

FUTURE DIRECTIONS IN GRADING

by

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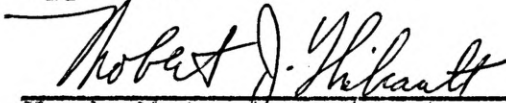
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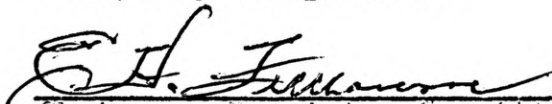
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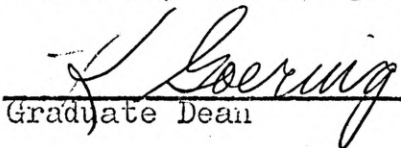
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## ABSTRACT

This paper is concerned with the future directions in grading which were developed through an analysis of the present grading systems, an examination of preferences in methods of evaluation and the creative manipulation by the author of the indicators for possibilities in grading.

The literature surveyed from the Montana State Library was arranged in several categories such as institutional and individual teacher's responsibility in grading; difficulties with current marking practices; curricular developments that implied a change in grading and the impact of the role of the computer in future grading systems.

Questionnaires were sent to directors of research projects in the field of evaluation made possible by Federal Funds, and listed in the May 1970 Education Research Indexed Clearinghouse (ERIC) Directory. The results of the survey showed that these educators preferred an emphasis on practical application as well as favoring a variety of methods of evaluation and also, self-evaluation by the students.

The recommendations made by the writer revolved around a breakdown of student progress reports into behavioral objectives with numerous methods of evaluation associated with each objective. The grade could be approached in several ways using this breakdown so that no grades, pass/fail and letter grades could be appropriately adapted to this system.

Self-evaluation could also be used effectively with this system and a trend in this direction was strongly indicated in the literature reviewed and the results of the survey.

In conclusion, the future model for grading proposed is an attempt to align marking practices with current curriculum developments such as individualized instruction and delineation of the instructional program in terms of behavioral objectives, and to gain increased accuracy in the interpretation of grades.

## CHAPTER I

### INTRODUCTION

A recognition of the impact of grades in determining students attitudes toward school and their values in regard to what is worth learning prompted the initiation of this study. Educational research had indicated that negative feedback did not produce a desirable effect as far as motivation for learning. Yet, the structure of the grading practices in many schools tended to give some students constant negative feedback. This type of dichotomy suggested that marking practices needed to be re-examined in order to meet the criteria already projected through research.

Besides the effect of the grading practices upon students' attitudes, the effect upon the quality of teaching offered another worthwhile reason to delve into the grading dilemma. If the encouragement of creativity or the higher cognitive levels of thinking, such as synthesis, were not incorporated into the methods of evaluating student progress they tended to be valued less in the teaching process. It seemed to the author that educators were seeking a way to recognize what theoretically was considered to be a good instructional objective by giving it a place of importance, as

represented to the student by a grade.

#### STATEMENT OF THE PROBLEM

The problem pursued in this paper was to discern the possibilities of future directions in grading or marking systems. Grades or marks were considered to be an integral part of the total educational program and most directly part of the total educational program and most directly aligned with the criteria and methods of evaluation. Therefore, the problem was expanded to allow viewing grading as a summarized reflection of the total educational program which was purported to the students in terms of an evaluative progress report.

#### DESIGN OF THE STUDY

In order to determine the possibilities for future directions in grading, three approaches were used.

The first approach involved an investigation of the current progress in this area with all its ramifications and implications through a review of literature. The review of literature was conducted in such a way as to discover:

1. the basis for the present marking practices and their effect on education.
2. the appropriate basis for a future grading system and its possible effect on education.

3. the role of the computer in present-day and future grading systems.

The second part of this study consisted of an investigation by means of a questionnaire of preferences of educators currently working in the field of evaluation in regard to criteria and methods of evaluation. It was considered highly probable that educators conducting research in this area sponsored by Federal grants were going to set the trends at least in the near future. Their preferences were perceived as indicative of changes that might be necessitated in the recording of evaluation of student progress.

The third part of this study was concerned with the use of the creative talent of the author in manipulating the indicators toward future trends into a workable model for future grading.

#### PURPOSE OF THE STUDY

Before a pilot program could be instituted in a secondary school that was anticipating a better approach to grading, it was considered advantageous to determine the indicators in the literature that were pointing to a need for change and a method for implementing change. The writer felt that informed rational decisions are often best made after a critical look at the existing situation is taken. It was

also considered advantageous to determine the opinions, reactions and points of view of the educators involved in research on evaluation since their work would be most likely to precipitate a change in grading.

It was the purpose of this study, therefore, to determine what these opinions, points of view, and reactions might be and to correlate the evidence provided from this source and the literature into a projection of possible and probable future marking practices.

#### LIMITATIONS AND/OR DELIMITATIONS OF THE STUDY

Since the proposal for the grading model is a creative idea of the author based on indicators from the literature and evaluators' preferences, projections as to the feasibility of the idea would be limited at this point. The model was not designed for immediate use but only for consideration and would be influenced by subsequent developments in the fields of computer science, evaluation and curriculum engineering prior to implementation.

The questionnaires were limited to directors of evaluation research who were supported by Federal grants as indicated by publication of their work in the Education Research Indexed Clearinghouse (ERIC).

## DEFINITION OF TERMS

Marking practices and grading systems were used interchangeably and the following definition sufficed in most instances:

Marking practices or grading system was taken to mean any method or device used for recording the process of rating or evaluating student progress.

The two most frequently mentioned types of grading systems were the letter grading system and pass/fail system and they were defined in the following manner as they related to the study:

### Letter Grading System

An academic method of rating students whereby they were awarded an alphabetical letter which was commensurate with their levels of performance or achievement as determined by their teacher or supervisor. The letters and their corresponding levels were: A - excellent; B - good; C - fair; D - poor; and F - failure.

### Pass/Fail System

An academic method of rating students whereby they were awarded a grade of pass if their level of performance or

achievement was satisfactory and a grade of fail if it were not, as determined by their teacher or supervisor.

Evaluation was used in a very broad sense according to the following definition:

Evaluation signified describing something, in terms of selected attributes and judging the degree of acceptability and suitability of that which had been described.

Another term that was used frequently and therefore required some clarification was instructional objective.

An instructional objective was taken to mean an intent which was anticipated as desirable in the early phases of a learning activity and served to select, regulate, and direct later aspects of the activity so that the total process was designed and integrated.

