2 = R1 / (V * (K - 1))
520 RR =  INT (R2 * 100 + 0.5) / 100
530  PRINT
540  PRINT "           MEAN SCORE = ";MR
550  PRINT "                S.D. = ";SR
560  PRINT
570  PRINT "   K-R 21 RELIABILITY = ";RR
580  PRINT
590 SM = S *  SQR (1 - R2)
600 SE =  INT (SM * 100 + 0.5) / 100
610  PRINT "       STANDARD ERROR = (+/-) ";SE
620  END
```

```
10  HOME
20  PRINT "        SIGNIFICANCE OF GROUP MEAN
22  PRINT "         COMPARED WITH GIVEN MEAN
30  PRINT
35  PRINT
40  PRINT "ENTER NUMBER IN GROUP ";
50  INPUT N
70  PRINT
190 N = 1
200  FOR I = 1 TO  SGN (N - 1) + 1
250 R(I) = N
260  FOR J = 1 TO R(I)
270  PRINT "   CASE";J;
280  INPUT P(J,I)
290 V(I) = V(I) + P(J,I)
300 D(I) = D(I) + P(J,I) ^ 2
310  NEXT J
320 M(I) = V(I) / R(I)
330 V(I) = (D(I) - V(I) ^ 2 / R(I)) / (R(I) - 1)
340  NEXT I
350  PRINT
380  PRINT "VALUE OF MEAN (X)";
390  INPUT M
400 A = (M(1) - M) *  SQR (R(1) / V(1))
410 B = R(1) - 1
510  PRINT
520 T =  ABS (A)
530 F = B
700  PRINT
710  PRINT "          DF=";F
720 X = 1
730 Y = 1
740 T = T ^ 2
750  IF T < 1 THEN 800
760 S = Y
770 E1 = F
780 Z = T
790  GOTO 830
800 S = F
810 E1 = Y
820 Z = 1 / T
830 J = 2 / 3 / S
840 F1 = 2 / 9 / E1
850 L =  ABS ((1 - F1) * Z ^ (1 / 3) - 1 + J) /  SQR (F1 * Z ^ (2 / 3) + J)
860  IF E1 < 4 THEN 900
870 X = .25 / (1 + L * (.196854 + L * (.115194 + L * (.000344 + L * .019527)))) ^
880 X =  INT (X * 10000 + .5) / 10000
890  GOTO 920
900 L = L * (1 + .08 * L ^ 4 / E1 ^ 3)
910  GOTO 870
920  IF T >  = 1 THEN 940
930 X = 1 - X
940  PRINT "           P=";X
950  PRINT
960  PRINT "THIS GROUP MEAN
970  IF X < .05 THEN 1000
980  PRINT "IS NOT
990  GOTO 1010
1000  PRINT "IS
1010  PRINT "(STATISTICALLY) SIGNIFICANTLY DIFFFERENT FROM THE GIVEN MEAN
1020  END
```

```
10  HOME
20  PRINT "      TEST ITEM ANALYSIS
30  PRINT
40  PRINT
50  PRINT "HOW MANY SUBJECTS TOOK TEST ";
60  INPUT N
70 S =  INT (N * .27)
80  PRINT
85  PRINT
90  PRINT "SELECT THE ";S;" LOWEST SCORING TESTS"
100  PRINT "AND THE ";S;" HIGHEST SCORING TESTS
110  PRINT
120  PRINT
130  PRINT "HOW MANY ITEMS WILL YOU ANALYZE ";
140  INPUT M
150  FOR I = 1 TO M
160  HOME
170  PRINT "HOW MANY CORRECT IN UPPER GROUP ";
180  INPUT U
190  PRINT "HOW MANY CORRECT IN LOWER GROUP ";
200  INPUT L
210  PRINT
215 D1 = (U + L) / (S * 2)
220  PRINT "       INDEX OF DIFFICULTY = ";D1
230 D2 = (U - L) / S
240  PRINT "   INDEX OF DISCRIMINATION = ";D2
245  PRINT
246  PRINT
250  IF D2 > .39 THEN  GOTO 300
260  IF D2 > .29 THEN  GOTO 320
270  IF D2 > .19 THEN  GOTO 340
280  PRINT "A POOR ITEM.  REVISE OR DISCARD.
290  GOTO 350
300  PRINT "A VERY GOOD ITEM!"
310  GOTO 350
320  PRINT "REASONABLY GOOD.  MAY BE IMPROVED"
330  GOTO 350
340  PRINT "MARGINAL ITEM.  NEEDS IMPROVEMENT."
350  PRINT
351  PRINT
352  PRINT
353  PRINT
360  PRINT
370  PRINT
380  PRINT
390  PRINT "PRESS ANY KEY FOR NEXT ITEM
400  INPUT K$
410  NEXT I
420  END
```

APPENDIX I

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