An evaluation of the teacher education program at Montana State University by graduates of that program
by Ronald Boyd Mattson

A dissertation submitted to the Graduate Faculty in partial fulfillment of the requirements for the degree of DOCTOR OF EDUCATION
Montana State University

Abstract:
The- Problem. The problem for this study was divided into several different parts. These included: (1) the development of a model that would provide guidelines for a continuous evaluation of the undergraduate teacher training programs at Montana State University; (2) the development of a questionnaire that could be used to determine the adequacy of the professional teacher training program; (3) to determine the adequacy of the teacher training program, as perceived by the graduates; and (4) to determine the relative value of the courses in the professional teacher training curriculum as perceived by graduates.

Methods and Procedures. Two questionnaires were designed to obtain information from elementary and secondary teacher graduates concerning such information as sex, age, majors, minors, employment status, grade level at which the respondent last taught, school enrollment, and teaching experience.

Two parts of the questionnaires were devoted to rating program objectives and professional courses. Rating was done on a five-point scale. The questionnaires were checked for content validity and reliability by submitting them to a panel of experts and administering them to 20 elementary and 20 secondary college senior teacher trainees.

The questionnaires were mailed to the members of the 1969 Montana State University College of Education graduating class. This group included 110 elementary teachers and 218 secondary teachers. Response rates for the groups were: 73.5 per cent for elementary teachers and 76.5 per cent for secondary teachers.

Finding and Conclusions. Both elementary and secondary teacher trained graduates believed that for the most part the respective training programs were adequate. Areas in which the respondents felt deficient involved teaching strategies, student evaluation, classroom management, recognition of learning disabilities, and team teaching.

Both elementary and secondary teachers rated the course Educational Psychology in the "Of little value" range.

Recommendations. Elementary and secondary teacher trainees should be given more training in recognizing learning disabilities, in the application of techniques used in individualized instruction, team teaching strategies, and evaluation of student progress. Elementary teachers need more training in classroom management, role playing and simulation. The teacher training program should incorporate more practical experience with theory.

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A dissertation submitted to the Graduate Faculty in partial fulfillment of the requirements for the degree

of

DOCTOR OF EDUCATION

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CHAPTER I

INTRODUCTION

The Montana State University College of Education staff is presently engaged in making preparations for a review of the College's undergraduate teacher education program by the National Council for Accreditation of Teacher Education (NCATE), a voluntary college accrediting agency founded for the expressed purpose of improving teacher education. Although the teacher training program at Montana State University is accredited at the present, NCATE requires that an evaluation be made every ten years. The last evaluation of the Montana State University program was made in 1960. Preparation for the evaluating team entails collecting data and compiling a detailed report for the visitation committee.

NCATE Standards (NCATE) for accreditation are concerned with five major areas of the training program; namely, faculty, curriculum, students, resources and facilities, evaluation, program review, and planning. To meet the Standards, a systematic on-going program for the development of objectives, for improvement, and for long-range planning is necessary. It should be emphasized that "NCATE does not specify the precise courses or credits that one must have to secure accreditation; it formally proclaims a commitment to variation and experiment." (Conant, 1963)

Two areas related to NCATE accreditation in which the college staff has been working, but motivated by a desire for self-improvement, are curriculum studies and determination of goals and purposes.

The first of these was a comprehensive study of the goals and purposes made on a university-wide basis in 1971. Each college prepared statements of their goals and purposes; the results were compiled into one document entitled, "Montana State University: Goals Report" (1970). One expressed goal of the College of Education that was of major concern and related to this study read, "The College should continuously evaluate its product, program, and teaching in an effort to better prepare our teachers--professionally and academically." A significant step toward the achievement of this concern was undertaken in the Fall of 1971, when the secondary and elementary education departments formulated specific written program objectives.

The second related area was the work done by the secondary education staff in the area of curriculum. They held several meetings during the 1970-71 school year to consider major changes in the secondary teacher training curriculum. Changes that were considered and proposed involved nearly all aspects of the curriculum. On several occasions, the staff members were confronted with a need for more information upon which valid decisions could be made.

In the process of preparing for the NCATE evaluation and for curriculum planning, the need for several different methods to determine the effectiveness of the training program and for the recovery of usable information was evident. Without such data, valid decisions were difficult, if not impossible. As a result of these experiences, several staff members indicated a desire to see an organized plan instituted that would make available this type of information. This study was done to aid in supplying a portion of the information that was needed.

Statement of the Problem

The problem for this study was divided into several different parts. These included: (1) the development of a model that would provide guidelines for a systematic and ongoing evaluation of the undergraduate professional teacher training program offered in the Montana State University College of Education; (2) the development of an instrument or questionnaire that could be used as a part of the evaluation model to determine the adequacy of the undergraduate professional teacher training program as perceived by graduates of the program; (3) the determination of the adequacy of the undergraduate teacher training program objectives as perceived by the 1969 College of Education graduates--utilizing the instrument prepared for that purpose; (4) the execution of a survey of those people in the 1969 graduating class who did not elect to teach to determine their reasons for not doing so; and (5) the determination of the relative value of the required courses in the professional curriculum as perceived by the graduates from the teacher training program.

Purpose of the Study

The purpose of this study was to provide information for the staff of the Montana State University College of Education to better enable them to determine what changes, if any, were necessary in the professional teacher training program to adequately prepare its graduates to be effective teachers. In addition, the data to be collected through this study will assist the staff members in supplying the necessary data for the NCATE evaluation team who will visit the campus during the school year 1972-73.

An important objective of any training program, especially in a swiftly changing society such as ours, is a program that is current and responsive to the needs of its graduates. The design and the development of the model for a systematic collection of data from graduates of the teacher training program on an annual basis will help serve this purpose.

General Questions to Be Answered

Answers to four main questions were sought in this study. The first of these was: What system and what instrument would periodically gather valid and usable data from the graduates that could be used in an analysis of Montana State University's teacher training program effectiveness? Secondly, does the required professional education program at Montana State University College of Education meet the needs of the graduates currently engaged in teaching? Thirdly, which professional education courses do the graduates feel are adequate or inadequate; and fourthly, why didn't a number of the graduates elect to enter the teaching ranks as practicing teachers?

General Procedures

The first phase of the study was a survey of the available and pertinent literature. It included a review of periodicals, textbooks, formal studies, unpublished studies, and association reports. Findings indicated that a number of evaluation studies of teacher training programs had been made similar in several respects to the present study. None of the studies reviewed, however, suggested a model for a broad evaluative system for a teacher training program.

Following the review of literature, a questionnaire was constructed to elicit information from the graduate about his educational job preparation, and about each of the required professional courses which he had completed while enrolled at Montana State University. Questions concerning the graduate and his job preparation requested information; such as age, sex, grade level in which the graduate was teaching, major, minor, size of school in which he was teaching or had last taught, and the number of years of teaching experience.

In other sections of the questionnaire, respondents were asked to rate the adequacy of their training of selected knowledge, attitudes, and competencies received at Montana State University. In addition, they were asked to rate courses required as part of their professional teacher training program.

The questionnaire was mailed to all of the 1969 Montana State University graduates who were listed by the Director of Student Teaching and Teacher Certification as being qualified to teach. All completed questionnaires returned were classified and analyzed according to several variables; for example, grade level at which the respondent was teaching, age group, sex, size of school in which the respondent was teaching, majors, and minors.

Limitations

The total population for this study was limited to those people who graduated from Montana State University College of Education in the spring and summer of 1969. The evaluative sections of this study are further limited to that portion of the population that has been actively engaged in full-time teaching during one of the three academic school years since their graduation. All of the teachers meeting the above criteria and teaching in any of the grades kindergarten through twelve were included in the evaluative sections.

That portion of the study that dealt with unemployment and the reasons for unemployment concerned only those persons who did not hold any type of a full-time teaching position during the period since their graduation in 1969, to and including the current academic school year, 1972-73.

Evaluation of the teacher training program is based only on the feedback from the 1969 graduates of the program and the statistics utilized were confined to their responses or information directly relating to them.

Minimum acceptable returns were limited to 70 per cent of the elementary teacher trained graduates and to 70 per cent of the secondary teacher trained graduates from the total population. Unless 100 per cent of the population responded, there was the possibility of some bias. According to Oppenheim (1966), "nonresponse is not a random process; it has its determinants, which vary from survey to survey." He pointed out that the problem could be reduced in severity by using follow-up letters as reminders to encourage higher rates of questionnaire return.

Although the individuals in the population were assured of anonimity and that their responses would be so used as to prevent them from being identified, the possibility existed that the reaction to the questionnaire was somewhat biased. The investigator believed that this was due primarily to the necessity of identification of the questionnaires by number for follow-up purposes. This in the thinking of some of the respondents was not complete anonimity. Also, opinions of graduates concerning knowledges, attitudes, or competencies may have been influenced by the instructor of the course in which that particular attribute was to have been acquired rather than the content.

The questionnaire consisted of two types of questions: a closed question in which the respondent was asked to select one of several alternative replies, and a free response type of question which gave the respondent the opportunity to react in any manner that he wished regarding the program.

The resources and activities for the suggested model developed in this study were selected from those presently available, or those that could be developed within the present financial and personnel capabilities of the College of Education. Sources for this information were administrative personnel, professors, and non-professional employees from the College of Education.

In the fall of 1971, program objectives were formulated by members of the faculties of the elementary and secondary education departments of the College of Education for their respective levels. The objectives were prepared for the professional program as a whole and not for specific courses. These were used as a basis for the development of the questionnaire to collect the data for the study. In several instances during the development of the questions for the questionnaire, it was necessary for the investigator to interpret general objectives in order that specific questions could be formulated. These interpretations were submitted to members of the staff for approval before final use.

Definition of Terms

Professional education course. A course taught in the College of Education and listed in the current Montana State University catalog under the professional education curriculum.

Professional education program. The aggregate of all the professional education courses required to be eligible for teacher certification. Examples are Educational Psychology, Methods, and Tests and Measurements.

Graduate of the teacher training program. Those people who completed the requirements for graduation as a qualified teacher.

Program objectives. The goals that faculties within the College of Education have selected as desirable outcomes of the teacher training program.

Junior high school option. The pattern of selected courses that are prescribed by the College for prospective teachers who wish to teach at the junior high school level or at equivalent grade levels.

Music option in elementary education. The pattern of selected courses that prepare a prospective teacher to specialize in the teaching of music in the elementary school.

K-12. Grades kindergarten through twelve inclusive.

Vertical organization. The aspect of school organization that refers to the movement of students upward from a point of admission to a point of departure. Examples of vertical organization are a school system graded one through twelve or a nongraded system (Goodlad and Rehage, 1962).

Horizontal organization. The aspect of school organization that divides students among available teachers. Examples are homogeneous groups, heterogeneous groups, or departmentalized classrooms (Goodlad and Rehage, 1962).

Self-contained classroom. A classroom which contains pupils, often one grade level, in which all the subject matter is taught by one teacher.

Nongraded classes. An arrangement of pupils in which grade labels are removed from some or all classes (Goodlad and Rehage, 1962).

Team teaching. A horizontal arrangement that combines consideration for children, curriculum, and teacher qualifications.

Multigraded classes. Classes that contain pupils from two or more grades.

Model. The term model as used in this study means a pattern or schemata that represents variables and their relationships in a graphic or outline form.

Evaluation. The process of assigning values to data which has been assembled.

Summary

The College of Education staff members at Montana State University need a variety of data to assist them in retaining NCATE accreditation, to assist them in program evaluation, and to assist them in possible revision of the teacher education curriculum. An important portion of the required data deals with program evaluation and revision and establishment of goals.

This study was designed to provide some of the needed data through collection of feedback from experienced teacher graduates of the College of Education. The system used in the initial data collection was designed to be utilized periodically as a source of information which will enable the staff to make decisions that will keep the teacher training program current.

CHAPTER II

REVIEW OF RELATED LITERATURE

In the years following World War II, particularly during the Sputnik era, teacher training programs were criticized by individuals and groups who doubted the value and effectiveness of the training given prospective teachers by teacher training institutions. Some of the more outspoken critics have been students and graduates of the various programs. Among other things, the critics have said that there was too much duplication, a lack of course content, and many unnecessary and useless courses are required.

Stiles, Barr, Douglas, and Mills (1960) have pointed out that because professional education programs have been subject to so much criticism, "It would seem sensible and desirable that educationalists reexamine many aspects of their programs." They conclude that the evaluation of teacher education programs "is plagued with the tendency of faculty and administrators to rely upon impressions, estimates, and guesses in assessing program strengths."

They go on to say that:

> To teacher educators, the program may seem adequate, but there should be a challenge to the profession to array supporting data in such a manner as to be convincing to others. Mere argumentation and verbalization of frequently repeated claims will not be enough. The logic and the data should be in keeping with the best critical thinking.
>
> It is generally recognized that the data upon which evaluations are made must be valid, reliable, and complete. Criteria against which data are appraised must be carefully defined. Thus, evaluation of programs of teacher education requires systematic plans

> to insure the collection of adequate and reliable data and the definition of reference points that command respect. It must be remembered that the value placed on a program, or aspect of teacher education, must be acceptable to many individuals, including nonprofessionals as well as specialists in the field.

More recently, another educational trend has become very evident—a demand for accountability in education. According to Thomas Giles (1971:255), this new trend will not "wax and wane as did teaching machines, student involvement in governance, and other similar movements." His reasons are: (1) that maintaining quality education and an efficiently managed educational institution are mutually compatible goals, and (2) that the emphasis on accountability has been stimulated by the "publics" education serves. Dr. Stephen Romine in a recent article on "Accreditation and the New Accountability in Higher Education" (1971:257) said that if education is to be held accountable for its product, then it must have improved goal definition at the institutional and classroom levels, and it must place a greater emphasis upon appraisal of the product.

As indicated in the preceding paragraphs, teacher training has been, and still is, the subject of considerable wide spread criticism. To fill the need to establish higher standards and uniformity for the teacher training programs, the American Association of Colleges for Teacher Education (AACTE) was formed in 1948. From that time until 1954, its members worked to develop an effective accrediting association for teacher education in all colleges and universities participating in educating teachers (Joyol, 1963:1-3).

To further implement the purposes of AACTE, representatives from the American Association of Colleges for Teacher Education, the Council of Chief School Officers, the National Association of State Directors of Teacher Education and Certification, and the National Education Association met in November, 1952, to prepare a plan to organize an effective accrediting agency for teacher education programs. The new accrediting agency was named the National Council for Accreditation of Teacher Education (NCATE) and was scheduled to become effective on June 1, 1957.

Since its inception, NCATE has increased its membership and its influence on teacher education to a degree where a majority of the teacher education programs have been or are being influenced to raise their standards to conform to those of NCATE. In their "Standards for the Accreditation of Teacher Education" (1971:1), NCATE lists four major purposes for accreditation of teacher training institutions. They are:

1. To assure the public that particular institutions--those names in the Annual List--offer programs for the preparation of teachers and other professional school personnel that meet the national standards of quality.

2. The ensure that children and youth are served by well-prepared school personnel.

3. To advance the teaching profession through the improvement of preparation programs.

4. To provide a practical basis for reciprocity among the states in certifying professional school personnel.

As noted in Chapter I of this paper, the Montana State University College of Education has made application for full accreditation by NCATE. Two significant conditions for accreditation that the College must achieve are the maintenance of a continuing program of evaluation of its graduates and collection of information to identify areas in the program that need strengthening (NCATE, 1970:12). The fulfillment of these conditions will help to give direction for program development. With the goal of developing a continuous system of evaluation and an instrument to solicit feedback from graduates, the writer has investigated several methods and reviewed several studies that might offer assistance in fulfilling the College of Education's needs. A review of the results of that investigation is presented in the following pages.

Methods of Evaluation

A number of different methods and techniques for evaluation of a teacher training program have been investigated by this writer. Each method varies considerably in the ease of application, in the time involved, in the means of collection of the data, the number of participants with which it can be efficiently used, and in the validity of the data collected. In the following paragraphs, a few of the most common methods will be considered.

Measurement of pupil behavior change. Theoretically, measurement of behavior change in the "final product," the pupil in this case, reflects the effect of the teacher upon the student and indirectly upon the teacher's training (Woodring, 1957:62). Though this is a theoretically valid assumption, in practice there are many difficulties. Too many factors other than the teacher effect are involved in the behavior change, or the lack of pupil behavior change, to be able to attribute any discernible change to a particular teacher's training. Examples of those factors: home and school environment, student personality, cultural conditioning, and the teacher's influence. The effect of these and other factors are highly unpredictable upon pupil behavior.

Direct observation. Another obvious source of information for teacher training evaluation is the observation of the teacher who is engaged in the actual process of teaching in the classroom (Medley and Mitzel, 1963:247). Classroom observation could be done on a one-to-one basis, one observer--one teacher. Such a technique would require well developed evaluative skills on the part of the observer. Medley and Mitzel point out that some researchers consider this process too expensive and time consuming. Another disadvantage listed by researchers is the reluctance of teachers and administrators to permit observers to enter their classrooms and disturb their privacy. Medley and Mitzel feel that most of these objections can be overcome. They contend that when teachers and administrators are convinced of the importance of the study utilizing this technique they are quite willing to cooperate. On the basis of these comments, it would appear that if a large number of evaluations were required, that the observational technique is at a serious disadvantage due to the financial resources, training of the evaluator, and to the time required to collect the data.

Feedback from prospective teachers. A number of studies have been done to evaluate the training program utilizing feedback of the trainee either during the training period, during some phase of it, or at the completion of the training. This method of evaluation has the advantage of having its subjects immediately available and their training recent enough to insure a valid response.

However, if reactions from prospective teachers is the only method used in program evaluation, it has several disadvantages. A major one is that the people from which feedback is sought are not yet experienced enough to fully appreciate the usefulness of their learning in the teaching process (Herbert, 1970:18). A second is the difference that exists in student-teacher experiences from student to student. Often student-teachers do not have the opportunity to apply their skills and knowledges for a variety of reasons. Stagg (1968:224-225) found that many administrators and cooperating teachers from host schools lacked understanding and knowledge of the goals and objectives of the student-teaching program, consequently many of the student-teachers experiences left much to be desired.

Feedback from experienced teachers. A number of authorities feel that broader responsibility needs to be established for teacher education.