#### SUMMARY

Before attempts were made to synthesize an alternative grading system, it was advisable to survey the literature to critically analyze the present situation and to determine the directions of changes in curriculum that might lead to a change in the structure of grading.

The problem appeared to be one of detecting indicators that could crystallize possibilities for future directions in



marking practices.

Since marking practices were essentially viewed as recording devices of student progress within a given set of criteria and framework of evaluation it became apparent that an investigation of this area was needed. Educators involved in research of evaluation were consulted for their preferences with regard to criteria and methods of evaluation. This study was important because the opinions and points of view of these educators would be involved in prospective decisions regarding the assessment of current grading practices.

The study was undertaken to delineate the grading dilemma and its place in curriculum development and directions for expansion and improvement of the present grading system, that would facilitate additional positive motivation on the part of students and instructors when they participated in future learning experiences. In very simple terms, this paper was a search to find a way to alleviate some of the growing dissatisfaction with the present grading system by looking squarely at the problem and then trying to find a possible direction for change.

## CHAPTER II

### REVIEW OF THE LITERATURE

The following literature review represented a sample from the numerous journals, articles and books available in the Montana State University Library during the fall quarter of 1969 and winter and spring quarters of 1970. The review was organized around several topics.

Institutional responsibility and each teacher's responsibility in assigning grades was considered first. The second item was a critical analysis of the present marking practices which dealt largely with the interpretation of grades and the inaccuracy of methods of evaluation associated with a single grade. Curricular revision that implied future changes in grading made up the third topic and the impact of the computer on grading followed these three topics.

A primary focus of many reviewed articles seemed to be the institutional responsibility and individual teacher's responsibility in assigning grades to students. Wadjaget? or, for those who need a translation in better grammatical form -- What did you get? was pointed out as a phrase that resounded in the halls of every educational institution from elementary to graduate level. It was designated as the cry

of the grading game in American education. "Wadjaget?" was popularized by Sidney B. Simon who was well-known for his part in the grading controversy because he refused to issue grades at Temple University on the grounds that they were "immoral".

Grades can and often do determine who is sent to Vietnam and who is systematically screened out of further educational opportunities. Grades have made our students believe that "wadjaget" is the most important word to be used when summarizing their own education.<sup>1</sup>

Although Simon was considered an extremist by some educators in this regard, it was important to note that grades were implied as the controlling arm in education.

Some educational personnel felt that grades definitely helped impede two-way communication between teacher and student and the influence of letter grades was felt to be quite powerful and not necessarily beneficial.

The influence of strictness of grading practices on recorded school achievement is far from trivial.<sup>2</sup>

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<sup>1</sup>Sidney B. Simon and Howard Kirschenbaum and Rodney Napier, "The Day the Consultant Looked at Our Grading System," Phi Delta Kappan, (May 1970), Vol. LI, pp. 476-479.

<sup>2</sup>Bernard C. Kirby, "Three Error Sources in College Grading," The Journal of Experimental Education, (December 1962), Vol. XXXI, 2, pp. 212-18.

One of the greatest obstacles to effective education in the United States today is the traditional letter grade marking system. An A - F system forces the student to focus on grades. Inadvertently, traditional marks foster extrinsic rather than intrinsic motivation. Many students strive to attain a mark of B, no matter how, instead of coming to grips with the knowledge and theories of a specific discipline.<sup>3</sup>

A poem written by a high school student synthesizes the feelings of anxiety and worry, both on the part of the evaluator and the student.

I fail  
    and make you feel  
You've failed.  
  
You fail  
    and make me feel  
I've failed.  
  
We're caught together,  
Hanged and nailed.<sup>4</sup>

It is hoped that this first part of the review served to clarify the importance of the grading problem. The authors of these articles and other references all reflected that their perception of traditional marking practices was such that it placed a heavy responsibility upon educators to give

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<sup>3</sup>George Mannello, "Grades Must Go!," Educational Record, (Summer 1969), pp. 305-8.

<sup>4</sup>Daniela Gioseffi, "Student to Teacher to Student," The Journal of General Education, (Pennsylvania State Univ. Press, July 1968), Vol. XX, 2, p. 158.

considerable thought and re-examination to present grading practices.

The types of marking practices found in existence today were letter grades, pass/fail, percentage points and the scheduled conference. The letter grade system and pass/fail system were defined in chapter one. The percentage point system referred to an academic method of rating student progress based on a scale of 100 points. The scale was divided accordingly in terms of achievement levels - 90 or above superior, 80 to 90 very good, 70 to 80 good, 60 to 70 fair and below 60 failing and the 10 point range within each level allowed for some variability within that achievement level. The scheduled conference referred to a meeting of the teacher with the student and his or her parents regarding his or her progress.

As of September, 1969, the National Education Association Research Division published the following information regarding the use of the various grading systems.

Three teachers in four use a report card with a classified scale of letters for reporting pupil progress. In terms of percentages, 77% of the teachers use the letter grade system; fifteen percent use pass/fail and the remaining portion is divided between the percentage point

system and the scheduled conference.<sup>5</sup>

Due to the above statistics, it was felt that the discussion of grading should be confined to the letter grade system and the pass/fail system.

These afore-mentioned grading practices exhibited flexibility in the determination of the grade and also a simplicity in the manner in which evaluation was expressed. Although the flexibility, with which teachers used a given grade, had been criticized for its failure to eliminate variability among the values for a given grade, flexibility itself was viewed as good in that it allowed for individual preferences and differences among teachers. The simplicity and flexibility of the letter grade system and pass/fail system were considered desirable facets but an additional dimension that of communicability was questioned. Often this aspect of communicability was referred to as the interpretation of grades. However, interpretation of grades also held different meanings and it might be well to clarify this issue since it was increasingly pinpointed as the focal point of the grading dilemma.

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<sup>5</sup>"Reporting Pupil Progress," National Education Association Bulletin, (October 1969), Vol. XLVII, pp. 75-76.

The idea of interpretation of grades was broadly delineated and organized into three aspects as follows:

- (1) standards upon which the grade was based
- (2) factors upon which the grade was based
- (3) areas of the subject matter upon which the grade was based.

With regard to the letter grading system, the first of these three aspects; namely, the standards upon which the grade was based, was illustrated in the following manner:

If a certain student is given an A in an English course and an A represents excellence, does this mean that this student's work is excellent compared to all students in his class, in the school or the school district? Does this grade mean excellent for this student and his limitations? What is the standard upon which the excellence is based?<sup>6</sup>

A report card labeled "realistic" was proposed and tried at Sarasota Junior High School at Sarasota, Florida. The report card was unique and was a recognition of the problem of interpreting the standards upon which the grade was based.

Students grades are represented by a three digit number. Each digit refers to a chart that lists the students achievement according to three criteria. The first digit gives the student's performance according to ability;

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<sup>6</sup>Cecil O. Spray, "Meaningful Grade Reporting," Clearing House, (February 1969), Vol. XLIII, pp. 334-338.



the second digit gives the student performance based on rank in class and the third digit estimates the student's performance on a national level.<sup>7</sup>

The second segment, that was viewed as a difficulty in interpreting grades, was the factors that constituted the grade A or excellent. Kindsvatter successfully illustrated this point in the following manner:

Were the factors of recall, synthesis, or creativity used to determine the grade? By not stating which factors were used, the interpreter is liable to infer that all three factors were used, when in reality only one was used.<sup>8</sup>

To make teachers aware of what factors they were measuring in their evaluation of students, a large sample of ninth grade teachers were asked to analyze their test questions. Each test item was categorized according to the following categories: memory; comprehension; analysis; synthesis and judgement. As a result of the survey it was concluded:

In all programs, pre-vocational, business

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<sup>7</sup>Wm. Bruce Damron, "Grading and Reporting," Phi Delta Kappan, (April 1968), Vol. XLIX, pp. 463-4.

<sup>8</sup>Richard Kindsvatter, "Guidelines for Better Grading," Clearing House, (February 1969), Vol. XLIII, pp. 331-34.



and college preparatory, the majority of teachers required only memory.<sup>9</sup>

The next aspect that required consideration in interpreting grades was in regard to the course itself. In other words, in what areas of a course in English, for example, did the student demonstrate excellence? Also, what about those students who received a C grade, how many course objectives had they satisfied? What information did this C grade give to the student or to the teacher regarding the sequential follow-up to this course? Grading involved a form of reporting pupil progress with regard to instructional objectives by comparison with other students. However, exactly what the progress of the student was, could sometimes be very difficult to determine by looking at a C grade. Furthermore, it did not yield much information for crystallizing appropriate placement in the future learning situations of a particular student.

The foregoing breakdown of the difficulties of interpretation of grades crystallized the major criticisms leveled at the traditional letter grading system.

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<sup>9</sup>Isobel Pfeiffer and O. L. Davis, "Teacher-Made Examinations - What Kinds of Thinking Do They Demand," Bulletin of the National Association of Secondary School Principals, (September 1965), Vol. XLIX, pp. 1-10.

Another approach to the system of grading was the pass/fail procedure. Many of the difficulties of interpretation of letter grades also applied to pass/fail grades. However, the orientation of those using the pass/fail approach to grading was usually somewhat different from the letter grade approach. The accent was not on comparisons with other students but rather an emphasis was placed on the individualized learning process.

In one sense, a pass/fail system represents less extrinsic grading and where the spirit of the individualized orientation is fulfilled, it signifies the gradual transfer of effective evaluation from the teacher to the student himself.<sup>10</sup>

Many educators who advocated a pass/fail approach did not attempt to minimize the inadequacy of interpretation in this system similar to the letter grade system. However, they emphasized that the effects produced by the inadequacy of interpretation were not as threatening as those produced under the letter grade system.

The main benefit believed to have accrued from this approach is that with a lessening of the pressure of grades, students will be more experimental in their approach to subject matter and more adventurous in their selection of courses. The pass/fail approach is another step toward broadening and

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<sup>10</sup>Kindsvatter, op. cit.

deepening the educational experience  
of the individual.<sup>11</sup>

As a concluding remark for this section dealing with the present grading practices, the writer submits the following comment by Allelrod and Freedman:

When few alternatives are offered, when books and print are the sole objects of study, when teaching is by lecture, when evaluation is frequent and competitive, ability to memorize is fostered. Sense of competence, feeling of interpersonal relationships, and development of autonomy, identity and purpose are not.

When choice and flexibility are offered, when direct experiences are called for, when teaching is by discussion, and when evaluation involves frequent communication concerning the substance of behavior and performance, the ability to analyze and synthesize is fostered, as are a sense of competence, freeing of interpersonal relationships, and development of autonomy, identity and purpose.<sup>12</sup>

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<sup>11</sup>James Climo, "Pass/Fail at Longmeadow," Clearing House, (February 1969), Vol. XLIII, pp. 341-3.

<sup>12</sup>B. Allelrod and R. Freedman, Education and Identity, Jossey - Baso Publishing Co., (1969), p. 148.

The third part of the review of literature is concerned with the indicators at the present time that are pointing the way to future models of grading.

One area of current interest in education that presupposed a change in grading was the statement of instructional objectives in behavioral terms along with individualized instruction. Mager defined an objective in the following manner:

An instructional objective is an intent communicated by a statement describing a proposed change in a learner; a statement of what the learner is to be like when he has successfully completed a learning sequence.<sup>13</sup>

At the University of California, Los Angeles, the Center for the Study of Evaluation in January 1969 established an instructional objectives exchange catalog for the purpose of supplying teachers with assistance in formulating instructional objectives.<sup>14</sup>

Once the instructional objectives were formulated then an orderly record of the student's progress was an appealing approach to grading. Several school systems were found to be involved in pilot programs using this type of progress report.

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<sup>13</sup>Robert F. Mager, Preparing Instructional Objectives, Fearon Publishers Inc., (1962), p. 5.

<sup>14</sup>W. J. Popham, Instructional Objectives Exchange Catalog, Los Angeles: University of California Graduate School of Education, pp. 1-30.

One of the schools involved in the development and use of this type of progress report was the Douglas School System at Ellsworth Air Force Base near Rapid City, South Dakota. The materials used and the plans formulated were developed under the direction of Dr. Eldon Gran in a workshop cooperatively conducted by Black Hills State College and Douglas School System. The program was made possible by a Federal Title III grant and was implemented into the school system in September of 1968. One area in which the program was implemented was Elementary Math. The teachers and members of the college made up a guide which consisted of statements of behavioral objectives and a skills check sheet. The check sheet was for the purpose of recording pupil progress and the statement of one or more behavioral objectives corresponded to each item on the check sheet. It was recommended that all teachers using the guide be fully versed in the content of Mager's book entitled "Preparing Instructional Objectives."