Among them, I. James Quillen, former Dean of the School of Education at Stanford University, who stated in an address to the Fourteenth Annual National Conference sponsored by the National Commission on Teacher Education and Professional Standards that, "Teacher education is a joint responsibility of colleges and universities, public schools, and the profession of education (1959:38)." Solon E. Haynes, Chairman of the Department of Secondary Education, and Charles E. Coyne, Dean of Education and Psychology at Missouri Western College, concur with his views in their statement:

> If we are to prepare teachers to perform in the classroom to the extent that their students profit intellectually and socially, what has been the standard program of preparation will have to be changed.
>
> Few teacher education institutions can adequately train teachers without the help from their local elementary and secondary schools (1971:71-2).

They cite E. Brooks Smith's (1968:19-20) statement from the National Education Journal, "The long desired goal of a truly clinical preparation for the professional jobs in education calls for school-university collaboration on a grand scale;" and Kimbal Wiles (1968:262-268), who wrote in the Journal of Teacher Education, "Public school personnel should become effective partners in the teacher education process."

Many teachers who are currently engaged in classroom teaching feel a professional obligation to work cooperatively with colleges and universities to improve the teacher training program; and given the opportunity, they will contribute to that end. Herbert (1970:17) considers this a source from which useful and meaningful data can be obtained to evaluate the teacher training program. These people, he feels, have had the opportunity to apply skills and attitudes that they have acquired during their training and are able to evaluate its effectiveness. Herbert cautions, however, that the number of years experience a teacher has may have an adverse effect upon the validity of the responses. This, he feels, is due primarily to the loss of recall of specific characteristics of their training.

Other difficulties encountered in utilizing data from persons who have graudated from teacher training programs five to ten years previously are the recent changes in the training programs and recent changes in the faculty. Major changes in either of these areas would obviously bias the data used in an evaluation. Another difficulty in utilizing people from this category is the problem in locating a representative sample of the group.

Considering the advantages and limitations of the last two methods of evaluation, it would appear that studies designed to gather information through feedback from its graduates should gather data from people whose experience level ranges from two to five years. If a well designed instrument is used to collect the data, feedback from this source can be useful for evaluative purposes.

Studies Involving Evaluation Through Feedback

Evaluations of teacher training programs utilizing feedback from student teachers, inexperienced teachers, and experienced teachers have been done in a number of colleges and universities during the past few years. Some pertain to elementary programs, others to secondary programs, while still others involve both. Summaries of a representative sample of those studies are reported on the following pages.

First is one done by Thompson Moffit (1967) evaluating the elementary education program at Central Michigan University. It was concerned with two questions:

1. Does the elementary education program at Central Michigan University adequately prepare its students for teaching?
2. Do the opinions concerning programs for elementary education teachers at Central Michigan University change with more experience?

Data for the study was gathered through a questionnaire mailed to a group of prospective teachers, a group of first-year teachers, and a group of experienced teachers who had a background of elementary teacher training at Central Michigan University. The questionnaire included sections dealing with general education, professional education, subject matter background, and classroom teaching areas.

Moffit's population included 699 of the people trained at Central Michigan University. He reported a return of 65 per cent usable responses. After analyzing his data, he drew several significant conclusions. Generally, he found that the respondents in his study considered the elementary teacher training program adequate. Seventy per cent of his population considered general education important, and 60 per cent felt that their professional education was important. Respondents indicated that they gained a greater feeling of adequacy as a result of their directed teaching experiences; i.e., student teaching.

Moffit found an opinion change from the graduating seniors, to the first-year teacher, to the experienced teacher. In general, the seniors rated their training highest, and experienced teachers rated their training lowest. However, he found that the experienced teachers rated theory courses higher than the less experienced groups did.

On the basis of his findings, Moffit recommended that directed teaching experiences be retained in the program, and that special sections of general education courses for prospective elementary teachers be taught. He felt that this was especially important in the areas of music, art, and physical education.

In future evaluations of the teacher training program at Central Michigan University, Moffit recommended that the sample population include the opinions of experienced teachers because their opinions vary significantly from first-year teachers and graduating seniors in relation to theory courses. He further recommended that an evaluation, such as his, be made frequently so that the program could reflect the needs of the teacher practicing his profession in the field.

A second study involving teacher training program evaluation was one done by Richard Harmon (1966) at Long Island University. The stated purpose of his study was, "To measure effectiveness of the teacher education program of Long Island University through evaluation by experienced teachers of its usefulness in accomplishing selected practices." His secondary purpose was to ascertain whether teaching experience or grade-level of the instruction affected evaluations.

His population included 116 teacher alumni with experience ranging from two to fourteen years. He divided this group into three grade level categories and within those three experience levels. Grade levels were divided on a Kindergarten through six, seven through nine, and ten through twelve. Experience levels consisted of people with teaching experience ranging from two through five years, six through ten years, and eleven through fourteen years.

To collect data for his study, he used a questionnaire that directed teachers to rate on a one through five scale the influences of professional education courses upon 31 teacher practices. The seven professional courses used for the study, all required at Long Island University, were "foundation courses": Educational Psychology, History and Philosophy of Education, Current Problems in Education, Child Development or Adolescent Development; and "methods courses" consisting of Methods and Materials in Early and Late Childhood, Methods and

Materials in Teaching Specific Subjects, and Observation and Teaching. Teacher practices were described as those which were customary behavior of the teacher in and outside the classroom and had as their end result the improvement of the learning situation in the classroom. Teacher practices were defined as those that were translated from the college's teacher training program objectives.

After analyzing the data from his questionnaire, Harmon found that:

1. The "most salient factual outcome of this study" was that the teacher education program had little influence on teacher practices.

2. Teachers with two to ten years service credited the program with a greater influence than those with more experience.

3. There was no significant difference of evaluation among the three grade level categories.

4. Two courses entitled: Problems of American Education and History and Philosophy of Education had no discernable influence upon teaching practices.

5. The people in the eleven through fourteen year experience group rated Educational Psychology higher than those at other experience levels.

6. Field experience, student-teaching, was rated as being more influential than other foundation courses.

7. No course exerted more than a moderate influence upon teacher practices.

One of the most comprehensive evaluative studies reviewed by this writer was completed by Ira Hinckley (1967) for the Illinois Teachers College Chicago-North (I.T.C.C.-N.) elementary teacher training program.

The college was founded in 1961 and had been in existence for approximately four years at the time the data was collected for the study. Because of its relatively short existence and the concern of the faculty and administration with the effectiveness of its program, Hinckley stated that he received the encouragement and cooperation of the staff.

Hinckley's statement of the problem was, "To ascertain the status and competency of graduates of I.T.C.C.-N. through data provided by graduates' opinions regarding the adequacy of their preparation and determine the implications of the data for curriculum at I.T.C.C.-N." His population included all the graduates of the college of elementary teacher education who had completed 80 per cent or more of their work at I.T.C.C.-N. At the time of the survey, the institution had graduated three classes of elementary teachers--1963, 1964, and 1965--for a grand total of 498 elementary teachers.

He collected his data through a questionnaire mailed to all graduates. Its content was divided into the following four sections:

1. General information concerning: sex, year graduated, teaching experience, grade levels at which they were teaching, their academic achievement, and the type of school in which they were teaching (high status, main-line, common-man, inner-city, or special schools utilizing Havelock's typology).

2. Sections II and III concerned evaluation of credit hour requirements of thirty-nine required courses and the significance of the required course sequence in developing teacher competence.

3. Section IV dealt with the evaluation of the faculty advisory system and general recommendations for improving teacher education.

4. Section V was an adaptation of the California Statement of Teacher's Competencies, which the graduates used as a basis for self-evaluation of their teaching competencies. This questionnaire was developed by Dr. Evelyn Piper at the University of Oregon (1960).

On the basis of the data collected through his questionnaire, Hinckley was able to reach several conclusions and make a number of recommendations that could be utilized by I.T.C.C.-N. Following are perhaps the most significant of those conclusions and recommendations:

Conclusions

1. A majority of the graduates felt an increase in credit hours was desirable for Curriculum and Instruction in the Elementary School and in Student teaching.
2. Fifty per cent favored a decrease in American English: Structure and Function.
3. More than one-half of the respondents felt they were adequately prepared in ten of the fifteen teacher competencies listed on the questionnaire.
4. Graduates felt the least prepared for using remedial and diagnostic procedures, collecting, and using significant counseling data.

He recommended that:

1. More effort should be made to integrate theory and practice in all courses.
2. A coordinator of laboratory and field experience should be appointed to initiate and conduct an organized program of field experiences.

3. There should be an undergraduate course in Measurement and Evaluation in Public Schools.

4. More instruction was needed to inform students about problems and challenges unique to inner-city and special schools.

5. More adequate preparation in the following competencies:

    a. Diagnostic and remedial procedures
    b. collecting and using significant counseling data
    c. using adequate procedures for evaluating the achievement of the child
    d. using principles of child development and mental hygiene in guiding individuals and groups
    e. helping children to understand and appreciate their cultural heritage.

Hinckley's study was the only one surveyed by this writer that demonstrated a concern with the socio-economic environment in which the teacher worked. Many of the graduates were teaching in main-line, common-man, inner-city, or special schools, where problems may be classed on a continuum from moderate on one hand to severe on the other. The data presented left this writer with the impression that there is a direct correlation between the feeling of adequacy on the part of the teacher and the socio-economic environment in which the teacher works.

Other examples of evaluations utilizing feedback from experienced teachers were two done at the University of Mississippi by Kathleen Pittman (1967) and James Henry (1967). Pittman's study was based on the teacher training program at McNeese State College of Louisiana and Henry's at Old Dominion College at Norfolk, Virginia.

The studies closely paralleled one another in their purposes and method of collecting their data. Essentially, the purpose of both studies was to determine to what extent the graduates were prepared: (1) professionally, (2) subject matter wise, and (3) in general education. Both used a questionnaire to gather their data from graduates of their respective institutions.

Both researchers found that the graduates generally considered their preparation adequate. Henry noted, however, that his population was concerned with the repetition in the professional curriculum at Old Dominion College.

Several studies were reviewed that utilized feedback from the teacher and from the teacher's supervisor or principal. One of these was an evaluation of the elementary teacher education program at Illinois State University done by Peppard (1966). The population included the University's graduates for 1962-1965. Data was collected utilizing an interview technique. Final conclusions indicated that the elementary teacher training program met the needs of the teachers in the classroom.

A second study was an evaluation of a secondary teacher training program done by Robert Appel (1966), while he was at the University of Colorado. His population included graduates from the classes of 1960, 1961, 1962, and 1963. He used a questionnaire that was distributed to teacher graduates and their employing principals to collect his data. The mean evaluation from graduates and principals indicated that they considered the secondary teacher training somewhat above average. Major strengths included a strong program in general education, good quality candidates, and enthusiasm for teaching.

A third evaluation was one by Arthur Engel (1965) of an elementary and secondary program at Huron College at Huron, South Dakota. His population included teachers with three years of teaching experience who had graduated from Huron College between 1961 and 1964. Engel's findings showed that the graduates found their professional education courses were very helpful and that they were adequately prepared to teach. The teacher's administrators indicated that the graduates in the population were above average or superior in the use of vocational knowledge and information and in the use of other educational agencies. Engels recommended that the student teaching period be increased and that duplication of methods courses be eliminated.

A Montana evaluation study was done by Vernon Grosshuesch (1965) utilizing the supervisors of beginning teachers. His population included the graduates of Eastern Montana College for the 1960 through 1962 school years. To evaluate the beginning teachers effectiveness, he collected information from the supervisors about how successful the teachers were personally, professionally, and in classroom procedures. Findings indicated that graduates rated high in their personal qualities. Supervisors rated them as well qualified, well prepared persons who demonstrated a high level of performance in the classroom.

Teachers often criticized the repetition and questioned the value of the courses they have taken during their training. A few even indicated that none of their professional teaching courses, other than practice teaching, helped at all. Responses to a fairly recent survey conducted by Gustave Albrecht (1969) of secondary and junior college teachers in California indicated that teachers felt that the number of professional teaching courses should be reduced, that an alternate training route through an internship should be established, and that credentials should be issued for a specific field.

Several studies concerning teachers and teacher education completed at Montana State University were reviewed. Two of these, one by George Stagg (1968) and the other by Jack McMurchy(1969), contained short sections dealing with the evaluation of the teacher training program using feedback from student-teachers and experienced teachers.

The first study, by Stagg, researched the problems of student-teachers from all the teacher training institutions in the State of Montana, including the private colleges. Stagg reported that in response to the request to assess their academic preparation, 63.1 per cent of the elementary student-teachers reported their preparation as adequate and 12.7 per cent reported it as excellent. When the same question was posed concerning their professional education, 50.0 per cent said they felt that it was adequate, and 8.7 per cent felt that it was excellent.

At the secondary level, the responses to the same questions that were posed to the elementary student-teachers were somewhat different. Stagg found that 41.1 per cent of the secondary student-teachers felt that their academic preparation was excellent and 45.4 per cent felt that it was adequate. In the professional course sequence, 10.5 per cent indicated that they felt that it was excellent and 58.2 per cent thought it was adequate. Stagg summarized the results of the secondary student-teacher reactions by noting that, "Four times as many students believed their academic preparation in their major field was excellent as believed their educational course sequence was excellent preparation."

McMurchy's (1969) study was designed to determine what was happening to Montana State University College of Education four-year graduates and how those graduates thought their preparation could have been improved. He selected as his population the people from the graduating classes of 1966, 1967, and 1968. That portion of his study dealing with the graduate's opinions concerning their professional training program was limited in scope. It was confined to a "most valuable" and "least valuable" evaluation of courses, and to recommendations for changes of the program.

To determine the opinion of the graduates concerning their preparation for teaching, McMurchy asked the following questions:

> Which education course do you feel was most valuable based on your experience?

Which education course was least valuable?

What changes do you recommend in the professional program at Montana State University?

Returns from the above questions were considered on the basis of elementary teachers and secondary teachers in separate categories.

In response to the above questions, 37 per cent of the elementary teachers considered Teaching of Reading the most valuable. Next in terms of importance was Subject Methods followed closely by Student Teaching with 25 per cent and 23 per cent, respectively.

Of the secondary teachers, 30 per cent considered Student Teaching as the most valuable course followed by Principles of Secondary Education with 25 per cent and Subject Methods with 18 per cent.

Rated as their least valuable courses by elementary teachers were: Educational Psychology by 41 per cent, teaching of Language Arts by 15 per cent, and School Curriculum by 9 per cent. Fifty-eight per cent of the secondary teachers listed Educational Psychology as the least valuable. Six per cent said that none of the professional courses had any value.

In considering the above data, attention should be called to the distinct possibility that many graduates who felt a bias toward a particular instructor may have been rating their instructor rather than the value of a specific course.

Models for Evaluation

In surveying the literature concerning the development of models for evaluation in education, little information could be located that had a direct application to teacher training programs. Barro (1969) had this to say, "The methodology of 'effectiveness' modeling is relatively undeveloped both in education and in other fields."

Erik Lindman (1967), Professor of Educational Administration, University of California at Los Angeles, has pointed out that the requirement and need for a framework for evaluation educational innovation is as follows:

> Clearly, the evaluation process must be more than a comparison of achievement-test scores, it must recognize the many dimensions of education. During this period of ferment in education, we need, above all, an innovation in process by which educational practices and innovations are evaluated . . . . Each decision maker needs information relevant to the choices he must make.
>
> A review and evaluation system which provides continuously for each decision maker the evidence he needs to make his decision would do much to improve education. To some extent such a process functions now, but major improvements are possible and sorely needed.

Troyer and Pace (1944) state that certain tasks are involved in the process of evaluation. Among them, the formulation of objectives, identification of the sources from which evidence can be obtained, development of methods for obtaining the evidence, and an interpretation of the results gathered in terms of the goals or objectives. Completion of the tasks as outlined and arranging those tasks in a systematic manner such that the results can be interpreted in light of the goals and objectives of the program suggests a model for evaluation.

Summary

Generally, the survey of different methods of evaluation involving graduates of the program indicates that the most practical means of gathering data is through feedback from the graduates. If this technique is used, several researchers advise that experienced teachers be included in the sample.

A questionnaire was used in all of the studies examined by this researcher. These varied from one of a general rating type to one that asked for specific information concerning specific courses. Considered with the responses from the questionnaire in several of the studies were such factors as grade-point average, Graduate Record Examination scores, age, and as previously mentioned, teaching experience. In addition, one of the studies queried administrators about the teaching ability and success of the teacher involved in the study.

The type of information elicited from the majority of the questionnaires helped determine how the respondents valued a particular course. However, questions concerning their reasons for valuing a course in that manner were not answered. For example, Educational Psychology was selected as the least valuable course in the professional curriculum at Montana State University by both elementary and secondary teachers who participated in the study. To gather meaningful data that could be helpful in developing a curriculum that fulfilled the needs of its graduates, it would appear that the questionnaire used should solicit information about specific objectives of each course or of the program.

Several of the studies recommended that similar studies be done on a continuing basis. Considering these recommendations and the variety of methods for evaluation, it appears that a systematic plan or model can be designed for an effective evaluation of a teacher-training program.

CHAPTER III

PROCEDURES

This study had a dual purpose; the first, to develop an instrument and a systematic program to evaluate annually the undergraduate professional curriculum required at the Montana State University College of Education. A second purpose was to determine the adequacy of the present professional teacher-training curriculum as perceived by the graduates of the college utilizing the instrument developed for the systematic evaluation.

This chapter describes the approaches used for developing the instrument, the system used in collecting the data for evaluation, and the population and sampling procedures for the study. Methods used to organize the data and analyze the data are also outlined.

Population

The population for this study consisted of those graduates of the Montana State University College of Education, who were members of the 1969 Spring and Summer graduating classes; and who, according to the records in the Student-Teaching and Certification Office, qualified for a Montana Teaching Certificate. University records indicated that the two graduating classes included 110 persons who received degrees in elementary teacher education and 218 persons who received degrees in secondary teacher education, or a grand total of 328. Samples for the study included the entire population as defined above.

Categories

Due to differences in the job and in the curriculum for their preparation, the members of the sample were divided into three major categories: (1) elementary school teachers; (2) junior high school teachers; and (3) secondary school teachers. Training for junior high school was either elementary teacher training or secondary teacher training. Frequently, junior high school teachers were recruited from both groups; consequently, in this study, it was possible to find people in this classification with either elementary or secondary teacher training.