Users of this guide were reminded that the behavioral objectives were terminal in nature. None involved all the steps that would be taken to reach the objective stated. It was also recognized that there may be other items that should be included on the check sheet. The Committee believed, however, that accomplishment of the skills to the degree and under the conditions specified in the objectives would result in both more uniform evaluation of progress and in a

sound elementary mathematics background for learners.<sup>15</sup>

A copy of the check sheet for elementary math will be given on the next page for examination and consideration.

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<sup>15</sup>"Guide for Elementary Math," (unpublished bulletin, Douglas School System, Ellsworth Air Force Base, South Dakota; 1968), p. 1-3.

CHECK SHEET-ELEMENTARY MATH

Name of Pupil \_\_\_\_\_

Key to Marking: Circled number means the topic has been introduced (22)  
Slash within circle means topic introduced and somewhat developed but needs more work (22)  
X within circle means item is developed to the extent indicated by the behavioral objective (22)

- I. Kindergarten: 1 2 3 4 5 6 7 8 9 10 11 12  
-----
- II. Reading-Writing-  
Counting: 1 2 3 4 5 6 7 8 9 10  
-----
- III. Addition-  
Subtraction: 1 2 3 4 5 6 7 8 9 10 11 12  
-----
- IV. Multiplication-  
Division: 1 2 3 4 5 6 7 8 9 10  
-----
- V. Fractional  
Numerals: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17  
18 19 20 21 22  
-----
- VI. Measurement-  
Money: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17  
18 19 20 21 22 23 24 25 26 27 28 29 30 31  
-----
- VII. Geometry: 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17  
18 19 20 21 22 23 24 25 26 27 28 29 30 31  
32 33 34 35 36 37 38 39 40 41 42 43 44  
-----

|    | Teacher Initial | Year    |
|----|-----------------|---------|
| K  | _____           | 19____- |
| 1. | _____           | 19____- |
| 2. | _____           | 19____- |
| 3. | _____           | 19____- |

A copy of the directions on the use of the check sheet will be given on the next page for examination and consideration.



USE OF THE MATH CHECK SHEET  
AND BEHAVIORAL OBJECTIVES

1. Each numbered item within each section of the math check sheet has one or more stated behavioral objectives which correspond to the item. A teacher wishing to know the interpretation of Item 1, Section V, Fractional Numerals, on the math check sheet would turn to the corresponding section in the behavioral objectives section.
2. A check sheet should be made out for each pupil. This is the pupil's record of progress in elementary mathematics. It follows the pupil from year to year as a part of his cumulative record. Each successive teacher can learn from it the topics previously introduced and the degree of mastery of each item. Each teacher records progress in the manner indicated by the directions on the check sheet. Entries should be made with pencil, so that they can be changed readily.
3. Each successive teacher should record her initial and the year she used the check sheet with the pupil in whose name it is issued.
4. In those instances where more than one behavioral objective is stated for a given item, that item should not be marked as fully developed until such time as the learner has demonstrated he has achieved all the objectives stated.
5. IMPORTANT--Unless otherwise stated in the behavioral objective, 85 per cent accuracy is considered acceptable.<sup>16</sup>

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<sup>16</sup>Ibid.

Several other school systems also were involved in this approach but since their programs were similiar to the illustration just given, it was believed further examples would be redundant.

The behavioral objectives just discussed could also be classified according to "Bloom's Taxonomy of Educational Objectives" as to their level in the cognitive, manipulative or affective domain. Classification in such a manner could lead to another view of evaluation and subsequently the recording of the evaluation.

The three domains; namely, cognitive, psychomotor and affective are explained by Bloom in the following manner:

The cognitive domain includes those objectives which deal with the recall or recognition of knowledge and the development of intellectual abilities and skills. A second part of the taxonomy is the affective domain. It includes objectives which describe changes in interest, attitude, and values, and the development of appreciations and adequate adjustment. A third domain is the manipulative or motor-skill area. Although the existence of this domain is recognized so little is done in this area in secondary schools that it is omitted from further development in terms of taxonomy of objectives.<sup>17</sup>

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<sup>17</sup>Benjamin S. Bloom and David Krathwohl, Taxonomy of Educational Objectives, David McKay Company, Inc., (1964) p. 23-24.

In the cognitive domain, six major divisions were outlined according to the following hierarchial delineation beginning with the lowest and proceeding to the highest cognitive level: 1. knowledge 2. comprehension 3. application 4. analysis 5. synthesis 6. evaluation.

The more behavioral objectives were used by schools, the more intrigued they became with what type of behavioral objective was being measured. In other words, in those schools discussed earlier in this section which employed behavioral objectives, there was noted a tendency to examine the objectives in terms of their place in the cognitive hierarchy. Were their objectives primarily concerned with knowledge of specifics or recall? Or, were there included among the objectives analysis and synthesis and the other levels of achievement? The result of this examination of objectives was believed eventually to lead to a revision of the emphasis on memory in the evaluation process and this in turn would lead to a revision in the teaching process. The net effect upon grading would be more specificity as to what the nature of the student's progress actually was.

The important aspect of the affective domain was the increased concern of educators with this area. Although the measurement of affective behavior was perceived as lagging

behind the cognitive, the interest of present day society in cultural and ethnic values had served to precipitate widespread interest in work on the formulation of affective behavioral objectives. As far as grading, the involvement in the progression of affective behavior caused many educators to gravitate toward a pass/fail and ungraded approach in order to circumvent the emphasis on cognitive appraisal only, in the other types of marking practices.

It should be mentioned that the establishment of behavioral objectives and the sequential process of completing each objective as shown by the sample check-list of the Douglas School System also implied that students would be allowed to progress at their own rate. In other words; not all students would have achieved the same number of objectives within a specified amount of time; for example, six weeks. Therefore, the system of assigning a letter-grade or pass/fail at the end of a given time period would be in many cases defeating to the program. In essence, this curricular development is a method of individualizing instruction which subsequently requires an individualized report of student progress.

Another change in grading practices which was found to be experimentally successful in some schools and classrooms was

the self-grading approach. Filene who used this approach in his classroom because he felt that grading was forcing him out of the role of teacher and guide and into the role of policeman and judge commented on self-grading in the following manner:

Self-grading fosters a spirit which the traditional procedure tends to stifle. It encourages a student to be autonomous; to make decisions about and for himself. Another outcome of self-grading is the forced reconsideration of the instructor's relationship to his students. Instead of convicting students who are lazy or unmotivated, he will have to consider them as an educational device in their own right.<sup>18</sup>

Blocker, an educational psychologist, predicted two general trends in future education; that of individualized instruction largely by auto-tutorial devices and personality development through group therapy. His predictions were clarified in the following manner:

Two major technological developments will govern the future of education. The first of these is the development called "programmed learning." The materials needed will be organized by highly qualified experts in the psychology of learning, acting in consultation with recognized leaders in the subject matter fields. They will

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<sup>18</sup>Peter G. Filene, "Self-Grading: An Experiment in Learning," The Journal of Higher Education, (Ohio State University Press, June 1969), Vol. XL, 6, pp. 451-458.

be presented by a wide range of ingenious mechanical and audio-visual devices that will permit almost totally individualized instruction.

Once academic subject matter can be presented in ways unparalleled for efficiency and effectiveness, the second great task of education will be recognized as facilitating total human development. The technology involved will be drawn from knowledge of group dynamics and personality development and will most closely resemble activities that would now be called group therapy.<sup>19</sup>

The preceding directions in evaluation and curricular revision suggested the possibility for changes in the grading system.

The final part of the review of literature will be concerned with the impact of the computer on grading systems. A committee composed of college admissions officers, representatives of the Educational Testing Service and the American College Testing Program have made some predictions regarding college admissions in the future which are closely linked with student progress reports. The committee predicts:

There will be a reduction of emphasis on external examinations and increased reliance on the record compiled by the student in his own school. This system will be one in which the information needed not only for instruction and guidance,

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<sup>19</sup>Donald H. Blocker, "Developmental Counseling," The Ronald Press Company, (1966), pp. 123-124.

but also for college admission, is gathered organized and used in the school. More time will be spent matching students - their interests, their ambitions, their talents to the various educational programs and facilities than will be spent on separating good students from the rest of them as was done in the past. All this information will be stored and manipulated by the use of the computer and SAT and ACT entrance exams should not be necessary or else replaced by individualized computer testing.<sup>20</sup>

The previous discussion in this paper has indicated the role of the computer in education will be increasing and will be tied closely to individualized instruction. The impact of the computer can not be fully recognized until one becomes cognizant of just how much the computer age is upon us.

Telephone bills, bank statements, credit ratings and viewing on television the workings of the computer with regard to elections and space flights have made general knowledge about the computer and use of computerized forms available to almost every American. Therefore, the use of computer for evaluation by the teacher or self-evaluation by the pupil as well as grading and self-grading will be integrated even

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<sup>20</sup>Arland Grover, "Emerging Trends in Admissions Data Systems," College and University, (Summer 1968), Vol. XLIII, pp. 426-444.



more into future educational operations. A study has been made by Northern Michigan University to examine the feasibility of using computerized forms with the lower elementary level students and the following results were obtained:

The findings indicated that the major mechanical problem was that children marked too lightly on the mark sense cards. Since this point was not stressed sufficiently in the directions for the use of the cards; it was believed that error could be easily corrected. The only problem believed to prohibit the use of mark sense cards was students making double marks and an error of only 1.2% in this regard was accumulated and this low percentage would not interfere with the proposal for the use of mark sense cards.<sup>21</sup>

#### SUMMARY

The literature surveyed in this chapter was divided into several sections. Institutional responsibility and individual teacher's responsibility in giving grades stressed the fact that grades were felt to be quite powerful as a controlling arm of education and this control was not necessarily beneficial. Many authors found fault with letter grades as being meaningless, inaccurate, and causal factors in anxiety,

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<sup>21</sup>Thomas Culhane and Quentin Stodola, "Use of Mark Sense Cards with Elementary School Children," Educational and Psychological Measurement, (Spring, 1967), Vol. XXVII, pp. 183-185.



tension and worry. Studies were reviewed that found that students were more experimental in their approach to subject matter and more autonomous in their behavior when they no longer had the threat of a letter grade hanging over their head.

The development of curriculum in terms of behavioral objectives was emphasized as a definite direction in education. Also, the growing trend toward individualized instruction was stressed. The need for a student progress report in accordance with these curriculum changes was purported.

The final section of the literature review stressed the impact of the computer on educational practice and policy. It was believed that the use of the computer would make it possible to eliminate outmoded practices of evaluation and record keeping and to replace it with a type of evaluation and record keeping that fostered student self-identity and autonomy and paralleled curricular revision currently in progress.

By virtue of an analysis of the present day grading structure, a review of the new directions in the field of evaluation and a consideration of the impact of the computer on education, it is hoped that a design for a future grading system will be realized.

## CHAPTER III

### PROCEDURES AND FINDINGS

Before giving consideration to the implementation of a new system of evaluation with a corresponding change in grading, it was considered important to determine the points of view and reactions of the educators working in the field of evaluation. In order to determine what these points of view might be, directors of projects in the field of evaluation, made possible by Federal grants, were surveyed by questionnaire.

The answers received to the questions asked these educational personnel were then organized into meaningful data and the data was summarized.

#### Population Description and Sampling Procedure

The population which was studied was composed of educational personnel who were granted Federal Funds to conduct studies of evaluation techniques or innovations.

The individuals were chosen as follows: the research projects and the institution conducting the project were listed in the Education Research Indexed Clearinghouse (ERIC) directory and by referring to the May 1970 copy of the directory, those research projects pertaining to evaluation were

determined. All the directors of these research projects were surveyed by the questionnaire. Therefore, the entire population, not just a sample was used in conducting this study.

#### Method of Collecting Data

Once the population had been selected these people were mailed a questionnaire, with an explanatory cover letter and a stamped, self-addressed envelope. (See Appendix A.) The questionnaires were completed and then returned by mail by July 1970. All people in the population were asked the same questions.

#### Method of Organizing Data

As the completed questionnaires were returned, they were assigned an identification number. They were then coded with the identification number. All data was then listed by identification number on a data report sheet that facilitated determining tabulations and percentages. The tabulations and percentages were done by means of hand calculations in other words without the use of a computer or calculator.

#### Analysis of Data

The answers to all questions were tabulated and the results of this tabulation were done by hand calculation. In

order to better summarize the data, the tabulations were shown as a percent of the total for each question.

### Survey Results

The responses to each question, were tallied with the percent of the total count calculated for each answer. The statistical technique of scaling was not applied to this survey, therefore each question was analyzed separately. It should be noted, however, that the questions were interrelated; thus, positive or negative responses to groups of questions indicate certain common attitudes.