Within each major classification (that is, elementary teacher, junior high school teacher, or secondary school teacher), additional categories were used. Among elementary teachers, the categories were either: the grade level at which the person was teaching; or the number of years of teaching experience. At the junior high school level, the categories were: teaching major; teaching minor; area of subject matter concentration for those who have elementary teacher training; grade level; and number of years of teaching experience. For secondary teachers, categories include: teaching major; teaching minor; subject or subjects the person is teaching; and number of years of teaching experience.

Method of Collecting Data

Two different questionnaires were used to collect the data from the persons included in this study. Generally, formats for both were similar. They differed only in that the content of the questions posed was appropriate for the level of the person's training; i.e., elementary or secondary.

The questionnaires were divided into essentially three different parts. The first requested general information such as sex, age, employment, grade level at which respondent taught, and type and size of school. The second part involved an evaluative response to the adequacy or inadequacy of selected objectives of the University's teacher-training curriculum as he perceived them, in relation to his effectiveness for his teaching position.

The statements of objectives were those that had been formulated by the secondary and elementary education staff members as program goals. To achieve specific statements which could be interpreted easily by respondents, it was necessary in some cases to translate the more general program objectives into several specific ones. Staff members aided the researcher where this was done and gave their approval to the final result.

Responses to the second and third part of the questionnaire were recorded on a five-point Likert-type scale (1932) extending from a highly adequate type of rating to a highly inadequate type of rating.

The third section of the questionnaire requested the respondents to rate required and elective professional education courses that constituted the professional education programs at Montana State University as outlined in the Montana State University Bulletin (1968). Again, due to variation in the teacher-training professional curriculums, differences existed between the secondary teacher and the elementary teacher questionnaires. For the most part, this variation consisted of differences in the methods courses directed toward appropriate training for elementary teachers and secondary school teachers. In addition, the secondary professional curriculum permitted two electives, whereas the elementary professional curriculum allowed none within the professional course block.

To assure the investigator of maximum reliability and content validity of the questionnaire, several steps were taken. Content validity of the items in the questionnaire, and the questionnaire as a whole, was determined as suggested by Sax (1968) and Downie and Heath (1965). This is, a rough draft of the questionnaire was submitted to a group of "experts," in this instance four College of Education professors, to rate the extent to which each item and the questionnaire appeared to measure what was intended. This procedure was followed on four separate occasions, or until the group felt that the instrument was valid for the purpose for which it was designed.

When these steps had been completed, 100 copies of the revised and edited questionnaire were prepared by mimeographing for use in determining reliability of the instrument. The test-retest method was used to achieve this objective. With this technique, the instrument to be tested for reliability was administered to a pilot group of people, whose characteristics are similar in most respects to those for which the instrument is to be used; then, at a later date, the same instrument was administered to the same individuals. Scores were computed for each individual; a Pearson product-moment correlation coefficient was then computed between the two sets of scores (Downie and Heath, 1965). Those portions of the questionnaire used in this study, Part II and Part III, for which a reliability check was necessary, lent themselves to such an approach. According to Sax (1968), the Test-Retest technique was applicable for scales similar to those used in this questionnaire.

After having made the preparations outlined above, one group of 20 elementary education students and one group of 20 secondary education students who had completed their student teaching were asked to respond to the questionnaires. The elementary teacher questionnaire and the secondary teacher questionnaires were given twice to the appropriate groups in a classroom situation with ten days intervening between each administration. For the second administration of the questionnaire, three students from the elementary group and two students from the secondary group were absent, leaving 17 and 18 students, respectively, in each of the pilot groups. In addition to responding to the questionnaire items, the pilot groups of students were asked to identify items that they felt were ambiguous and needed clarification.

The two sets of responses to the questionnaires were punched on punch cards and a computer program prepared to determine the Pearson product-moment correlation for Part II and Part III scores for both the elementary and the secondary instruments. The program with the data on the punch cards was run on the University computer. For the elementary questionnaire, Part II, the computer printout indicated a Pearson product-moment correlation coefficient of 0.90, and for Part III, 0.90. For the secondary questionnaire, Part II, the coefficient was 0.92, and for Part III, 0.80. Minor alterations in directions were then made, and the finalized questionnaires (Appendices A and B, pages 135 through 146 were multilithed.

A cover letter to accompany the questionnaires was prepared and submitted for critiquing to the four professors utilized in validating the questionnaire. From the suggestions received and the original letter, a final copy was prepared and multilithed (Appendix C, page 147.

To determine the residence and mailing address of individuals of the study sample, a list of all the graduates from the 1969 spring and summer quarter graduation rolls was developed and compared with Montana State University Alumni Office files. From the Alumni Office files, a list of the addresses for all living 1969 College of Education graduates was compiled.

On March 13, 1972, a questionnaire appropriate to the area of the individuals' teacher preparation, a self-addressed envelope and a copy of the cover letter were mailed to all the members of the study population at the addresses from the compiled mailing list. By March 31, a return of 68 per cent of the elementary portion of the population and 60 per cent of the secondary portion had responded. To achieve the pre-set return level of 70 per cent, another questionnaire, a self-addressed envelope and a follow-up letter (Appendix D, page 149) were mailed on April 5 to those members of the population who had not responded. The goal of 0.70 per cent return was reached for both elementary and secondary groups by April 19.

To gather information concerning data that could be used in the development of a systematic program or model for evaluating the teacher training program, informal interviews were conducted with department heads, professors, and non-professional staff members from the College of Education. Several sources of accessible data for such a purpose were suggested.

Method of Organizing Data

The data collected from the sample's members was organized according to several different variables. Major classifications were elementary and secondary school teachers. Within each of these classifications, the data was arranged to correspond to the three major divisions of the questionnaire used to collect the data for the study.

The first division included items such as sex, age, major field of study, minor field of study, grade level at which the respondent last taught, subjects last taught (for departmentalized schools), number of years experience, and the size of school in which the respondent last taught. The second division was rating of the effectiveness of teacher training program objectives; and the final division was a rating of required courses in the teacher training program curriculum.

For the purpose of discussion and analysis frequency distribution tables with means and standard deviations were developed for those parts of division one of the questionnaire that lent themselves to such a treatment. Division two and three were both presented in the same manner. To reduce the number of variables with which this researcher had to contend, the data from Part II of the questionnaire was subjected to a principal component factor analysis. Factor analysis is a process which groups the related variables in a test or questionnaire, identifies constructs, and permits the reduction of statistical computations.

Additional comments concerning the teacher training program were solicited from questionnaire respondents. Summaries of these statements were compiled and were presented in the form of tables with the frequency with which each occurred. These tables are presented in Chapter IV, pages 46 through 116 of this dissertation.

Analysis of Data

Both a descriptive and a statistical approach were used to analyze and present the data from this study. Frequency distribution tables, percentages, and narration were used in the analysis and presentation of the collected data.

To limit the number of variables and to aid in the statistical analysis, the data in Part II of the questionnaire (that section dealing with the rating of knowledges, attitudes, and competencies), a factor analysis was performed upon the ratings assigned by the respondents. The Montana State University computer services were utilized to perform the tasks involved with this process.

After the separate factors had been identified for the elementary and the secondary teacher respondents, scores for each individual were compiled for each factor. To test the relationship between the variables within the categories of sex, age, grade level at which the respondent last taught, teaching experience, size of school and teaching major (secondary respondents only); null hypotheses of no difference among the means were formulated. An analysis of variance was used to perform this test.

Following are the null hypotheses that were formulated and tested:

Elementary hypotheses:

1. There is no significant difference among the means for the six factors between female and male respondents.

2. There is no significant difference among the means for the six factors for the different age groups.

3. There is no significant difference among the means for the six factors for the different grade levels at which the individual last taught.

4. There is no significant difference among the means for the six factors for the different levels of experience.

5. There is no significant difference among the means for the six factors for the sizes of school in which the individual last taught.

Secondary hypotheses:

1. There is no significant difference among the means for the ten factors between males and females.

2. There is no significant difference among the means for the ten factors for the different age groups.

3. There is no significant difference among the means for the ten factors for the first listed majors of the individuals.

4. There is no significant difference among the means for the ten factors for the different grade levels at which the individual last taught.

5. There is no significant difference among the means for the ten factors for the different levels of experience.

6. There is no significant difference among the means for the ten factors for the different sizes of schools.

Summary

The 1969 graduates from the Montana State University College of Education who were engaged in teaching during any one of the school terms 1969-1970, 1970-1971, or 1971-1972 were asked to evaluate the professional education curriculum objectives in terms of its adequacy for performing their function as teachers. The data gathered was analyzed according to the type of school in which the person last taught, the grade level at which the person last taught, the major and minor subject matter concentration, and the number of years of teaching experience of the person.

CHAPTER IV

ANALYSIS OF DATA

This study was concerned with several problems, among them: (1) the development of an instrument to collect evaluative type feedback from graduates of the Montana State University teacher-training program; (2) the use of the instrument to determine the adequacy of the professional teacher-training program at Montana State University as perceived by the 1969 graduates of the program; and (3) the collection of information concerning those graduates in the population who did not enter the teaching field.

To achieve these purposes, the questionnaire was developed as outlined in Chapter III and mailed to the population of the study which was composed of two major groups; i.e., elementary trained and secondary trained people.

The population of the elementary trained portion consisted of 110 persons. The total number of returns from the questionnaires mailed to this group was 81, or a 73.5 per cent response. Of these, 79 were useable and two unuseable. Five of the questionnaires sent were returned to the sender because of incorrect addresses.

Two hundred nineteen persons were listed on the 1969 spring and summer graduation bulletins as being secondary teacher-trained graduates from Montana State University. Between the time of the graduation exercises and the initiation of the study, one of them had died, leaving a total of 218 persons in that group. Of the questionnaires mailed to these people, 165 responses were received. This was approximately 76.5 per cent of the secondary segment of the population. One hundred fifty-eight of these were useable and seven unuseable. Ten were returned by postal officials because of incorrect addresses. Table 1 is a summary of the information concerning the responses to the questionnaire mailed to the graduates of the teacher training program.

TABLE 1. SUMMARY OF THE RETURNS OF THE QUESTIONNAIRES

	Elementary	Secondary
Questionnaires mailed	110	218
Number responding	81	165
Per cent responding	73.5	76.5
Number useable	79	158
Number unuseable	2	7

As noted earlier in this dissertation, two questionnaires were prepared; one for elementary teacher-trained persons and one for secondary teacher-trained persons. Questions posed varied slightly between the two questionnaires in order that each would be relevant to the teacher-preparation level of the respondent. It was divided into three sections. The first dealt with such general information as sex, age, employment, status, educational preparation, grade level at which the respondent last taught, type and size of school, and the teaching experience of the respondent. The second part requested the respondent to evaluate selected objectives of Montana State University's teacher training program as he perceived them in relation to their effectiveness to his teaching activities. In the third section, the respondent was asked to rate required professional education courses. Respondents who had no teaching experience were asked to answer the first seven questions in section one and to leave sections two and three blank.

In addition to the questionnaire sections requesting general information and ratings, respondents were asked to make any additional comments concerning the teacher-training program that they wished. In this chapter, Chapter IV, the findings from the questionnaires were presented by teacher-preparation level and in the same topical order as the questionnaire.

Elementary Teacher General Information

Seventy-five persons, or nearly 95 per cent of the elementary respondents, indicated that they were female as opposed to four, approximately five per cent, who indicated that they were male. Of the total group, 60 respondents (75.9 per cent) indicated that they were in the 21 to 25 year old age group, seven (8.9 per cent) in the 26 to 30 year age group, one (1.3 per cent) in the 36 to 40 year age group, and six (7.6 per cent) in the 41 year and over age group.

The respondents' replies to questions concerning their employment during the school terms 1969 through 1972 were summarized in Table 2. A review of the table reveals that at no time during the three year period after the respondents for this study had graduated were there more than 80 per cent of them employed as full-time teachers. Also, beginning with the year 1969, the percentage of respondents employed as full-time teachers decreased by 6.3 per cent and 7.6 per cent, respectively, for the next two years.

TABLE 2. SUMMARY OF THE EMPLOYMENT STATUS OF SEVENTY-NINE ELEMENTARY TEACHER RESPONDENTS FOR THREE SELECTED YEARS

School year	Employed		Unemployed	
	Number	Per cent	Number	Per cent
1969-1970	63	79.7	16	20.3
1970-1971	58	73.4	21	26.6
1971-1972	52	65.8	27	34.2

Data compiled from the questionnaire concerning total teaching experience of the elementary teachers in this study indicated 19.1 per cent had one year experience, 11.8 per cent had two years, 51.5 per cent had three years, and 17.6 per cent had more than three. Prior to 1965, a degree was not required to become certified in the State of

Montana as an elementary teacher. Legislative enactment in January, 1965, (Harriet Miller, 1965) required those teachers who did not have a Life Certificate or a degree to obtain a Bachelors degree or file a plan of intent to qualify for one before a new certificate would be issued. Several of the teachers included in this study who had more than three years of teaching experience had been affected by this enactment.

The Montana State University College of Education offered six curriculum options in which elementary teacher education students could be trained to teach. When asked to select the option in which they had been trained from the list of six, 73 respondents (94.8 per cent) selected the Elementary Education Option, three respondents (3.9 per cent) selected the Junior High Option, and one respondent (1.3 per cent) selected the Music Option in Elementary Education. Two respondents failed to indicate the option in which they were trained to teach. None of the respondents indicated that their area of preparation was in one of the three remaining options of Physical Education and Health, K-12; Art, K-12; and Music, K-12.

Of the 79 people responding to the elementary teacher questionnaire, 11 failed to enter the teaching field as a full-time teacher during the period covered by this study. Seven stated that they had married and decided not to teach. Two entered the military service and two gave "Other" as a reason but failed to be specific.

Table 3 summarizes the grade level at which the respondents indicated they were teaching or at which they had taught last.

TABLE 3. GRADE LEVELS AT WHICH ELEMENTARY RESPONDENTS LAST TAUGHT

Grade level	Number	Per cent
Kindergarten	7	10.3
Grades 1-3	32	47.1
Grades 4-6	22	32.2
Grades 1-8	1	1.5
Nongraded	1	1.5
Other	5	7.5
Totals	68	100.1

Of the five listed under "Other," three specified that they had taught a combined class of third and fourth grades, one specified a "Follow Through Program" and one a "remedial program." No grade levels or age groups were listed for the last two categories. An analysis of the table indicates that nearly 90 per cent of the respondents taught in classes from kindergarten through grade six and none taught at the junior high school level.

The replies of the respondents to the questions concerning horizontal and vertical organizational pattern of their classes is summarized in Table 4.

TABLE 4. VERTICAL AND HORIZONTAL ORGANIZATIONAL PATTERN OF THE CLASSES IN WHICH THE ELEMENTARY RESPONDENTS LAST TAUGHT

Vertical organization		Horizontal organization	
Graded	79.1%	Self-contained classroom	79.4%
Nongraded	13.4%	Departmentalized	10.3%
Multigraded	7.5%	Team teaching	5.9%
		Other	4.4%

Slightly more than 79 per cent indicated that they were teaching or had taught last in a graded school, 13.4 per cent in a nongraded school, and 7.5 per cent in a multigraded school. When the same group was asked at which grade level they were teaching or had last taught, nearly 90 per cent noted that they had taught in grades K-6, and only 1.5 per cent taught in a nongraded system. The reason for this discrepancy was not immediately obvious.

In response to the question seeking information concerning the horizontal organization of their classes, the majority of the respondents, 79.4 per cent, said they taught in a self-contained classroom;

while 10.3 per cent said they taught departmentalized classes, and 5.9 per cent team taught. The remaining 4.4 per cent, three persons, gave different answers. One stated that she "had an assistant part of the time and had parent help" and that the plan was "modeled after the University of North Dakota Plan." Another stated that the horizontal organization plan for her class was "a flexible schedule" and the third person answered "nongraded."

The last item of the general information section of the questionnaire requested data about the total enrollment of the school system in which the respondent was currently employed or had been last employed. Directions given on the questionnaire for this particular item specified that the total enrollment should include all schools, elementary and secondary. Following in Table 5 is a summary of their responses.

TABLE 5. ENROLLMENTS OF THE SCHOOL SYSTEMS IN WHICH THE ELEMENTARY TRAINED RESPONDENTS WERE LAST EMPLOYED

Enrollment	Per cent	Enrollment	Per cent
100 or fewer pupils	9.1	501-1,000 pupils	15.1
101-200 pupils	10.6	1,001-1,800 pupils	7.6
201-500 pupils	15.2	Over 1,800 pupils	42.4

An examination of the table reveals that 42.4 per cent of the respondents taught in school systems of "Over 1,800 pupils," a large school system by Montana standards. Fifty per cent taught in relatively small schools, enrollments of 1,000 and under.

Elementary Teacher Ratings of Selected Characteristics

In this section of the questionnaire, respondents who were or who had been full-time teachers were asked to rate the adequacy of 51 selected knowledges, attitudes, and competencies as they perceived them in relation to their own effectiveness as a teacher. The knowledges, attitudes, and competencies were those that the University Elementary Education staff deemed important characteristics for a graduate of the program to possess. Rating of the characteristics was done on a five-point Likert (1932) type scale extending from one extreme with a "Very Inadequate" classification and a numerical rating of five to the other extreme with a "Very Adequate" classification and a numerical rating of one. Two techniques were used to consider the data from the ratings. The first was a frequency distribution and the second a factor analysis. Each of these is discussed in the following paragraphs.

Frequency distributions of graduate ratings. Frequency distributions of the ratings by the 68 respondents were compiled and the means and standard deviations computed. Table 6, pages 56 through 63, lists the 51 characteristics with per cent distributions, means, and standard deviations.

An inspection of the mean ratings for the 51 characteristics of this section (Knowledges, attitudes, and competencies), reveals that 36 had numerical means less than 3.00, and 15 had numerical means greater than 3.00 on a scale of which the midpoint of the rating scale was considered to be 3.00. Standard deviations for the ratings ranged from a maximum of 1.20 to a minimum of 0.71.

Further analysis of the table shows that for 31 of the characteristics, more than 50 per cent of the respondents rated them as "Adequate" or "Very adequate." Of these 31 characteristics, six were rated by 80 per cent of the respondents as being "Adequate" or "Very adequate."

For those 15 characteristics with means of less than 3.00, 12 were rated by 45 per cent or more of the respondents as being "Inadequate" or "Very inadequate." Generally, these characteristics included activities involving teaching strategies, classroom management, planning of remedial activities, evaluative type activities, and recognition of learning disabilities.

Factor analysis for elementary teacher ratings. This particular section of the elementary questionnaire involved what appeared to be 51 separate and distinct variables (Knowledges, attitudes, and competencies).

TABLE 6. DISTRIBUTION OF ELEMENTARY TEACHER RATINGS CONCERNING THE ADEQUACY OF PREPARATION RECEIVED IN SELECTED PROFESSIONAL TRAINING PROGRAM OBJECTIVES

Knowledges, attitudes, and competencies	Very adequate 1	Adequate 2	Uncertain 3	Inadequate 4	Very inadequate 5	Mean	Standard deviation
Competencies needed to effectively teach art	11.8%	50.0%	11.8%	22.1%	4.4%	2.57	1.09
Competencies needed to effectively teach music	20.6	61.8	8.8	7.4	1.5	2.07	0.85
Competencies needed to effectively teach language arts	20.6	51.5	11.8	16.2	0.0	2.24	0.96
Competencies needed to effectively teach mathematics	13.2	50.0	13.2	16.2	7.4	2.54	1.14
Competencies needed to effectively teach physical education	20.6	61.8	10.3	7.4	0.0	2.04	0.78
Competencies needed to effectively teach reading	32.4	39.7	11.8	11.8	4.4	2.16	1.14
Competencies needed to effectively teach science	7.4	44.1	19.1	26.5	2.9	2.73	1.03

Table 6 (continued)

Knowledges, attitudes, and competencies	Very adequate 1	Adequate 2	Uncertain 3	Inadequate 4	Very inadequate 5	Mean	Standard deviation
Competencies needed to effectively teach social science	14.7	48.5	17.6	16.2	2.9	2.44	1.02
Skill in managing classroom discipline	7.4	29.4	16.2	33.8	13.2	3.16	1.20
Skill in managing classroom routine	7.4	38.2	20.6	25.0	8.8	2.89	1.13
Skill in classroom time management	4.4	27.9	22.1	33.8	11.8	3.20	1.11
Skill in managing classroom freedom	2.9	26.5	23.5	32.4	14.7	3.29	1.10
Competency in interpreting cumulative records	1.5	35.3	14.7	35.3	13.2	3.24	1.12
An understanding and philosophy of grading	4.4	44.1	20.6	20.6	10.3	2.88	1.11
Skill in utilizing the teaching strategy of role playing	4.4	36.8	23.5	23.5	11.8	3.01	1.12

Table 6 (continued)

Knowledges, attitudes, and competencies	Very adequate 1	Adequate 2	Uncertain 3	Inadequate 4	Very inadequate 5	Mean	Standard deviation
Skill in utilizing the teaching strategy of simulation	4.4	26.5	35.3	25.0	8.8	3.07	1.03
Skill in utilizing the teaching strategy of discussion	5.9	47.1	25.0	16.2	5.9	2.69	1.01
Skill in utilizing the teaching strategy of discovery	8.8	50.0	17.6	22.1	1.5	2.57	0.98
Skill in utilizing the teaching strategy of inquiry	5.9	51.5	16.2	23.5	2.9	2.66	1.00
Competencies in preparation of instructional media	20.6	67.6	5.9	5.9	0.0	1.97	0.71
Competency in applying media technology to instruction	14.7	57.4	20.6	7.4	0.0	2.20	0.73
A general education knowledge that is broad and current	19.1	67.6	4.4	8.8	0.0	2.02	0.77

Table 6 (continued)

Knowledges, attitudes, and competencies	Very adequate 1	Adequate 2	Uncertain 3	Inadequate 4	Very inadequate 5	Mean	Standard deviation
Sensitive and aware of current educational and social issues	11.8	44.1	19.1	22.1	2.9	2.60	1.05
Effective communication skills	8.8	64.7	20.6	4.4	1.5	2.25	0.74
Competency in applying instructional strategies appropriate to large groups	5.9	44.1	27.9	20.6	1.5	2.67	0.92
Competency in applying instructional strategies appropriate to small groups	8.8	60.3	14.7	16.2	0.0	2.38	0.86
Competency in applying instructional strategies appropriate to individualized instruction	4.4	29.4	14.7	38.2	13.2	3.26	1.15
Competency in applying instructional strategies appropriate to a team teaching approach	2.9	13.2	23.5	42.6	17.6	3.58	1.02

Table 6 (continued)

Knowledges, attitudes, and competencies	Very adequate 1	Adequate 2	Uncertain 3	Inadequate 4	Very inadequate 5	Mean	Standard deviation
An appreciation of the need for continuing educational and professional development	33.8	52.9	5.9	7.4	0.0	1.86	0.83
Competency in effectively teaching the aesthetic areas of the curriculum	4.4	55.9	23.5	16.2	0.0	2.51	0.82
An understanding of the importance of teacher-student confidences	25.0	57.4	7.4	10.3	0.0	2.03	0.86
Knowledge concerning the purposes of professional teacher organizations	14.7	55.9	11.8	14.7	2.9	2.35	1.00
Knowledge of the school laws that affect teaching	14.7	54.4	5.9	20.6	4.4	2.45	1.11
Knowledge of the effect of school policy on teaching	11.8	41.2	11.8	32.4	2.9	2.74	1.13
Skill in recognizing the opportunities and limitations for modification of individual differences	7.4	45.6	13.2	30.9	2.9	2.76	1.07

Table 6 (continued)

Knowledges, attitudes, and competencies	Very adequate 1	Adequate 2	Uncertain 3	Inadequate 4	Very inadequate 5	Mean	Standard deviation
Concern for the pupil as a human being	41.2	54.4	2.9	2.9	0.0	1.64	0.62
Competency in construction of effective teacher-made tests	5.9	48.5	16.2	19.1	10.3	2.79	1.14
Skill in interpreting and analyzing test results for diagnostic and evaluative purposes	1.5	48.5	25.0	17.6	7.4	2.81	0.99
Competency in planning educational experiences which meet selected objectives	2.9	55.9	29.4	7.4	4.4	2.54	0.85
Knowledge of the teacher's professional code of ethics	22.1	55.9	11.8	7.4	2.9	2.13	0.94
A knowledge of the effect of school administrative procedures upon teaching	5.9	38.2	17.6	32.4	5.9	2.94	1.09

Table 6 (continued)

Knowledges, attitudes, and competencies	Very adequate 1	Adequate 2	Uncertain 3	Inadequate 4	Very inadequate 5	Mean	Standard deviation
Skill in formulating obtainable objectives for and with children which can be evaluated for teaching the skills, knowledges, and attitudes necessary to function in society	5.9	48.5	23.5	20.6	1.5	2.63	0.93
The skill to plan meaningful and supplementary and remedial experiences for those students who have not achieved the formulated objectives	4.4	35.3	16.2	35.3	8.8	3.08	1.11
Enthusiasm for learning and the ability to instill this enthusiasm in their pupils	20.6	60.3	17.6	0.0	1.5	2.01	0.72
Skill in recognizing emotional learning disabilities	4.4	19.1	19.1	48.5	8.8	3.38	1.03
Skill in recognizing mental learning disabilities	2.9	20.6	16.2	48.5	11.8	3.46	1.04

Table 6 (continued)

Knowledges, attitudes, and competencies	Very adequate 1	Adequate 2	Uncertain 3	Inadequate 4	Very inadequate 5	Mean	Standard deviation
Skill in recognizing physical learning disabilities	2.9	30.9	20.6	33.8	11.8	3.21	1.10
Skill in recognizing cultural learning disabilities	1.5	29.4	13.2	45.6	10.3	3.34	1.06
Knowledge of teaching strategies used in non-graded schools	0.0	11.8	19.1	50.0	19.1	3.76	0.90
Knowledge of teaching strategies used in multi-graded schools	1.5	25.0	19.1	41.2	13.2	3.40	1.05

Rather than perform all the statistical computations necessary to complete the tests for significant difference for the 51 variables, a factor analysis was computed for the data. In effect, this combined those that were related and therefore could be treated as a single variable.

Fred N. Kerlinger (1965) said that, "Factor analysis is a method for determining the number and nature of the underlying variables among a large number of measures. It thus limits the number of variables with which a scientist must cope." This process helps the researcher to locate and identify fundamental properties underlying tests, in this case ratings of characteristics.

A factor is conceived to be a construct, a hypothetical entity that underlies tests or measures. According to Kerlinger (1965), "whatever construct or constructs are chosen to epitomize the factor should express the communality running through the factor."

The factor analysis was run on the University computer and factors with their variable loadings extracted until an eigen value of one was achieved. An eigen value of one was selected on the basis of recommendations made by Edwards (1970), who said, "Another principle that is often followed is to extract factors until an eigen value is obtained that is less than 1.00." Following this principle, the data was entered in the computer and processed. This produced six factors for the elementary teacher data. From the computer printout, Tables 7 through 12, pages 66 through 72 were prepared. The column entitled

"Item" identifies the variables by its assigned questionnaire number. The variables (Knowledges, attitudes, and competencies) are those characteristics that were rated by the participants in the study. The column entitled "Loading" lists a number which gives the numerical relationship between a specific variable and the factor. This number is a coefficient of correlation. The variables are arranged by loading value beginning with the highest value and descending to the lowest value. The higher the value, the greater the relationship of the specific variable to the construct of which it is a part.

When a factor analysis is done, the researcher usually attempts to identify the construct (factor) formed by the variables. He often finds that it is difficult to assign a title to the construct, especially when it contains a great number of variables. When a construct is named it is often quite arbitrary and at the discretion of the researcher. The six factors extracted from the elementary teacher's ratings were titled and are presented on the following pages.

Factor I, Table 7, page 66, contained several variables that had similarities. Among them was student evaluation, teaching strategies, general education, planning, and subject matter competencies. When all these variables were considered, it appeared that a name such as "Foundations, Current Trends, and Theories" would be inclusive enough to incorporate all variables and be descriptive of the factor as a whole.

TABLE 7. ELEMENTARY FACTOR I--FOUNDATIONS, CURRENT TRENDS, AND THEORIES

Item	Knowledge, attitudes, and competencies	Loading
36	Sensitive and aware of current educational and social issues	.69
50	Competency in constructing effective teacher-made tests	.67
27	An understanding and philosophy of grading	.60
29	Skill in utilizing the teaching strategy of simulation	.60
28	Skill in utilizing the teaching strategy of role playing	.55
51	Skill in interpreting and analyzing test results for diagnostic and evaluative purposes	.53
53	Competency in planning educational experiences which meet selected objectives	.48
35	A general education knowledge that is broad and current	.47
33	Competencies in preparation of instructional media	.46
34	Competency in applying media technology to instruction	.45
52	Competency in continuously evaluating student progress through observation	.44
56	Skill in formulating obtainable objectives for and with children which can be evaluated for teaching the skills, knowledges, and attitudes necessary to function in society	.38
30	Skill in utilizing the teaching strategy of discussion	.35
17	Competencies needed to effectively teach mathematics	.35
60	Skill in recognizing mental learning disabilities	.31
41	Competency in applying instructional strategies appropriate to a team teaching approach	.31
21	Competencies needed to effectively teach social science	.31
32	Skill in utilizing the teaching strategy of inquiry	.31
43	Competency in effectively teaching the aesthetic areas of the curriculum	.30

Elementary Factor II contains characteristics that relate to law, administrative procedures, policy and professional concerns. On the basis of these observations, it appeared that an appropriate classification might be "Legal and Administrative Processes of Schools."

TABLE 8. ELEMENTARY FACTOR II--LEGAL AND ADMINISTRATIVE PROCESSES OF SCHOOLS

Item	Knowledge, attitudes, and competencies	Loading
46	Knowledge of the school laws that affect teaching	.81
47	Knowledge of the effect of school policy on teaching	.77
55	A knowledge of the effect of school administrative procedures upon teaching	.65
45	Knowledge concerning the purposes of professional teacher organizations	.65
54	Knowledge of the teacher's professional code of ethics	.65
51	Skill in interpreting and analyzing test results for diagnostic and evaluative purposes	.44
26	Competency in interpreting cumulative records	.40
34	Competency in applying media technology to instruction	.38
17	Competencies needed to effectively teach mathematics	.34
37	Effective communication skills	.32

In Table 9, Elementary Factor III, five of the variables were directly related to aesthetic areas of the curriculum, and the other two that dealt with physical education and professional teacher organizations could be indirectly related to this area. Considering these factors, the name "Methodologies and Strategies for Teaching Aesthetic Areas of the Curriculum" was given Factor III.

TABLE 9. ELEMENTARY FACTOR III--METHODOLOGIES AND STRATEGIES FOR TEACHING AESTHETIC AREAS OF THE CURRICULUM

Item	Knowledges, attitudes, and competencies	Loading
15	Competencies needed to effectively teach music	.75
52	Competency in continuously evaluating student progress through observation	.44
53	Competency in planning educational experiences which meet selected objectives	.42
18	Competencies needed to effectively teach physical education	.42
45	Knowledge concerning the purposes of professional teacher organizations	.39
14	Competencies needed to effectively teach art	.35
43	Competency in effectively teaching the aesthetic areas of the curriculum	.35

Every variable of Factor IV, Table 10, is related in some way to achieving and maintaining a classroom environment where maximum learning can take place. For this reason, the name "Creating and Maintaining a Classroom Environment Favorable to Learning" was assigned to it.

TABLE 10. ELEMENTARY FACTOR IV--CREATING AND MAINTAINING A CLASSROOM ENVIRONMENT FAVORABLE TO LEARNING

Item	Knowledges, attitudes, and competencies	Loading
24	Skill in classroom time management	.84
26	Competency in interpreting cumulative records	.64
22	Skill in managing classroom discipline	.59
41	Competency in applying instructional strategies appropriate to a team teaching approach	.56
40	Competency in applying instructional strategies appropriate to individualized instruction	.55
37	Effective communication skills	.50
23	Skill in managing classroom routine	.49
39	Competency in applying instructional strategies appropriate to small groups	.48
25	Skill in managing classroom freedom	.47
16	Competencies needed to effectively teach language arts	.44
27	An understanding and philosophy of grading	.43
55	A knowledge of the effect of school administrative procedures upon teaching	.39

Table 10 (continued)

Item	Knowledges, attitudes, and competencies	Loading
53	Competency in planning educational experiences which meet selected objectives	.39
28	Skill in utilizing the teaching strategy of role playing	.38
20	Competencies needed to effectively teach science	.37
34	Competency in applying media technology to instruction	.37
38	Competency in applying instructional strategies appropriate to large groups	.36
47	Knowledge of the effect of school policy on teaching	.33
31	Skill in utilizing the teaching strategy of discovery	.33
21	Competencies needed to effectively teach social science	.33
33	Competencies in preparation of instructional media	.32
56	Skill in formulating obtainable objectives for and with children which can be evaluated for teaching the skills, knowledges and attitudes necessary to function in society	.32
29	Skill in utilizing the teaching strategy of simulation	.31
52	Competency in continuously evaluating student progress through observation	.31
30	Skill in utilizing the teaching strategy of discussion	.30

The variables of Factor V, Table 11, page 71, fall into three areas: (1) professional, (2) student, and (3) teaching strategies. After considering all three areas, it appeared that all tended to have a student orientation. Consequently, the name "Student-teacher Interpersonal Skills and Relations" was assigned to it.

TABLE 11. ELEMENTARY FACTOR V--STUDENT-TEACHER INTER-PERSONAL SKILLS AND RELATIONS

Item	Knowledges, attitudes, and competencies	Loading
54	Knowledge of the teacher's professional code of ethics	.73
44	An understanding of the importance of teacher-student confidences	.65
49	Concern for the pupil as a human being	.60
58	Enthusiasm for learning and the ability to instill this enthusiasm in their pupils	.56
48	Skill in recognizing the opportunities and limitations for modification of individual differences	.45
42	An appreciation of the need for continuing educational and professional development	.41
56	Skill in formulating obtainable objectives for and with children which can be evaluated for teaching the skills, knowledges, and attitudes necessary to function in society	.38
27	An understanding and philosophy of grading	.35
41	Competency in applying instructional strategies appropriate to a team teaching approach	.35
64	Knowledge of teaching strategies used in multigraded schools	.34
53	Competency in planning educational experiences which meet selected objectives	.32
40	Competency in applying instructional strategies appropriate to individualized instruction	.31
63	Knowledge of teaching strategies used in nongraded schools	.30

Factor IV, Table 12, variables dealt mainly with characteristics that tended to enhance and promote the educational and professional development of the teacher. Therefore, the title "Professional and Educational Development" was applied to this factor.

TABLE 12. ELEMENTARY FACTOR VI--PROFESSIONAL AND EDUCATIONAL DEVELOPMENT

Item	Knowledges, attitudes, and competencies	Loading
42	An appreciation of the need for continuing educational and professional development	.64
43	Competency in effectively teaching and aesthetic areas of the curriculum	.58
20	Competencies needed to effectively teach science	.47
45	Knowledge concerning the purposes of professional teacher organizations	.42
64	Knowledge of teaching strategies used in multigraded schools	.40
14	Competencies needed to effectively teach art	.35
37	Effective communication skills	.35
62	Skill in recognizing cultural learning disabilities	.32
63	Knowledge of teaching strategies used in nongraded schools	.32

After the six factors had been identified from the elementary teacher's ratings, scores were computed for each individual for each factor much like those usually computed for a subject matter test. Then utilizing these factor scores and an analysis of variance technique null hypotheses of no difference among the means of the factors for several categories were tested. The null hypotheses considered for testing were those formulated and enumerated on page 44 of Chapter III of this dissertation.

Three of the five hypotheses proposed were actually tested. Hypothesis number one: "There is no significant difference among the means of the six factors for female and male respondents," was not tested because the male category contained too few cases for the researcher to provide meaningful results. There were 66 females and two males in this portion of the study population.