Findings were summarized by category as follows:

#### COMPARISON OF PRACTICAL APPLICATION AND THEORY IN REGARD TO LETTER GRADING

Directors of research projects in the area of evaluation had the following opinions in response to Question One, which stated, Students who are good in theory but poor in practical application should receive letter grades of C or below. Fifteen percent agreed with this statement and eighty-five percent disagreed.

Question Two asked if the respondent agreed or disagreed with this statement: Students who are good in practical application but poor in theory should receive letter grades of C or below. One hundred percent did not favor this idea.

Question Three stated: Letter grades of B or above for good work in either theory or practical application is an acceptable system of grading. Thirty percent agreed with this statement and seventy percent disagreed.

Question Four: All students can do equally well in theory and practical application. None of the respondents felt that they agreed with this idea.

Question Five: Grades should be based fifty percent on theory and fifty percent on practical application. All of the directors indicated that they disagreed with this statement.

#### METHODS OF EVALUATION

Question Six: Students should receive a letter grade of C or below if they fail to do well on written testing even though they produce an acceptable product. None of the respondents agreed with this statement.

Question Seven: Evaluation of a product produced by a student is not as good a measurement of the student's knowledge as written testing. One hundred percent indicated that they did not agree with the idea expressed.

Question Eight: Students will exhibit more creativity in an educational environment where the methods of evaluation are more diversified. All respondents agreed with this pro-

posed direction.

Question Nine: Even if students are allowed to learn at their own pace their motivation can be negatively influenced by confining evaluation to a written method. Seventy percent agreed with this statement and thirty percent disagreed.

Question Ten: If a variety of methods of evaluation are used, the method or methods of evaluation employed with regard to a particular student's achievement, should be indicated by means of a coding system on the student's permanent record. Fifty-seven percent felt that this is the way it should be done and forty-three percent did not agree that the permanent record by means of a coding system should indicate methods of evaluation.

Question Eleven: What methods of evaluation do you prefer, please list. Responses to this question were in a descriptive narrative form and many overlapping responses. The writer combined the overlapping responses and arrived at approximate percentages.

A predominant reply to this question was self-evaluation by the student and approximately seventy percent favored this method of evaluation.

Another frequent response was variety and some specified the variety of methods and included in the methods proposed

were: practical application, projects and tests (objective and essay). Seventy percent indicated in one form or another that they preferred variety in the methods of evaluation used. Close to sixty percent of the respondents stressed that the methods of evaluation should be in accordance with the objectives of instruction or as some respondents concluded objectives of instruction determine the methods of evaluation. Thirty percent mentioned that they preferred evaluation with a minimum of comparison implications.

#### TIME FACTOR IN EVALUATION

Question Twelve stated: Evaluation of practical application, such as a product produced, requires too much of the teacher's time. No respondents agreed with this statement.

Question Thirteen: If a minimum of time is spent by the teacher on evaluation, the students will learn more. Eighty-five percent responded negatively to this statement and fifteen percent responded positively.

Question Fourteen: In a learning situation in which the teacher is primarily a guide and the students work independently, the teacher will have more time to develop and apply a variety of methods of evaluation. All respondents agreed that this projected learning situation would lend itself to a variety of methods of evaluation.



### SUMMARY

Directors of research projects, concerned with techniques and innovations in the field of evaluation, were asked to state their opinions with respect to three aspects of evaluation. The three topics or categories considered were: first, comparison of practical application and theory in regard to letter grading; second, methods of evaluation, and finally the time factor in evaluation.

The results of the survey showed that all the respondents disagreed with the statements that all students can do equally well in theory and practical application and that grades should be based fifty percent on theory and fifty percent on practical application. Most of the educators consulted would not agree to giving letter grades of C or below to students who are good in theory but poor in practical application or vice versa. Only thirty percent agreed that grades of B or above for good work in either theory or practical application is an acceptable system of grading.

With regard to the methods of evaluation, written testing was not condoned by any respondent as a better method than evaluation of a product produced. All the educators consulted believed that a variety of methods of evaluation was desirable for the encouragement of creativity. Seventy percent pre-



ferred self-evaluation and seventy percent listed variety as an important ingredient in evaluation. Some ambiguity about using a coding system to indicate the methods of evaluation on the student's permanent record was indicated by fifty-seven percent favoring the coding system and forty-three percent opposed.

As far as the time factor in evaluation, the respondents indicated a hundred percent agreement with the idea that the teacher, who is a guide and who enables the students to work independently, will have more time to develop and apply a variety of methods of evaluation. Eighty-five percent did not feel that the students learn more when a minimum of time is spent on evaluation. None of the respondents felt that evaluation of practical application required too much of the teacher's time.

## CHAPTER IV

### SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

#### SUMMARY

This paper has dealt with the possibilities for future directions in grading. An attempt has been made to delineate some of the difficulties that have arisen using the present grading systems and also to point out that the flexibility and simplicity in the use of the current grading systems makes them appealing from an administrative standpoint.

The problem, according to many educators, with the traditional letter grading system seemed to be a growing concern that letter grades, in themselves, were not an entirely accurate indication of the student's performance and yet, tended to control the learning process. The relevant needs of the student were often pushed aside in order that the appropriate measurement on the grading scale could be taken. Some educators found it very difficult to determine exactly what was meant by a single letter grade, especially when the follow-up learning activity needed to be determined by the grade given in a prior learning situation. It was also felt that tension and worry over a high or low grade, or between the "A" mark and the "B" mark caused undue concern on the part of

the student to the point where personal development with regard to self-identity and autonomy were ignored as an important part of the educational process.

Curriculum developments that were believed to be significantly influencing the future direction of marking practices were the emphasis on individualized instruction and the trend toward organizing the instructional process in terms of behavioral objectives. The traditional letter grade assigned after a specified length of time such as six weeks was not considered advantageous to either of these developments. To circumvent this problem, some schools did not give letter grades or pass/fail grades, instead, the progress reports consisted of an indication of achievement level in terms of the behavioral objectives completed.

The impact of the computer on grading was mentioned in order to show that any change in marking practices will be affected by the use of computer and in many cases facilitated by the use of the computer. Rather than hang on to an outmoded grading system for the convenience afforded in the administrative realm, a good look at the opportunities for change through the use of the computer should be considered. The predictions regarding transcripts and entrance exams for college admissions in the future were mentioned to show that de-

viations from the present policy structure will be made possible through increased and varied use of the computer.