Hypothesis number two: "There is no significant difference among the means of the six factors for the different age groups," presented the same problem. The age group category 21 to 25 years contained 53 cases. The rest of the responses were distributed among four of the age groups with none of the four groups containing a greater frequency than five responses. This was considered by the researcher as being too few to provide meaningful comparisons between the age groups.

The other three hypotheses were:

3. There is no significant difference among the means of the six factors for the different grade levels at which the individuals last taught.

4. There is no significant difference among the means of the six factors for the different levels of experience.

5. There is no significant difference among the means of the six factors for the size of school in which the individual last taught.

The above three hypotheses were tested using an analysis of variance and an F test with a level of significance for rejection at the five per cent level. All computations were made with the University computer.

The F ratio for hypothesis number three was .160, for number four .436, and for number five .348. An F table (Downie and Heath, 1965) listed values at the five per cent level of significance as 5.05, 3.33, and 3.33, respectively. Since none of the F ratios obtained exceeded those listed in the table, the three null hypotheses were accepted.

Elementary Teacher Course Ratings

Sixteen professional education courses were required during the two years covered by this study for the elementary teacher-training program at the Montana State University College of Education. Respondents to the questionnaire mailed to persons included in this study were asked to indicate the value of each course as they perceived it as preparation for the effective performance of their teaching duties. Rating was done on a five-point Likert (1932) scale progressing from a rating "Of no value" with a numerical score of five to a rating of "Very valuable" with a numerical score of one. The scale was similar to the one used for rating of objectives in Part II of the questionnaire.

The ratings were compiled and distributions, means, and standard deviations computed. These were then organized into Table 13, pages 76 and 77. An examination of Table 13 indicates that the courses entitled Orientation and Educational Psychology received mean ratings of 3.10 and 3.31, respectively, which places them in the rating range "Of little value." General Psychology received a mean rating of 2.78 and Tests and Measurements a mean rating of 2.48. The 12 remaining courses were rated as valuable or very valuable.

When the respondents were asked if they had taken all their professional education courses at Montana State University, 76.5 per cent said that they had. The rest, 23.5 per cent, said they had not taken them all at Montana State University.

Comments Made by Elementary Teachers

The final item on the questionnaire gave the respondents the opportunity to make additional comments concerning the teacher-training program. Many of them took advantage of the opportunity and included suggestions and remarks that they thought might prove helpful to the

TABLE 13. DISTRIBUTION OF ELEMENTARY TEACHER RATINGS CONCERNING THE VALUE OF REQUIRED PROFESSIONAL EDUCATION COURSES AS PREPARATION FOR EFFECTIVE PERFORMANCE OF TEACHING DUTIES

Professional education course title	Very valuable 1	Valuable 2	Uncertain 3	Of little value 4	Of no value 5	Mean	Standard deviation
General Psychology	8.8%	47.1%	11.8%	22.1%	10.3%	2.78	1.19
Orientation	4.4	33.8	17.6	26.5	17.6	3.19	1.21
Child Development	42.6	38.2	7.4	10.3	1.5	1.90	1.02
Educational Psychology	19.1	17.6	10.3	19.1	33.8	3.31	1.56
Teaching of Reading	72.1	17.6	4.4	4.4	1.5	1.46	0.89
Teaching of Language Arts	57.4	26.5	5.9	7.4	2.9	1.72	1.13
Teaching of Social Studies	50.0	25.0	10.3	7.4	7.4	1.97	1.25
Teaching of Elementary Science	42.6	30.9	5.9	16.2	4.4	2.08	1.24
Teaching of Art	54.4	29.4	7.4	7.4	7.4	1.72	0.99
Teaching of Arithmetic	48.5	26.5	8.8	8.8	7.4	2.00	1.26
Teaching of Elementary Music	52.9	35.3	2.9	8.8	0.0	1.68	0.90
Teaching of Elementary Physical Education	55.9	29.4	8.8	4.4	1.5	1.66	0.92

Table 13 (continued)

Professional education	Very valuable 1	Valuable 2	Uncertain 3	Of little value 4	Of no value 5	Mean	Standard deviation
Student Teaching	77.9	14.7	4.4	2.9	0.0	1.32	0.70
Tests and Measurements	25.0	23.5	33.8	13.2	4.4	2.48	1.14
Post Student-Teaching Seminar	25.3	23.5	38.2	2.9	0.0	2.09	0.92
Audio Visual Education	54.4	29.9	14.7	2.9	0.0	1.66	0.84

teacher training program at Montana State University and to the study. Their statements were compiled into a representative list with the frequency with which each statement occurred in Table 14, pages 79 through 81. An inspection of Table 14 shows that the comment that occurred with the greatest frequency, 14 times, was, "The future teacher should get out more and work with kids and do a lot more observing (and not just during student teaching." Related to this comment was one made by one person who said, "I have heard that they have a paraprofessional program at Montana State University now where prospective teachers get the opportunity to work with children. This is good." Another comment occurring 10 times, somewhat related to the one above, was, "The prospective teacher needs more practical training rather than so much theory in education courses."

Five persons expressed concern about the length of the student teaching experience. They felt that it was too short. The next most important concern in terms of frequency was the need for training in the teaching of the bright student and those with learning disabilities.

Secondary Teacher General Information

In reply to the questionnaire item concerning the sex of the secondary trained respondent, 88 (55.7 per cent) of the respondents reported that they were female and 70 (44.3 per cent) reported that they were male. The ratio of male to female was more nearly equal in

TABLE 14. COMMENTS MADE BY ELEMENTARY TEACHERS CONCERNING THE TEACHER TRAINING PROGRAM

	Comment	Frequency
1.	The student teaching experience is too short.	5
2.	There were too few opportunities to work with live students.	3
3.	It would be helpful for students to start a file of useable materials for bulletin boards, games, rainy day activities, etc.	1
4.	The future teacher should get out more and work with kids and do a lot more observing (and not just during student teaching).	14
5.	M.S.U. (Montana State University) requires a fantastic amount of training in relation to Florida colleges. I am thankful that we had such a broad range of training.	1
6.	Possibly more math should be required, like algebra.	1
7.	Being in a school system that has teachers from all states, I find that their courses covered more realistic materials and concepts.	1
8.	Our education taught how to teach average children but not the bright, emotionally disturbed, slow learner, etc.	4
9.	MSU instructors were inadequate.	3
10.	I think the teacher training program at M.S.U. is very good, but nothing beats actually working with children to train a teacher well.	1
11.	Student teaching should come before you take methods courses--they are more meaningful after student teaching.	1
12.	The prospective teacher needs more practical training rather than so much theory in education courses.	10

Table 14 (continued)

	Comment	Frequency
13.	Graduates needed more preparation for nongraded school systems.	1
14.	Art training at M.S.U. was weak.	1
15.	Science, arithmetic, and social studies teacher preparation was inadequate at M.S.U.	3
16.	Much of the material taught is not applicable.	1
17.	Student teachers should be left alone in the classroom more often to assume responsibility for the class	1
18.	More emphasis is needed on training to evaluate individual students--not compared with other students.	1
19.	The teacher training program needs revision--up-dated.	1
20.	I feel the department at Montana State, as a whole, is doing a fine job preparing young people for the world of teaching.	1
21.	Teachers need a complete course in classroom control tactics.	1
22.	I feel that M.S.U. was especially weak in the areas of reading and arithmetic.	1
23.	I learned most in those courses where we went into the classroom.	1
24.	Most of my inadequacies seem to fall in the category of meeting children's needs--activities, games, and individual projects of educational value.	1
25.	The most worthwhile experience of my education major was student teaching.	3
26.	Professors should have more knowledge of the actual classroom situation instead of teaching from textbooks.	1

Table 14 (continued)

	Comment	Frequency
27.	I should like to state that in all truth the majority of the classroom time spent in professional classes at M.S.U. could have been better spent elsewhere.	1
28.	I found myself unprepared when I started to teach and still feel inadequate in some areas.	2
29.	I never did learn how to select good children's books. This skill is very necessary.	1
30.	The teacher needs to know more about public relations.	1
31.	The prospective teacher needs to spend more time in class on problem solving and actual situations rather than worthless notebooks.	1
32.	Student teachers should begin their experience on the opening day of the host school.	1
33.	This survey is a good idea. It serves two purposes: (1) teacher training program evaluation, and (2) self-evaluation.	2
34.	All teachers should have some work with special education, even though there are special education classes, we need to know how to identify these children.	1
35.	Graduates of M.S.U. need training in behavior modification.	1
36.	The program should give more training in reading.	3
37.	The graduates need a course involving child development of school age children--not one to six age group.	1
38.	The continuing education courses I have taken from M.S.U. have been much more adequate and valuable to me than the courses taken in residence.	1

the secondary trained teacher group than in the elementary trained group. The elementary group reported 95 per cent female and five per cent male by comparison.

Of the 158 secondary respondents, 122 (77.2 per cent) reported that their age fell within the 21 to 25 year age group, 31 (19.6 per cent) in the 26 to 30 age group, four (2.5 per cent) in the 31 to 35 age group, one (0.6 per cent) in the 36 to 40 age group, and none in the 41 and over age group. Much of the difference in the age distribution between the elementary and secondary groups may be attributable to the 1965 Montana Legislature which enacted new provisions pertaining to teacher certification requirements. Affected most by this legislation were elementary teachers who had been teaching with two years of college training and had returned to college to further their work toward a bachelor's degree.

The respondents were asked whether they were employed as a full-time teacher during the three consecutive years beginning with the 1969 school term. Their replies were summarized and presented in Table 15 (page 83). An examination of Table 15 indicates that like the elementary participants in this study the number of respondents employed was inversely proportional to the number of years since their graduation. However, for the elementary group, the increase in unemployment averaged about seven per cent, as opposed to approximately 4.5 per cent for the secondary group. This writer feels that this was due to the high percentage of young women in the elementary population who often marry during their early twenties.

TABLE 15. SUMMARY OF THE EMPLOYMENT STATUS OF ONE HUNDRED FIFTY-EIGHT SECONDARY TEACHER RESPONDENTS

School year	Employed		Unemployed	
	Number	Per cent	Number	Per cent
1969-1970	89	56.3	69	43.7
1970-1971	82	51.9	76	48.1
1971-1972	77	48.7	81	51.3

When the respondents were asked how many years of public or private school teaching experience they had, 14.7 per cent replied one year, 26.5 per cent replied two, 50.0 per cent replied three, and 8.8 per cent replied more than three. On the basis of these data, it appears that 8.8 per cent of the respondents had taught previously without a degree or had a degree in another field and were teaching with a provisional certificate and returned to become certified as a teacher.

Item number six on the questionnaire requested the respondents to list their major(s) and their minor(s). One hundred fifty-eight listed a major, 17 listed a second major, and 128 listed a minor. Among the 27 different first listed majors, 69.7 per cent of the respondents listed a major in one of ten fields. Those ten fields included Agriculture Education (5.7 per cent), Physical Education and Health (11.4 per cent), English (8.9 per cent), History (7.6 per cent), Mathematics (8.3 per cent), Art (6.4 per cent), Home Economics (14.0 per cent), and Industrial Arts (6.4 per cent). The remaining 30.3 per cent of the respondents first listed majors were fairly evenly distributed among the other 19 fields.

Thirty different minor subject matter fields of study were listed by 128 of the respondents. The distribution of respondents who had minors among the 30 fields was fairly even, with the exception of History. Thirty persons (23.5 per cent) claimed a minor in History. The next highest percentage was 5.5 per cent and occurred for several of the minors.

For a variety of reasons, 56 of the secondary respondents stated that they had failed or had chosen not to enter the teaching field as a full-time teacher during the period covered by this study. A comparison of their stated reasons and their first listed major was made. The results are presented in Table 16, pages 85 and 86.

An inspection of Table 16 discloses that 36 of the 56 respondents who did not teach during the period covered by this study had majors in one of four fields. Those fields were Physical Education with nine people, History with seven, Business Education with eight, Home Economics with seven, and Industrial Arts with five.

TABLE 16. DISTRIBUTION OF THE RESPONSES ACCORDING TO MAJOR FIELD FOR PREPARATION OF FIFTY-SIX INDIVIDUALS WHO DID NOT ENTER THE TEACHING FIELD

Major	Reason given for not entering teaching						Sex	
	Couldn't find a teaching position	Limited to geographical area	Married: did not seek a position	Entered another occupation	Called into military service	Other	Female	Male
Agriculture					1	2		3
Physical Education	1	3	1		2	2	4	5
Social Science					1			1
General Science		1					1	
Chemistry					1			1
Economics						1		1
English				1		1	1	1
Mathematics	1				1		1	1
Russian	1				1			2
Spanish		1						1
Art	1					1	2	
Distributive Education						1	1	

Table 16 (continued)

Major	Reason given for not entering teaching						Sex	
	Couldn't find a teaching position	Limited to geographical area	Married: did not seek a position	Entered another occupation	Called into military service	Other	Female	Male
History	3				3	1	1	6
Commerce, Broad Field	1		1			1	2	1
Business Education		2	1	2		2	6	1
Home Economics		2	1	1		3	7	
Industrial Arts		1		2	1	1		5
Not Listed				1			1	
Totals	8	10	4	7	11	16	27	29

Of the reasons given for not entering the teaching field, "Other" occurred the greatest number of times followed by "Called into the military service," "Limited to a geographical area," "Couldn't find a teaching position," and "Entered another occupation," in that order. A review of the questionnaire showed that five of the non-teaching classified as "Other" had returned to college, three did not enter teaching due to family reasons, and two business education majors were working in business to gain experience to be used in a teaching career at a later date.

Under the heading "Couldn't find a teaching position," no particular relationship between the major field of preparation and the reason for not entering teaching was obvious. History majors had the greatest number who could not find a job, but the number was fairly insignificant.

Table 17, page 88, summarizes the grade level at which the respondents stated that they were teaching or had taught last.

An examination of the data presented in Table 17 shows that the largest portion, 45.1 per cent, of the respondents taught at the senior high school level. The next largest group, 16.7 per cent, at the junior high school level. These levels were followed by "Other" and grades seven and eight with 11.8 per cent and 10.8 per cent, respectively. Some of the grade levels reported under "Other" were college, elementary, Title I Program, and extension service teaching.

TABLE 17. GRADE LEVEL AT WHICH SECONDARY RESPONDENTS LAST TAUGHT

Grade Level	Number	Per cent
Grades 7 and 8	11	10.8
Junior high school, grades 7-9	17	16.7
Senior high school, grades 9-12	29	28.4
Senior high school, grades 10-12	17	16.7
Other	12	11.8

Respondents replies to "In which subject areas are you teaching or in which did you last teach?" indicated that they were teaching for the most part in either their major or minor area of preparation, with the exception of three. These said they were teaching at the elementary level, Title I Program, or college level.

From the replies received concerning the vertical and horizontal organization of their classes, it appears that the majority of the respondents taught in traditionally organized schools. For the vertical organization pattern, 70.3 per cent stated they taught classes in a graded school, 12.8 per cent taught in nongraded classes, and 16.8 per cent taught multigraded classes. The graded and multigraded vertical organization is a common pattern for school systems.

Reports for horizontal organization of class groups were departmentalized 91.0 per cent, team teaching 3.0 per cent, and other types 6.0 per cent. Only three of the respondents who selected "Other" as a horizontal organizational pattern named what they felt was the pattern. One wrote "individualized," another "country school," and the third "elective."

To gain an idea of the size of school in which graduates were employed, they were asked to report the size of school system in which they were presently employed or in which they were last employed. Table 18 summarizes the results of the participants' reports.

TABLE 18. ENROLLMENTS OF THE SCHOOL SYSTEM IN WHICH THE SECONDARY RESPONDENTS WERE LAST EMPLOYED

Enrollment	Per cent	Enrollment	Per cent
100 or fewer pupils	5.9	501-1,000 pupils	18.8
101-200 pupils	7.9	1,001-1,800 pupils	17.8
200-500 pupils	18.8	Over 1,800 pupils	30.7

A survey of the table reveals that 51.4 per cent of the respondents taught in school systems with enrollments of 1,000 pupils or under while 17.8 per cent taught in school systems of 1,001 to 1,800 pupils. The rest of the secondary graduates taught in school systems with enrollments over 1,800 pupils.

Secondary Teacher Rating of Selected Characteristics

The faculty of the Montana State University College of Education had a set of formulated goals and objectives for their teacher-training program. Incorporated in these goals and objectives were 48 selected knowledges, attitudes, and competencies that the Faculty believed were desirable attributes for each graduate to possess. In the questionnaires for this study, the second section entitled, Part II--Knowledges, attitudes, and competency rating, was devoted to rating the adequacy of the preparation that the graduate had received in specific areas.

Rating of each characteristic was done on a five-point Likert (1932) scale identical to the one used for the similar section of the elementary questionnaire. The scale extended from one extreme with a "Very inadequate" classification and a numerical rating of five to the other extreme with a "Very adequate" rating and a numerical rating of one. As in the similar elementary section, the same two techniques, frequency distributions and factor analysis, were used to consider the data. The data for 102 secondary graduates is presented and discussed in the following pages.

Frequency distributions of graduates ratings. Frequency distributions of the ratings by the 102 respondents were compiled and the means and standard deviations computed. Table 19, pages 91 thru 97.

TABLE 19. DISTRIBUTION OF SECONDARY TEACHER RATINGS CONCERNING THE ADEQUACY OF PREPARATION RECEIVED IN SELECTED PROFESSIONAL TRAINING PROGRAM OBJECTIVES

Knowledges, attitudes, and competencies	Very adequate 1	Adequate 2	Uncertain 3	Inadequate 4	Very inadequate 5	Mean	Standard deviation
Knowledges of a teacher's professional code of ethics	13.7%	70.6%	11.8%	2.0%	2.0%	2.07	0.71
Knowledge of the purposes of professional organizations	4.9	52.0	25.5	11.8	5.9	2.62	0.96
An appreciation of the need for continuing educational & professional development	19.6	58.8	16.7	3.9	1.0	2.08	0.78
Effective communication skills	7.8	63.7	16.7	9.8	2.0	2.34	0.84
Understanding of the importance of teacher-student confidences	10.8	61.8	14.7	9.8	2.0	2.32	0.90
Knowledge of the school laws that affect teaching	3.9	32.4	29.4	23.5	7.8	2.93	1.07
Knowledge of the effect of school policy upon teaching	3.9	31.4	32.4	28.4	3.9	2.97	0.95
Knowledge of the effect of school administrative procedures upon teaching	2.0	37.3	24.5	27.5	8.8	3.04	1.04

Table 19 (continued)

Knowledges, attitudes, and competencies	Very adequate 1	Adequate 2	Uncertain 3	Inadequate 4	Very inadequate 5	Mean	Standard deviation
Competency in applying inter-personal relationship skills in large groups	2.0	45.1	27.5	18.6	6.9	2.83	0.98
Competency in applying inter-personal relationship skills in small groups	3.9	61.8	21.6	6.9	5.9	2.49	0.91
Competency in applying inter-personal relationship skills with individuals	8.8	52.9	22.5	9.8	5.9	2.49	0.99
Competency in recognizing emotional learning disabilities	2.0	15.7	28.4	38.2	15.7	3.51	0.97
Competency in recognizing mental learning disabilities	2.0	19.6	20.6	44.1	13.7	3.48	1.02
Competency in recognizing physical learning disabilities	3.9	30.4	21.6	34.3	9.8	3.16	1.09
Competency in recognizing cultural learning disabilities	2.0	15.7	28.4	38.2	15.7	3.50	1.00

Table 19 (continued)

Knowledges, attitudes, and competencies	Very adequate 1	Adequate 2	Uncertain 3	Inadequate 4	Very inadequate 5	Mean	Standard deviation
Skill in recognizing the opportunities and limitations for modification of individual differences	4.9	29.4	36.3	25.5	3.9	2.94	0.95
Competency in recognizing value systems as they develop and maintain individual differences	2.9	51.0	28.4	13.7	3.9	2.65	0.90
Competency in preparation of educational media	18.6	64.7	5.9	7.8	2.9	2.12	0.90
Knowledge of teaching strategies used in graded schools	1.0	59.8	25.5	10.8	2.9	2.54	0.82
Knowledge of teaching strategies used in multigraded schools	0.0	20.6	43.1	27.5	8.8	3.24	0.88
Knowledge of teaching strategies used in non-graded schools	0.0	13.7	35.3	33.3	17.6	3.55	0.94
Competency in applying media technology to instruction	11.8	53.9	17.6	13.7	2.9	2.42	0.96

Table 19 (continued)

Knowledges, attitudes, and competencies	Very adequate 1	Adequate 2	Uncertain 3	Inadequate 4	Very inadequate 5	Mean	Standard deviation
Competency in applying instructional strategies used in large groups	3.9	54.9	26.5	11.8	2.9	2.54	0.86
Competency in applying instructional strategies used in small groups	3.9	59.8	23.5	10.8	2.0	2.47	0182
Competency in applying instructional strategies used in individualized instruction	5.9	45.1	18.6	24.5	5.9	2.79	1.06
Competency in applying instructional strategies used in team teaching	2.0	14.7	23.5	46.1	13.7	3.55	0.97
Skill in constructing effective teacher-made tests	8.8	43.1	22.5	19.6	5.9	2.70	1.06
Competency in interpreting and analyzing test results for evaluative purposes	8.8	41.2	18.6	22.5	8.8	2.81	1.15
Competency in interpreting and analyzing test results for diagnostic purposes	5.9	30.4	26.5	26.5	10.8	3.06	1.11

Table 19 (continued)

Knowledges, attitudes, and competencies	Very adequate 1	Adequate 2	Uncertain 3	Inadequate 4	Very inadequate 5	Mean	Standard deviation
An understanding and a philosophy of grading	8.8	51.0	18.6	16.7	4.7	2.58	1.02
Competency to continuously evaluate student progress through observation	6.9	62.7	16.7	10.8	2.9	2.40	0.88
Competency in preparing lesson plans	33.3	51.0	7.0	4.9	2.9	1.93	0.94
Competency in writing instructional objectives	17.6	52.9	12.7	11.8	4.9	2.33	1.05
Competency in designing curriculum	10.8	52.0	17.6	13.7	5.9	2.51	1.05
Skill in managing classroom discipline	5.9	57.8	12.7	17.6	5.9	2.60	1.03
Skill in managing classroom freedom	2.9	52.9	23.5	16.7	3.9	2.65	0.93
Skill in managing classroom routine	7.8	73.5	6.9	7.8	3.9	2.26	0.87
Skill in classroom time management	7.8	74.5	8.8	5.9	2.9	2.21	0.79

Table 19 (continued)

Knowledges, attitudes, and competencies	Very adequate 1	Adequate 2	Uncertain 3	Inadequate 4	Very inadequate 5	Mean	Standard deviation
Knowledge of cognitive and behavioral learning theories	4.9	43.1	32.4	15.7	3.9	2.70	0.92
Sensitive and aware of current educational and social issues	5.9	58.8	22.5	9.8	2.9	2.45	0.86
A general education knowledge that is broad and current	8.8	67.7	13.7	4.9	4.9	2.29	0.88
Knowledgeable in a variety of subjects within the subject matter field being taught	25.5	58.8	6.9	5.9	2.9	2.01	0.91
Aware of the relationship of the subject matter being taught to the total curriculum	17.6	56.9	15.7	7.8	2.0	2.19	0.89
Competency in interpreting cumulative records	4.9	36.3	29.4	23.5	5.9	2.89	1.01
Competency in planning educational experiences that meet the selected objectives	7.8	56.9	19.6	12.7	2.9	2.46	0.92

Table 19 (continued)

Knowledges, attitudes, and competencies	Very adequate 1	Adequate 2	Uncertain 3	Inadequate 4	Very inadequate 5	Mean	Standard deviation
Skill in planning meaningful supplementary and remedial experiences for those students who have not achieved the formulated objectives	4.9	31.4	24.5	32.4	6.9	3.04	1.05
Enthusiasm for learning and the ability to instill this enthusiasm in their students	13.7	52.9	15.7	9.8	7.8	2.45	1.10
Concern for the student as a human being	29.4	52.9	9.8	5.9	2.0	1.98	0.90

shows 48 selected characteristics with per cent distributions, means, and standard deviations.

An examination of Table 19 shows that 20 of the 48 means fell in the "Adequate" rating area, 25 fell in the "Uncertain" area, and three in the "Inadequate" area. The characteristics that had an "Inadequate" rating and a numerical mean greater than 3.5 were:

1. Competency in applying instructional strategies used in team teaching
2. Competency in recognizing emotional learning disabilities
3. Knowledge of teaching strategies used in nongraded schools

Two characteristics that received a relatively high proportion of ratings in the "Very adequate" area were those dealing with competency in writing lesson plans and concern for the student as a human being. It was interesting to note that student teachers and teachers often expressed the opinion that lesson plans were of little or no value, still the experienced teacher respondents felt quite competent in preparing them.

Generally, applying a plus or minus one standard deviation for each mean, Table 19 show that the respondents rated 45 characteristics as being adequate.

<u>Factor analysis of secondary teacher ratings</u>. As in the comparable elementary section of this study, pages 55 through 78 , the

secondary teacher group's ratings of 48 characteristics (Knowledges, attitudes, and competencies) were subjected to a factor analysis. This was done to identify those variables or characteristics that were related to one another and to limit the number of variables with which the writer had to contend. This facilitated the process of testing for a significant difference among the means for the categories of age, sex, experience, grade level at which the respondent last taught, and the size of school in which the respondents last taught.

The University computer was programmed to extract all factors from the data with an eigen value of one or greater. When the data was processed using the program, 10 factors with their respective loadings appeared on the computer print out. From the print out, Tables 20 through 29, pages 100 to 107, were prepared. The first column entitled "Item" indicates the number of the specific variable as it appeared in the questionnaire. The column entitled "Knowledges, attitudes, and competencies" are those characteristics that were rated by the participants in the study. The last column designated "Loading" lists a number which gives the relationship between a specific variable (Characteristic) and the factor as an entity. Each numerical loading is the coefficient of correlation for that variable and the factor.

Presented on the following pages are the ten secondary factors prepared from the factor analysis. With each factor is the name assigned to it and a brief explanation for selecting that title.

Factor I, Table 20, variables were interpreted as a whole to be involved with a number of activities that dealt with classroom instruction, therefore, it was entitled "Classroom Effectiveness."

TABLE 20. SECONDARY FACTOR I--CLASSROOM EFFECTIVENESS

Item	Knowledges, attitudes, and competencies	Loading
31	Competency in preparation of educational media	.71
35	Competency in applying media technology to instruction	.75
55	Knowledgeable in a variety of subjects within the subject matter field being taught	.47
43	An understanding and a philosophy of grading	.46
54	A general education knowledge that is broad and current	.44
32	Knowledge of teaching strategies used in graded schools	.38
14	Knowledge of teacher's professional code of ethics	.37
23	Competency in applying inter-personal relationship skills in small groups	.36
36	Competency in applying instructional strategies used in large groups	.31
18	Understanding of the importance of teacher-student confidence	.30

Factor II, Table 21, page 101, incorporated several different ideas; among them learning disabilities, concern for the student, enthusiasm for learning, evaluation, professional development, planning, and value systems. Higher loading values occurred on those areas dealing with learning disabilities and concern for the student. When these considerations were taken into account, this writer believed that "Recognition of the Compensation for Learning Difficulties" was an appropriate title.

TABLE 21. SECONDARY FACTOR II—DIAGNOSTIC AND PRESCRIPTIVE SKILLS

Item	Knowledges, attitudes, and competencies	Loading
25	Competency in recognizing emotional learning disabilities	.82
26	Competency in recognizing mental learning disabilities	.83
27	Competency in recognizing physical learning disabilities	.77
28	Competency in recognizing cultural learning disabilities	.69
61	Concern for the student as a human being	.69
60	Enthusiasm for learning and the ability to instill this enthusiasm in their students	.66
59	Skill in planning meaningful supplementary and remedial experiences for those students who have not achieved the formulated objectives	.54
44	Competency to continuously evaluate student progress through observation	.44
16	An appreciation of the need for continuing educational and professional development	.41
23	Competency in applying inter-personal relationship skills in small groups	.38
29	Skill in recognizing the opportunities and limitations for modification of individual differences	.38
43	An understanding and philosophy of grading	.37
37	Competency in applying instructional strategies used in small groups	.36
58	Competency in planning educational experiences that meet the selected objectives	.36
30	Competency in recognizing value systems as they develop and maintain individual differences	.35

All but two of the variables listed in Factor III, Table 22, were directly related to evaluation of student progress. The two variables, one dealing with communication and the other with cognitive and behavioral learning theories, may be indirectly related to evaluation. For these reasons, the factor was named "Measurement of Learning Outcomes."

TABLE 22. SECONDARY FACTOR III--MEASUREMENT OF LEARNING OUTCOMES

Item	Knowledges, attitudes, and competencies	Loading
42	Competency in interpreting and analyzing test results for diagnostic purposes	.82
41	Competency in interpreting and analyzing test results for evaluative purposes	.80
40	Skill in constructing effective teacher-made tests	.74
32	Knowledge of teaching strategies used in graded schools	.47
57	Competency in interpreting cumulative records	.46
17	Effective communication skills	.39
43	An understanding and a philosophy of grading	.32
52	Knowledge of cognitive and behavioral learning theories	.31

Factor IV, Table 23, page 103, had five variables, four involved policy, administrative procedures, and ethics. The fifth variable, which had a relatively low loading, appeared to have little relationship with the others. On the basis of the first four variables, Factor IV was designated "Administrative Procedure."

TABLE 23. SECONDARY FACTOR IV--ADMINISTRATIVE PROCEDURE

Item	Knowledges, attitudes, and competencies	Loading
20	Knowledge of the effect of school policy upon teaching	.72
19	Knowledge of the school laws that affect teaching	.71
21	Knowledge of the effect of school administrative procedures upon teaching	.56
14	Knowledge of a teacher's professional code of ethics	.47
29	Skill in recognizing the opportunities and limitations for modification of individual differences	.30

Factor V, Table 24, was called "Classroom Management" because five variables with high loadings appeared to be directly associated with classroom management activities.

TABLE 24. SECONDARY FACTOR V--CLASSROOM MANAGEMENT

Item	Knowledges, attitudes, and competencies	Loading
50	Skill in managing classroom routine	.77
51	Skill in classroom time management	.69
14	Knowledge of a teacher's professional code of ethics	.43
36	Competency in applying instructional strategies used in large groups	.41
39	Competency in applying instructional strategies used in team teaching	.39
15	Knowledge of the purposes of professional organizations	.38

Factor VI, Table 25, contains 11 variables that all appeared to relate to the construct, teaching strategies and their application. For this reason, it was designated "Application of Teaching Strategies".

TABLE 25. SECONDARY FACTOR VI--APPLICATION OF TEACHING STRATEGIES

Item	Knowledges, attitudes, and competencies	Loading
34	Knowledge of teaching strategies used in nongraded schools	.76
33	Knowledge of teaching strategies used in multigraded schools	.72
29	Skill in recognizing the opportunities and limitations for modification of individual differences	.47
58	Competency in planning educational experiences that meet the selected objectives	.43
38	Competency in applying instructional strategies used in individualized instruction	.42
48	Skill in managing classroom discipline	.42
39	Competency in applying instructional strategies used in team teaching	.37
30	Competency in recognizing value systems as they develop and maintain individual differences	.36
55	Knowledgeable in a variety of subjects within the subject matter field being taught	.34
59	Skill in planning meaningful supplementary and remedial experiences for those students who have not achieved the formulated objectives	.34
35	Competency in applying media technology to instruction	.31

In Factor VII, Table 26, all 17 of the variables appeared to deal directly or indirectly with some phase of inter-personal skills or relations and for this reason was named "Inter-personal Skills and Relations."

TABLE 26. SECONDARY FACTOR VII--INTER-PERSONAL SKILLS AND RELATIONS

Item	Knowledges, attitudes, and competencies	Loading
22	Competency in applying inter-personal relationship skills in large groups	.75
24	Competency in applying inter-personal relationship skills with individuals	.72
18	Understanding of the importance of teacher-student confidence	.69
23	Competency in applying inter-personal relationship skills in small groups	.67
33	Knowledge of teaching strategies used in multigraded schools	.63
34	Knowledge of teaching strategies used in nongraded schools	.62
17	Effective communication skills	.63
21	Knowledge of the effect of school administrative procedures upon teaching	.56
43	An understanding and a philosophy of grading	.43
20	Knowledge of the effect of school policy upon teaching	.41
52	Knowledge of cognitive and behavioral learning theories	.41
44	Competency to continuously evaluate student progress through observation	.38
53	Sensitive and aware of current educational and social issues	.35
29	Skill in recognizing the opportunities and limitations for modification of individual differences	.33
48	Skill in classroom discipline	.32
37	Competency in applying instructional strategies used in small groups	.32
31	Competency in preparation of educational media	.31

Factors VIII, IX, and X, had few variables in each factor. Each was named on the basis of the variable subjects with the highest loadings. Tables 27, 28, and 29, pages 106 and 107, show these factors with their assigned title.

TABLE 27. SECONDARY FACTOR VIII--PLANNING

Item	Knowledges, attitudes, and competencies	Loading
45	Competency in preparing lesson plans	.77
46	Competency in writing instructional objectives	.73
52	Knowledge of cognitive and behavioral learning theories	.43

TABLE 28. SECONDARY FACTOR IX--CURRICULUM

Item	Knowledges, attitudes, and competencies	Loading
56	Aware of the relationship of the subject matter being taught to the total curriculum	.75
53	Senstitive and aware of current educational and social issues	.50
54	A general education knowledge that is broad and current	.49
43	An understanding and philosophy of grading	.40

TABLE 29. SECONDARY FACTOR X--APPRECIATION AND ENTHUSIASM FOR LEARNING

Item	Knowledges, attitudes, and competencies	Loading
32	Knowledge of teaching strategies used in graded schools	.51
60	Enthusiasm for learning and the ability to instill this enthusiasm in their students	.42
54	A general education knowledge that is broad and current	.40
53	Sensitive and aware of current educational and social issues	.39
37	Competency in applying instructional strategies used in small groups	.37

After the ten factors had been identified for the secondary teachers' ratings of the characteristics listed in Part II of the questionnaire, factor scores were computed for each individual for each of the ten factors. Utilizing these factor scores null hypotheses of no difference among the means of the factors for six different categories were tested. The null hypotheses tested were those listed on page 44. The test was completed using the University computer which was programmed to use an analysis of variance technique and compute an F ratio.

Hypothesis number one, "There is no significant difference among the means of the ten factors between males and females," when tested produced an F ratio of 1.07. This value when interpreted by use of an F table (Downie and Heath, 1965) showed that this value was less than the 5.12 listed for the degrees of freedom for this test at the five per cent level of significance. On the basis of this comparison, the null hypothesis was retained.

The test for hypothesis number two, "There is no significant difference among the means of the ten factors for the different age groups," included only two of the six groups listed in question number two of the questionnaire. These groups, 21 to 25 year and the 26 to 30 year age groups, when tested produced an F ratio of .550. Since this value was lower than the 4.26 listed in the F table for the degrees of freedom for the test, the hypothesis was retained.

For hypothesis number three, "There is no significant difference among the ten factors for the first listed majors of the individuals," the majors were grouped into five categories to reduce the number of variables with which the researcher had to work. These categories were Social Science, Science, Mathematics, Language Arts, and Business and Vocational subjects. The F ratio for the test for significant difference of this hypothesis produced a value of .623, a lower value than the 3.63 listed in an F table at the five per cent level of significance. Since the F ratio was lower, the hypothesis was retained.

Hypothesis number four, "There is no significant different among the means of the ten factors for the different grade levels at which the individual last taught," involved all six grade levels listed in the questionnaire in question number eight. These were: (1) Grades seven and eight; (2) Junior high school, grades seven through nine; (3) Senior high school; grades nine through twelve; (4) Senior high school, grades ten through twelve; (5) Grades seven through twelve; and (6) Other. When this hypothesis was tested for a significant difference, it resulted in an F ratio of .512. Since this value was lower than the 4.26 taken from the table for the appropriate degrees of freedom, the hypothesis was retained.

Hypothesis number five, "There is no significant difference among the means of the ten factors for the different levels of experience," involved four levels of experience. These were: (1) one year, (2) two years, (3) three years, and (4) more than three years. The F ratio for the test for significant difference was .677, lower than the 3.86 from the F table.