Much of the literature reviewed indicated a preference for self-evaluation as opposed to the teacher conferring a grade that appeared to have a judgemental connotation rather than a true indication of student progress.

Student progress reports are closely related to the methods of evaluation used and the criteria for evaluation formulated, therefore, it seemed advisable to survey educational personnel working on research with regard to evaluation, in order to ascertain their points of view before steps for change were proposed. The scope of the questionnaire was limited to directors of research projects funded by Federal grants and to the field of evaluation. This group was asked questions that were pertinent to study of methods of evaluation and were to return their questionnaires by July, 1970. A sixty percent return of the questionnaire was received, with a thirty percent request for the results when the study was finished. The data was then tabulated so that they could be analyzed by opinion and summarized. The results were organized around analysis of the results by percentage from the group in agreement or disagreement with the statement proposed.

The findings were generalized as follows:

1. All the respondents felt that all students cannot do equally well in theory and practical application and that grades should not be based fifty percent on theory and fifty percent on practical applications.

2. With regard to the methods of evaluation, written testing was not condoned by any respondent as a better method than evaluation of a product produced.

3. All respondents agreed that a variety of methods of evaluation was desirable for fostering creativity.

4. The majority of respondents favored self-evaluation.

5. Variety was considered a key factor in determining methods of evaluation that should be used according to seventy percent of the respondents.

6. The majority of respondents felt that more time should be spent by the teacher on developing and using a variety of methods of evaluation.

7. Evaluation of practical application was not considered to be too time-consuming by any of the respondents.

### CONCLUSIONS

The writer reached the following conclusions:

1. The grading dilemma according to the literature re-

reviewed centers around, first, the difficulty of interpreting grades. A letter grade or pass/fail grade does not indicate whether the standards used in arriving at the grade were on a national basis or individual basis or what, nor does it indicate which factors, such as recall or synthesis, were used. Furthermore, it does not delineate the level the student has achieved with regard to the content of a course and this is particularly important in terms of determining future learning situations. As a result of the varying interpretation, the grade does not state any information about the student except he is excellent, good, fair, poor or failing. In a sense, this makes the grade meaningless to the student in every regard except getting a mark that looks good on his record and that makes "Wadjaget?" a very important word in the student's vocabulary.

The most regrettable aspect of this type of grading is that the student who is rated C or fair has not been given any direction for future learning experiences. The trend toward a student progress report which consists of a behavioral objectives check sheet as presented in the review of literature is viewed as a way to acknowledge this deficiency and to make an effort to overcome it.

2. A second aspect of the grading dilemma is that the

teacher feels like a judge rather than a guide and this type of structure stifles the development of self-identity and autonomy on the part of the student. The growing interest in self-evaluation as indicated by the literature reviewed and the results of the survey show that a change in this direction appears to offer an answer to this problem in the future. In other words, the waning idea of the teacher as an authority figure is being replaced by the view of the teacher as facilitator of development.

3. The role of the computer should be realized and used to facilitate new types of pupil progress reports, transcripts and so forth in the future approaches to grading.

4. An underlying conflict of ideas regarding student progress reports confronts the reader throughout this paper. Is the true pupil progress report an individualized, self-evaluative, threat-free report or is it a comparative index, competitively designed, pressure oriented report?

5. A variety of methods of evaluation is preferable according to the results of the survey and that written testing does not surpass evaluation of a product produced has been established. However, since written testing is the most frequently used method of evaluation in conjunction with the present grading systems, an expansion in the kinds of methods



could create a foreseeable change in future marking practices.

6. The survey indicated that the behavioral objectives determine the methods of evaluation to be used. The review of literature indicated that if the behavioral objectives were primarily on the cognitive level of recall and the examinations on this cognitive level, the teaching process would foster memorizing. Therefore, it would seem that if higher levels of thinking were desired, the behavioral objectives, the evaluation methods and the pupil progress report should reflect this intent and be congruent in this regard.

#### RECOMMENDATIONS

The following recommendations were submitted by the writer:

1. Compile a well thought out program of instruction, including the students in the development of this program; proceed to outline the curriculum in terms of behavioral objectives.

2. Examine the behavioral objectives in such a way as to determine what type of behavior is being sought. Designate the cognitive and affective level being invoked then re-



evaluate the curriculum. In other words, each objective should be scrutinized as to the level of cognitive or affective behavior being sought.

3. Specify the methods of evaluation and determine if variety is prevalent as well as making sure that the methods of evaluation are congruent with the objectives.

4. Design a check sheet that coincides with the behavioral objectives and projects a report of progress that is individualized.

5. Determine how the program could be adapted to individualized instruction, however, this does not imply that every activity has to be carried out by one individual.

6. Re-examine the methods of evaluation and estimate how much they encourage creativity and how much they contribute to personality development. To insure that these facets are valued, under each objective, indicate a variety of behavior that would satisfactorily indicate that an objective has been achieved. For a quick estimation of variety, check the number of times some form of written testing is stated as the method of evaluation. Since written testing is not necessarily a better method than producing a product, consider this point in your analysis. Enable the students to choose among various methods of evaluation, such as illustration,

problem solving, verbal effectiveness, new designs or group communication. Just as objectives can be largely fostering a low level of cognitive behavior such as memory; a single method of evaluation stereotypes behavior or direct the learning process away from creativity.

7. Explain how self-evaluation will be used in the program and also, co-evaluation between the students and teacher. The students should learn how to evaluate themselves as part of the program. Care should be taken to assert that a true self-evaluation is very definitely not a negative checklist or in other words does not have the traditional connotation of how many questions were marked wrong.

8. Designate the criteria for a student progress report and see that it coincides with the behavioral objectives and methods of evaluation and is in accordance with the first seven recommendations. Organize the form in such a way that it will be practical for administrative purposes and in particular for placement in future learning situations. However, remember the form is recording the program not running the program therefore the teachers and students should never use the form as an excuse for engaging or not engaging in a certain learning activity.

9. Design the form and if possible gain access to the

use of the computer so that the information may be recorded, and manipulated more easily. The form might very well be a mark sense card which can easily be marked with a pencil by the student or the teacher or the student and the teacher. Use an abbreviated method or coding system to list the objectives of the program. Under each objective, list several methods of demonstrating achievement of that objective; an abbreviated form or coding system may also be used here. A pencil mark next to the objective would indicate that it has been completed and a pencil mark next to the method of demonstration would do likewise. If the spirit of a personalized and positively-oriented report card are desired then a certain open-endedness is advocated; a student should not have to complete all objectives using all the methods of demonstration.