The sixth hypothesis, "There is no significant difference among the means of the ten factors for the different size of school in which the individual last taught," involved schools with six different enrollment groups. These were: (1) 100 or fewer pupils; (2) 101-200 pupils; (3) 201-500 pupils; (4) 501-1,000 pupils; (5) 1,001-1,800 pupils; and (6) Over 1,800 pupils. When the F test was completed, utilizing the data appropriate to this hypothesis, the F ratio was .327. Since this was lower than the value of 3.48 interpreted from the F table, the hypothesis was retained.

Secondary Teacher Course Ratings

Seven specific professional education courses were required for the secondary teacher-training program at Montana State University College of Education. In addition, two elective courses in education were a must. Often Audio-Visual Education, School Curriculum, Tests and Measurements, and Teaching of Reading were used to satisfy the elective requirement.

In the third section of the questionnaire used in this study, participants were asked to rate the courses in the professional course requirement block as they perceived them as preparation for effective performance of their teaching duties. The rating was done on a Likert (1932) type scale progressing from a rating "Of no value" with a numerical score of five to a rating of "Very valuable" with a numerical score of one.

The participants ratings were compiled and distributions, means, and standard deviations computed. For the specific required courses, 102 respondents' reactions were available; and for the elective courses, Audio-Visual Education, Tests and Measurements, and Curriculum, there were 69, 22, and 17, respectively.

Inspection of Table 30, page 111, shows that the mean rating for one course, Student Teaching, placed it in a "Valuable" to "Very valuable" category. This rating agreed with the findings of many of those people who have done research in the area of teacher-training. The mean

TABLE 30. DISTRIBUTION OF SECONDARY TEACHER RATINGS CONCERNING THE VALUE OF REQUIRED PROFESSIONAL EDUCATION COURSES AS PREPARATION FOR EFFECTIVE PERFORMANCE OF TEACHING DUTIES

Professional education course title	Very valuable 1	Valuable 2	Uncertain 3	Of little value 4	Of no value 5	Mean	Standard deviation
General Psychology	6.9%	36.3%	22.5%	30.4%	3.9%	2.88	1.04
Educational Psychology	3.9	13.7	10.8	28.4	43.1	3.93	1.20
Secondary School Methods	16.7	42.2	21.6	14.7	4.9	2.49	1.08
Special Methods in Major Subject Area	45.1	30.4	10.8	10.8	2.9	1.96	1.12
Special Methods in Minor Areas	37.3	29.4	17.6	9.8	5.9	2.18	1.20
Student Teaching	65.7	22.5	7.8	3.9	0.0	1.50	0.80
Secondary Post-Student Teaching Seminar	20.6	33.3	31.4	9.8	4.9	2.05	0.95
Electives:							
Audio-Visual Education	39.1	52.2	5.8	28.9	0.0	1.87	0.72
Tests and Measurements	22.7	54.5	4.5	4.5	13.7	2.32	1.26
Curriculum	5.9	11.8	29.4	35.3	17.6	3.47	1.09

rating for six courses fell in the "Valuable" category and two fell in the "Uncertain" area. One mean course rating placed it in the "Of little value" class. Again, this rating agreed with the findings of several of the studies reviewed.

Approximately 91 per cent of the respondents indicated that all of their professional education courses had been taken at the Montana State University College of Education. The rest of them had taken course work at colleges at other locations.

Comments Made by Secondary Teachers

Respondents were given the opportunity to make additional unstructured comments concerning the teacher-training program. Many wrote criticisms that they considered to be constructive. Representative comments were compiled into a list with the frequency with which each statement occurred. This information is presented in Table 31, pages 113 through 116.

A review of Table 31 shows that the comment that occurred with the greatest frequency was, "The student teaching experience was too short." Four respondents felt that education courses had too much theory and not enough practical application, and four emphasized a need for more contact with students during their training.

TABLE 31. COMMENTS MADE BY SECONDARY TEACHERS CONCERNING THE TEACHER TRAINING PROGRAM

Comment	Frequency
1. The student teaching experience was too short.	10
2. There is a lack of understanding on the part of the professors of how it is out there.	3
3. The methods courses were beneficial to me.	1
4. All of the knowledges, attitudes, and skills were adequate.	1
5. The teacher should have more information on working with disadvantaged students.	2
6. We should have had more information on preparing budgets and federal programs.	1
7. The prospective teacher needs more information on problems of students on drugs.	2
8. I was well prepared in my subject matter field.	1
9. Education courses had too much theory and not enough practical application.	4
10. The program did not prepare the prospective teacher for the large city school system.	1
11. The prospective teacher needs more information about the variety of procedures and policies of the school.	1
12. The teacher needs a broader background in major and minor fields, particularly the languages.	1
13. Suggest more courses in the major and minor field.	1
14. The teacher needs fewer general courses.	1
15. The school exploratory experience should be eliminated.	1

Table 31 (continued)

	Comment	Frequency
16.	The teacher needs to be taught how to test and grade.	1
17.	The preparation in the major field was good.	1
18.	The methods courses in my foreign language studies was of no value.	1
19.	The most outstanding educational course that I took was the post-student teaching class.	2
20.	There is a definite need for better understanding of counseling on the part of the teacher.	1
21.	The prospective teacher needs more contact with students during their training.	4
22.	I felt that the program on the whole was pretty much useless.	1
23.	The faculty seemed completely out of touch with what was current in education.	1
24.	The use of the retired school administrator as student teaching supervisors seems to foster 19th Century methods and this decreases the value of the student teaching experience.	1
25.	The observation and student teaching should be done earlier in the training program.	2
26.	Student teaching experience should include a grading period (report cards and parent conferences).	1
27.	Too many of the education courses were similar.	1
28.	Student teachers should not be assigned to a first year teacher for their student teaching experience.	1
29.	More should be done in the program to make future teachers aware that they must deal with attitudes and character building.	1

Table 31 (continued)

	Comment	Frequency
30.	More education courses should be given after the student teaching experience and not before.	2
31.	I believe it would be helpful to have a seminar or workshop devoted to interviews that a new teacher must have with the administration or school board.	1
32.	Communication skills with students need to be developed.	1
33.	The teaching methodology at M.S.U. is from "Dark Ages"--lecture.	1
34.	The future teacher needs to have experiences with team teaching.	2
35.	My experiences at M.S.U. were actually valuable in that I had knowledge to draw from; however, some classes could have been made to live and to really be an asset--I wish we had dealt with "what is" more than "what could be".	1
36.	The Physical Education Department methods courses were worthwhile.	1
37.	Future teachers need training in recognizing emotional and cultural learning disabilities.	2
38.	Training in techniques of individualized instruction should be given.	2
39.	There is a need for more psychology courses that deal with the behavior of children from junior high through high school age.	1
40.	The Audio-visual Education courses should be taken before student teaching.	1
41.	Lesson plans are not useable because they cannot be written for all situations.	1

Table 31 (continued)

	Comment	Frequency
42.	I feel that all education professors should spend one or two of every five years in the field teaching.	1
43.	Instead of student teaching, I would suggest a year internship (salaried at say $2,500).	1
44.	Student teaching offered too little experience at different levels for K-12 music.	1
45.	More stress should be placed on how to write, follow, and use good lesson plans.	1
46.	The future teacher needs more information about slow and fast learners.	
47.	More training should be given in discipline and classroom control.	1

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this study was to provide information for the staff of the Montana State University College of Education to assist them in determining what changes should be made, if any, in the teacher training program to adequately prepare its graduates to be effective teachers. In addition, the data collected was made available to staff members to aid them in supplying data for a pending NCATE evaluation. A further purpose was to help keep the training program current by providing a model for a systematic and continuing evaluation.

The problem for this study was divided into several parts. These were: (1) to develop an instrument to gather feedback concerning the adequacy of the professional teacher training program from graduates of the program; (2) to determine the adequacy of the undergraduate teacher training program as perceived by the 1969 College of Education Graduates--utilizing the instrument prepared; (3) to conduct a survey of those persons in the 1969 Graduating Class who did not elect to teach to determine their reasons for not doing so; and (4) to propose a model for a systematic evaluation of the professional teacher education program at Montana State University.

Two instruments, one for elementary and one for secondary trained people, were developed as outlined in Chapter III and mailed to 328 of the 1969 College of Education Graduates. Included in the instrument was a section concerning general information about the individual, a section in which the respondent rated the selected professional training objectives, and a section in which the respondent was asked to rate the value of professional courses as preparation for teaching. The instrument was so designed that information could be gathered about those graduates who did not enter the teaching profession.

The proposed model for a systematic evaluation of the professional education program was developed and was presented as a recommendation in this chapter.

Summary of Findings

1. Nearly 95 per cent of the elementary teacher respondents reported that they were female and approximately five per cent said they were male. Of the secondary trained respondents, 55.7 per cent reported that they were female, and 44.3 per cent said they were male.

2. Nearly eight out of every ten of both elementary and secondary respondents reported that their ages fell in the 21 to 25 year old age group. Slightly less than eight per cent of the elementary teacher group was 41 years old or over.

3. In 1969-1970, the first year after their graduation, 79.7 per cent of the elementary graduates were employed. This percentage decreased about seven per cent per year for the next two years. For

the secondary respondents, 56.3 per cent were employed the first year and decreased by approximately 4.5 per cent each year for the next two years.

4. The largest group, 51.5 per cent, of the elementary respondents had three years of experience. The remainder of the group, 19.1, 11.8, and 17.6 per cent had one, two, and more than three years, respectively. Of the secondary respondents, 50 per cent had three years experience, 14.7 per cent one year, 26.5 per cent two years, and 8.8 per cent more than three years.

5. The majority, 94.8 per cent, of the elementary training respondents were trained to teach in elementary education. Among the secondary respondents, the greatest number of majors were reported in Physical Education and Health (11.4 per cent) and Home Economics (14.0 per cent).

6. Of the elementary respondents, approximately 14 per cent failed to enter the teaching field for a variety of reasons ranging from marriage to military service. About 26 per cent of the secondary trained respondents reported that they did not enter the teaching field because they could not find a job, they were married, they were called into the military service, or they continued their education.

7. Ninety per cent of the elementary respondents taught in grades one through six. Approximately 45 per cent of the secondary respondents taught at the senior high school level, 16.0 per cent at

the junior high school level, and 10.8 per cent at the seventh and eighth grade level.

8. The elementary trained respondents reported that about 85 per cent of them taught graded or multigraded classes. The rest, 13.4 per cent, taught nongraded classes. The majority of them taught in self-contained classrooms. Secondary respondents reported that 70.3 per cent of their group taught graded classes, 12.8 per cent nongraded classes, and 16.8 per cent multigraded classes. Ninety-one per cent taught departmentalized classes.

9. The secondary trained people taught for the most part in their major or minor area of preparation.

10. Fifty per cent of the elementary teacher respondents taught in school systems with enrollments of 1,000 and under, and 51.4 per cent of the secondary respondents taught in school systems of the same category.

11. Of the 51 knowledges, attitudes, and competencies considered by the College of Education faculty members as desirable characteristics for an elementary teacher to possess, on a five-point scale, 36 received a mean adequacy of preparation rating above the midpoint of the scale. Fifteen received ratings below the midpoint. Secondary teachers rated the adequacy of preparation of 39 of 48 above the midpoint of the scale and nine below.

12. When the factor analysis was performed on the characteristics (Knowledges, attitudes, and competencies), six factors for the elementary

group of factors were extracted and ten for the secondary trained group. Among the means of the factor scores of those factors, there was no significant difference for the elementary and secondary teacher respondents for the grade level at which the respondent last taught, teaching experience of the respondent, and the size of the school in which the respondent last taught. In addition for the secondary respondents there was no significant difference among the means of the factor scores for age, sex, and major field of preparation.

13. Elementary teacher trained graduates rated the required professional courses Orientation and Educational Psychology lowest with means 3.19 and 3.31, respectively. Secondary teacher trained graduates rated two of their professional courses, Educational Psychology and Curriculum, below a 3.00 mean.

Conclusions

1. With one exception, the questionnaire served the purpose for which it was designed. Through its use, biographical data concerning the respondents was gathered, and ratings of program objective and professional courses were given by graduates.

The exception occurred among the elementary respondents who appeared to experience difficulty in interpreting the meaning of the term nongraded. For example, in question number eight, the respondents were asked to indicate the grade level at which they last taught, 1.5 per cent replied nongraded. When the same group was asked the vertical organization of their classes in question number 10, 13.4 per cent replied nongraded.

2. At times, this writer found that the numerical ratings on the questionnaire rating scales were difficult to interpret. The progression from a "Very inadequate" or "Of no value" with a high numerical rating to "Very adequate" or "Very valuable" with a low numerical rating was confusing.

3. This writer found that the majority of elementary respondents rated 36 of 51 selected knowledges, attitudes, and competencies "Adequate" to "Very adequate," and 15 in the "Uncertain" to "Inadequate" range. The conclusion was reached that the training was for the most part adequate, but 15 of the selected knowledges, attitudes, and competencies needed greater emphasis in the training program. The 15 involved teaching strategies, classroom management, evaluative skills, and recognition of learning disabilities.

4. The majority of the secondary respondents rated 45 of the 48 knowledges, attitudes, and competencies in the "Uncertain" to "Adequate" range of the rating scale, and three in the "Inadequate" range. The three which were rated "Inadequate" involved team teaching, recognition of emotional learning disabilities, and teaching strategies used in nongraded schools.

Of the 45 rated "Uncertain" to "Adequate," the areas of evaluation, provision for remedial types experiences, effect of policy and law upon teaching, and interpersonal communications in large groups tended to receive lower ratings. The conclusion reached from these findings was that the secondary teacher training program needed strengthening in the development of skills in several areas. The specific areas involved were team teaching, teaching strategies used in nongraded schools, and recognition of learning disabilities.

5. Elementary teacher respondents rated the professional teacher training courses Orientation and Educational Psychology with mean ratings of 3.19 and 3.31, respectively. This writer reached the conclusion that the respondents felt that these courses were of little or no value in helping the respondents perform their functions as a teacher.

6. The secondary teacher respondents' mean rating for both Educational Psychology and Curriculum was below 3.00 or in the "Of little value" range. Apparently, the respondents believed these courses were of no help to them in performing their teaching activities.

7. The conclusion was reached by this writer that the elementary teacher respondents' ratings of the knowledges, attitudes, and competencies involved in the study were not affected by teaching experience, grade level at which the respondent last taught, or the size of the school in which the respondent last taught.

8. The conclusion was reached by this writer that the secondary teacher respondents' ratings of the knowledges, attitudes, and competencies involved in the study were not affected by age, sex, major field of preparation, grade level at which respondent was teaching, teaching experience, or the size of school in which the respondent taught.

9. A number of the elementary and the secondary teacher respondents commented that the student teaching experience was too short. The conclusion was reached that the student teaching experience should be lengthened.

10. Another comment made by four secondary and ten elementary respondents emphasized the need for more practical training in conjunction with the theory throughout the program. The conclusion reached was that more laboratory type of activities should be included in course work.

11. Elementary and secondary teacher respondents commented that they would like to have had more contact with students during their training, and not just during student teaching. A para-professional program which provides such experience early in the program was initiated in 1970 for elementary teacher trainees. This same program should be made available to secondary trainees.

Recommendations

This study has concerned itself with developing an instrument for gathering evaluative feedback from experienced teacher graduates from the Montana State University College of Education and with the use of that instrument to gather feedback from the teacher-trained graduates in the 1969 Spring and Summer graduating classes. The findings and conclusions from the study have been presented in the foregoing pages.

Using these findings and conclusions as a basis, the following recommendations are made:

1. To reduce the chance of error and confusion, the Likert type numerical rating scale used in the questionnaire should be reversed progressing from a low of one to a high of five, rather than from a low of five to a high of one. Although no difficulty was encountered with the scale, this writer feels that the change would assist in interpreting the returns from the questionnaire.

2. Question number eight of the secondary questionnaire, "At which grade level are you presently at or at which grade level did you teach last?" provides five specific alternatives for the respondent. A sixth alternative labeled "Other" should be added to the question.

3. An investigation of the purpose and content of the course Educational Psychology should be made to determine its relevancy to the needs and desires of the teacher in the field.

4. Teacher trainees, secondary and elementary, should be given more comprehensive training in the recognition of cultural, emotional, mental, and physical learning disabilities. Laboratory experience in the development of these skills should be an integral part of the training.

5. Elementary and secondary teacher trainees should have more training than previously given in instructional strategies used in individualized instruction, team teaching, nongraded classes, and in multigraded classes.

6. Elementary teacher trainees should have more instruction and practice in the use of role playing and simulation to be utilized as teaching strategies.

7. Secondary graduates indicated a lack of competency in evaluating student progress. To help alleviate this deficiency, it is recommended that a comprehensive course in Tests and Measurements become a requirement for the professional curriculum for secondary teacher certification.

8. To overcome the feeling of inadequacy on the part of elementary teacher graduates in the area of classroom management, greater emphasis needs to be placed on this area of teacher training. Actual observation of classroom situations followed by discussion and critique sessions to give a practical understanding are recommended.

9. A working knowledge of the principles of educational psychology are useful to the elementary and secondary classroom teacher. To assure that such a knowledge is acquired, it is recommended that the course objectives and the effectiveness of the course Educational Psychology be reviewed with the goal of making it an effective course.

10. The teacher training program for elementary and secondary teacher trainees should incorporate more practical experiences in conjunction with the theoretical aspects of the course work.

11. It is recommended that all trainees be required to work directly with students throughout the teacher training program. Tutoring of students and working as a teacher-aide in the public schools are highly recommended.

12. Many trainees are employed in school systems that require them to work with disadvantaged students and the problems that are associated with them. Preparation of trainees to work in this type of situation should be a part of the program.

13. It is recommended that the elementary and secondary student teaching experience be lengthened as soon as possible from six and nine weeks, respectively, to 12 weeks or a full academic quarter. In addition, research and planning should be initiated to consider the practicality of a year internship for trainees.

14. Elementary and secondary education staffs should continuously reassess and reformulate their program objectives to keep them

current with emerging needs of students and schools.

15. The terms "nongraded" and "vertical organization" need clarification in the directions provided on the questionnaires developed as a part of this study. It is recommended that when the questionnaire is used again that the directions include a more complete explanation of the terms.