If uniformity and conformity are desired, the form could be used this way; namely, all objectives and methods must be marked sequentially; this would still provide a more accurate interpretation than the present grading systems. However, if creativity and individualization are to be valued, then, the form should be capable of various manipulations but still capable of retaining an accurate interpretation of student progress.

As far as assigning a grade there are several approaches that can be taken. First, in its present state the form could be used without grades and this choice would depend on the values and orientation of the members of the particular school. Secondly, a pass/fail grade could be assigned by indicating on the form the minimum number of completed objectives needed to obtain a pass grade. Thirdly, for the assignment of letter grades, a similar procedure could be followed. The letter grades would be listed and next to each the number of completed objectives needed to obtain each of the grades A through F. Assigning letter grades while using this form will still promote competition, however, some definite advantages over the present grading system can be noted. It tends to lessen the vagueness of interpretation that letter grades presently hold. This approach focuses on the objectives rather than on the words good, fair, and so forth. Secondly, even if a specified number of objectives are required the option of varying which objectives are accomplished can be helpful in promoting creativity and individuality. Inherent in this use of the grading system is the implication that the student can choose objectives related to his needs and that the teacher does not have to feel compelled to be the sole determiner of what is best. It

also tends to lessen anxiety and worry because the student has more of an idea of what is expected of him. Finally, by promoting a variety in the methods of evaluation and not forcing each student to demonstrate the accomplishment of the objective in the same way, creativity will be encouraged as well as giving recognition to positive aspects of the student's behavior.

In conclusion, it is hoped that by looking at the grading dilemma, analyzing it and proposing future directions, that the reader has gained a new insight into his own view of grading. The proposal for future marking practices was aligned with the current curricular developments and organized in such a way as to meet the needs of these developments. It is very important in critically evaluating the grading situation that one first lists what he wants to get out of the instructional program. One cannot designate self-identity and autonomy on the part of the students and refuse to consider self-evaluation. One cannot promote creativity not as a haphazard offshoot but as a foremost goal by measuring only recall and using only one method of evaluation. Finally, how a grade is arrived at or used or not used, reflects one's personal and educational philosophy and it was not the purpose of this paper to explore the possibilities for future grading

in hopes of finding a panacea. Rather than searching for a perfect system, it was a search for a more adequate system with educators looking at it differently.

APPENDIX A

COVER LETTER AND QUESTIONNAIRES



COVER LETTER

June 24, 1970

Dear \_\_\_\_\_

As part of a graduate project at Montana State University, the writer is conducting an investigation into the preferences of evaluators regarding criteria and methods of evaluation. Particular emphasis is placed on the extent to which practical application is regarded as a basis for grading. The letter grading system, which awards a grade of A, B, C, D, or F, has been chosen as a functional basis but this is not the important facet under consideration. Frequent reference is made to practical application and product formation and this implies filming and tape-recordings of activities as well as products in the sense of a poem, sculpture, painting, laboratory equipment designed etc.

The results of this investigation will be utilized in developing evaluation programs for student teachers at Montana State University.

Your cooperation in this investigation would be sincerely appreciated. The highest professional ethics will be observed in keeping your responses on this form in strictest confidence. However, in order to make this study a valid one, it is necessary to receive a 90% return of the form. Therefore, would you please sign your name in order that those people who do not respond may be recontacted. Please return the form by Wednesday, July 8, 1970.

If you would like a copy of the results of this investigation when it has been completed, please contact the person below after August 15, 1970 or else enclose an envelope with your name and address.

Thank you for your help.

Sincerely,

Marie Dolente  
126½ South Ninth  
Bozeman, Montana 59715

### EVALUATION QUESTIONNAIRE

PLEASE COMPLETE THIS FORM BY MARKING THE BOX OF YOUR CHOICE NEXT TO EACH OF THE QUESTIONS BELOW. PLEASE RETURN THE COMPLETED FORM IN THE ENCLOSED ENVELOPE BY WEDNESDAY, JULY 8, 1970, TO:

Marie Dolente  
126½ South Ninth,  
Bozeman, Montana 59715

Your Name \_\_\_\_\_

#### COMPARISON OF PRACTICAL APPLICATION AND THEORY IN REGARD TO LETTER GRADING.

Agree    Disagree

- |                          |                          |                                                                                                                                   |
|--------------------------|--------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | 1. Students who are good in theory but poor in practical application should receive letter grades of C or below.                  |
| <input type="checkbox"/> | <input type="checkbox"/> | 2. Students who are good in practical application but poor in theory should receive letter grades of C or below.                  |
| <input type="checkbox"/> | <input type="checkbox"/> | 3. Letter grades of B or above for good work in either theory <u>or</u> practical application is an acceptable system of grading. |
| <input type="checkbox"/> | <input type="checkbox"/> | 4. All students can do equally well in theory and practical application.                                                          |
| <input type="checkbox"/> | <input type="checkbox"/> | 5. Grades should be based 50% on theory and 50% on practical application.                                                         |

#### METHODS OF EVALUATION

- |                          |                          |                                                                                                                                                    |
|--------------------------|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | 6. Students should receive a letter grade of C or below if they fail to do well on written testing even though they produce an acceptable product. |
| <input type="checkbox"/> | <input type="checkbox"/> | 7. Evaluation of a product produced by a student is not as good a measurement of the student's knowledge as written testing.                       |

Agree    Disagree

( )    ( )    8. Students will exhibit more creativity in an educational environment where the methods of evaluation are more diversified.

( )    ( )    9. Even if students are allowed to learn at their own pace their motivation can be negatively influenced by confining evaluation to a written method.

( )    ( )    10. If a variety of methods of evaluation are used, the method or methods of evaluation employed with regard to a particular student's achievement, should be indicated by means of a coding system on the student's permanent record.

11. What methods of evaluation do you prefer, please list:

( Use reverse side. )

TIME FACTOR IN EVALUATION

( )    ( )    12. Evaluation of practical application, such as a product produced, requires too much of the teacher's time.

( )    ( )    13. If a minimum of time is spent by the teacher on evaluation, the students will learn more.

( )    ( )    14. In a learning situation in which the teacher is primarily a guide and the students work independently, the teacher will have more time to develop and apply a variety of methods of evaluation.

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