16. When the questionnaires developed for this study are used again, it is recommended that a factor analysis and analysis of variance be done and compared with those done by this writer for this study.

17. One of the purposes of this study was to develop and design a model that would suggest a means of systematically collecting data for a periodic evaluation of the Montana State University undergraduates teacher training program. To accomplish this objective, University faculty and personnel were contacted for recommendations and for possible sources of available data. Utilizing the suggestions, the information gathered, and the principles used in constructing a Gannt chart (Handy and Hussain, 1969), a model was designed for evaluating the teacher training program. Figure 1, pages 129 and 130, was the final result of those efforts and is recommended as a system for such an evaluation.

On the vertical axis of the model in Figure 1, seven different data resources involved in the evaluation process are identified. The horizontal axis represents time, a period of one year, during which

Figure 1. A Design for Evaluating the Montana State University College of Education Teacher Training Program

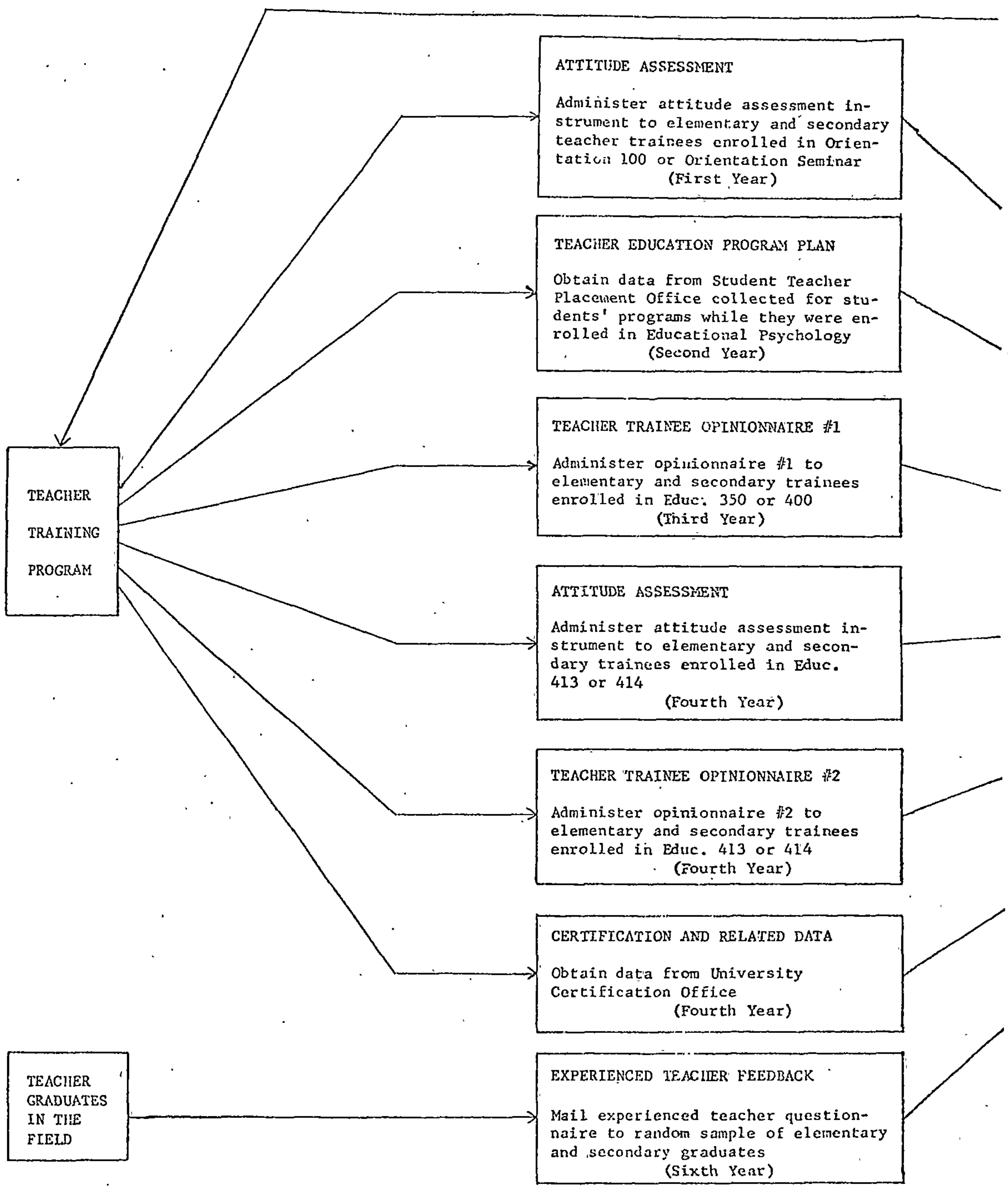
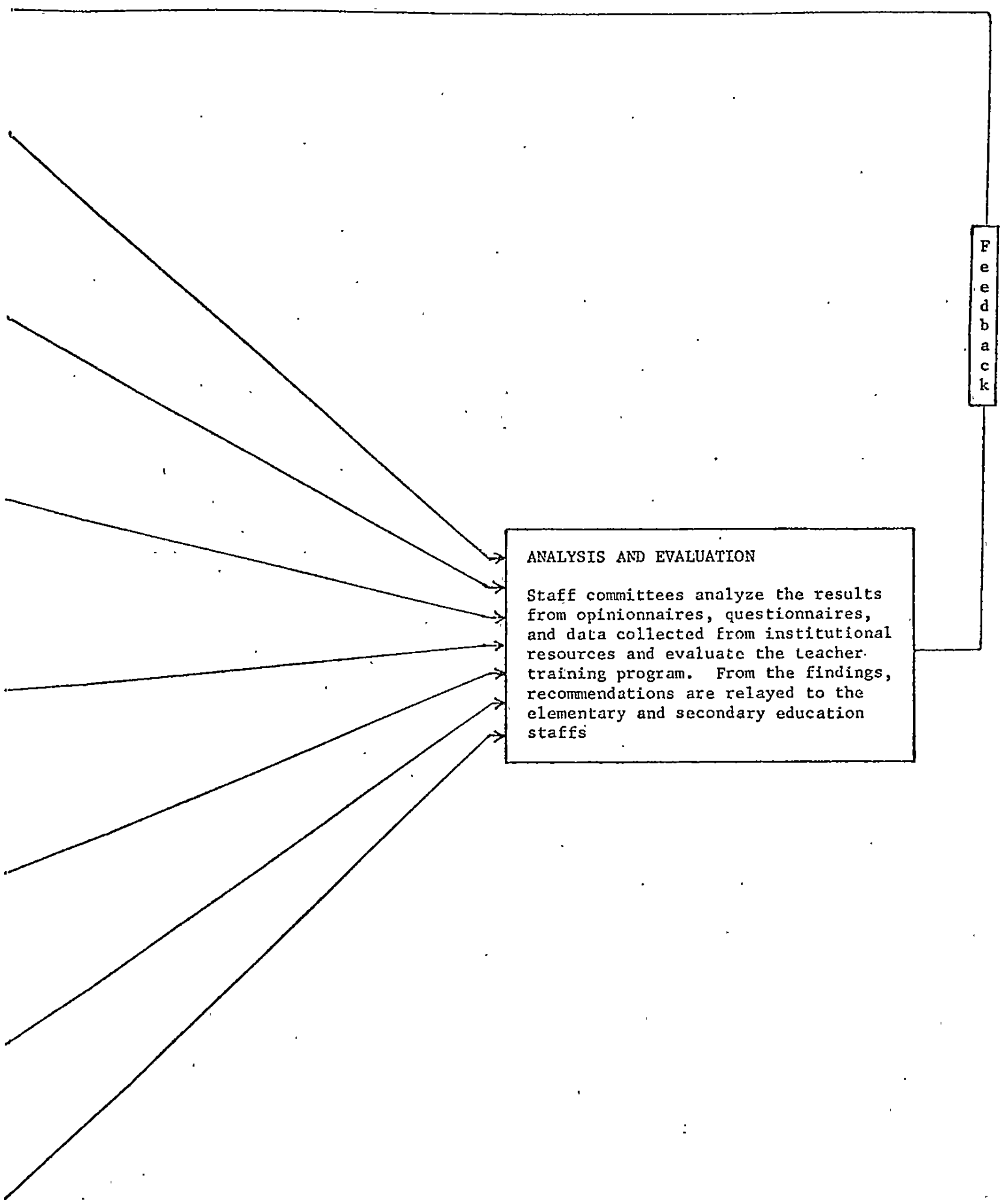


Figure 1 (Continued)



data is to be collected from trainees and graduates who have completed one of five stages of a six year sequence.

No instrument for the Attitude Assessment elements of the model were prepared by this writer. This task could very well be the objective of a graduate student's research project. The purpose of these assessments would be to determine changes in the trainee's thinking toward the educative process of public school students in order that an appropriate curriculum could be provided.

The Teacher Education Program Plan (T.E.P.P.) prepared during Ed Fd 208, Educational Psychology (Montana State University, 1972), by all elementary and secondary trainees is a source of useful information for the evaluative process. Examples of some of this information include curriculum the trainee wishes to pursue, grade point average (G.P.A.), freshman placement test scores, degree sought, grade from English 121, majors, minors, broad field of preparation, and planned professional course program. Data from these programs are key punched on cards and filed in the Student Teaching and Certification Office.

The data resource elements of the model, labeled Teacher Trainee Opinionnaire No. 1 and No. 2, are intended to be a source of feedback from persons enrolled in the program. Feedback from trainees from the perspective of the third year and fourth year student should be useful in designing and evaluating current curriculum and teaching practices. No instrument was designed for these particular tasks; however, these, too, could be prepared by a graduate student.

Certification and Related Data is the collection of additional data by the Student Teaching and Certification Office personnel after the graduation of the teacher trainees. This data is key punched on the same cards as the T.E.P.P. data. It includes social security number, major(s) completed, minor(s) completed, Undergraduate Record Examination, quantitative and verbal scores, quarter graduated, year certified, and the trainees' G.P.A. by major, minor, and professional course preparation.

The last resource of the model is Experienced Teacher Feedback. The instruments for gathering this information were prepared as a part of this study and are presented in Appendices A, pages 135-140, and B, pages 141-146. It is suggested that copies of these be mailed to elementary and secondary teacher trained graduates of the training program on a random basis near the end of the second year after their graduation.

Another possible resource that could prove to be of assistance in the process of evaluation, and that could be added to the model, is a summary of teacher placement data by the Career Placement Office. Information gleened from this source would be helpful in advising students about the availability of teaching positions at different grade levels and in subject matter areas.

To facilitate the Analysis and Evaluation phase of the evaluation process, it is recommended that whenever possible that feedback from the data resources be quantified in a way that it can be utilized for computer input. Computer programs may be written by the staff evaluation committee that will provide printouts from which program decisions can be made.

APPENDICES

APPENDIX A

ELEMENTARY TEACHER PREPARATION PROGRAM EVALUATION

PART I - GENERAL INFORMATION

DIRECTIONS: Please answer the following questions by placing a check mark on the line before the applicable statement. Choose only one answer for each question. For the completion type questions, write the appropriate word on the line provided.

1. What is your sex?
   ______(1) Male
   ______(2) Female

2. In which of the following age groups is your current age included?
   ______(1) 20 years and under
   ______(2) 21-25 years
   ______(3) 26-30 years
   ______(4) 31-35 years
   ______(5) 36-40 years
   ______(6) 41 years and over

3. Were you employed as a full-time teacher during the 1969-1970 school term?
   ______(1) Yes
   ______(2) No

4. Were you employed as a full-time teacher during the 1970-1971 school term?
   ______(1) Yes
   ______(2) No

5. Are you employed as a full-time teacher during the 1971-1972 school term?
   ______(1) Yes
   ______(2) No

6. In which of the following curriculums were you trained to teach?
   ______(1) Elementary education
   ______(2) Junior high school option
   ______(3) Music option in elementary education
   ______(4) Physical education and health, K-12
   ______(5) Art, K-12
   ______(6) Music, K-12

7. If you answered No to questions 3, 4, and 5, complete this question and return the questionnaire in the enclosed envelope. Do not complete the remaining questions.

   ______(1) I could not find a position in my teaching field.
   ______(2) I was restricted to a limited geographical area by residence and no teaching position was available within commuting distance.
   ______(3) I married and decided not to seek a teaching position.
   ______(4) I decided to enter another occupation because I came to the conclusion that teaching was not the career I wished to pursue.
   ______(5) I was called into the military service.
   ______(6) I could not find a teaching position that offered an adequate salary.
   ______(7) Other. Please specify:____
   ____

8. At which grade level are you presently teaching or at which did you teach last?
   ______(1) Kindergarten
   ______(2) Grades 1-3
   ______(3) Grades 4-6
   ______(4) Grades 7-9
   ______(5) Grades 1-6
   ______(6) Grades 1-8
   ______(7) Nongraded (classes without grade levels)
   ______(8) Other. Specify__________________

Elementary Evaluation

9. If you are teaching or taught last at the junior high school level, what subjects did you teach?________________________________

10. What is the vertical organizational pattern of the class group(s) that you are teaching or that you taught last?
    ______(1) Graded
    ______(2) Nongraded
    ______(3) Multigraded (each class contains two or more grades)

11. What is the horizontal organizational pattern of the class group(s) that you are teaching or that you taught last?
    ______(1) Self-contained classroom
    ______(2) Departmentalized
    ______(3) Team teaching
    ______(4) Other. Specify____________

12. How many years of public and private school teaching experience have you? Include the current year.
    ______(1) One
    ______(2) Two
    ______(3) Three
    ______(4) More than three

13. What is the enrollment in the school system in which you are employed or were previously employed? Include all schools, elementary and secondary.
    ______(1) 100 or fewer pupils
    ______(2) 101-200 pupils
    ______(3) 201-500 pupils
    ______(4) 501-1,000 pupils
    ______(5) 1,001-1,800 pupils
    ______(6) Over 1,800 pupils

PART II - KNOWLEDGES, ATTITUDES, AND COMPETENCY RATING

DIRECTIONS: The faculty of the Montana State University College of Education believes that each graduate of the teacher training program should possess certain knowledges, attitudes, and competencies. Listed below with a rating scale is a number of the characteristics that they believe are important. As a graduate of the program with teaching experience, would you please place a check mark in the box following each characteristic that most nearly agrees with your opinion concerning the adequacy of the preparation you received in that specific area? Please study the example before you begin the rating task.

RATING

KNOWLEDGES, ATTITUDES, AND COMPETENCIES	1 Very Adequate	2 Adequate	3 Uncertain	4 Inadequate	5 Very Inadequate
EXAMPLE: Competencies needed to teach algebra		✓			

Elementary Evaluation

KNOWLEDGES, ATTITUDES, AND COMPETENCIES	1 Very Adequate	2 Adequate	3 Uncertain	4 Inadequate	5 Very Inadequate
14. Competencies needed to effectively teach art					
15. Competencies needed to effectively teach music					
16. Competencies needed to effectively teach language arts					
17. Competencies needed to effectively teach mathematics					
18. Competencies needed to effectively teach physical education					
19. Competencies needed to effectively teach reading					
20. Competencies needed to effectively teach science					
21. Competencies needed to effectively teach social science					
22. Skill in managing classroom discipline					
23. Skill in managing classroom routine					
24. Skill in classroom time management					
25. Skill in managing classroom freedom					
26. Competency in interpreting cumulative records					
27. An understanding and philosophy of grading					
28. Skill in utilizing the teaching strategy of role playing					
29. Skill in utilizing the teaching strategy of simulation					
30. Skill in utilizing the teaching strategy of discussion					
31. Skill in utilizing the teaching strategy of discovery					
32. Skill in utilizing the teaching strategy of inquiry					

Elementary Evaluation

KNOWLEDGES, ATTITUDES, AND COMPETENCIES

	RATING 1 Very Adequate	2 Adequate	3 Uncertain	4 Inadequate	5 Very Inadequate
33. Competencies in preparation of instructional media					
34. Competency in applying media technology to instruction					
35. A general education knowledge that is broad and current					
36. Sensitive and aware of current educational and social issues					
37. Effective communication skills					
38. Competency in applying instructional strategies appropriate to large groups					
39. Competency in applying instructional strategies appropriate to small groups					
40. Competency in applying instructional strategies appropriate to individualized instruction					
41. Competency in applying instructional strategies appropriate to a team teaching approach					
42. An appreciation of the need for continuing educational and professional development					
43. Competency in effectively teaching the aesthetic areas of the curriculum					
44. An understanding of the importance of teacher-student confidences					
45. Knowledge concerning the purposes of professional teacher organizations					
46. Knowledge of the school laws that affect teaching					
47. Knowledge of the effect of school policy on teaching					
48. Skill in recognizing the opportunities and limitations for modification of individual differences					
49. Concern for the pupil as a human being					

Elementary Evaluation

KNOWLEDGES, ATTITUDES, AND COMPETENCIES	1 Very Adequate	2 Adequate	3 Uncertain	4 Inadequate	5 Very Inadequate
50. Competency in constructing effective teacher made tests					
51. Skill in interpreting and analyzing test results for diagnostic and evaluative purposes					
52. Competency in continuously evaluating student progress through observation					
53. Competency in planning educational experiences which meet selected objectives					
54. Knowledge of the teacher's professional code of ethics					
55. A knowledge of the effect of school administrative procedures upon teaching					
56. Skill in formulating obtainable objectives for and with children which can be evaluated for teaching the skills, knowledges, and attitudes necessary to function in society					
57. The skill to plan meaningful supplementary and remedial experiences for those students who have not achieved the formulated objectives					
58. Enthusiasm for learning and the ability to instill this enthusiasm in their pupils					
59. Skill in recognizing emotional learning disabilities					
60. Skill in recognizing mental learning disabilities					
61. Skill in recognizing physical learning disabilities					
62. Skill in recognizing cultural learning disabilities					
63. Knowledge of teaching strategies used in nongraded schools					
64. Knowledge of teaching strategies used in multigraded schools					

Elementary Evaluation

PART III - COURSE RATING

DIRECTIONS: Listed below with a rating scale are the professional courses that are required for the teacher training program at Montana State University. On the rating scale to the right of each course title, indicate the value of each course as you perceive it as preparation for effective performance of your teaching duties.

PROFESSIONAL EDUCATION COURSE TITLE	RATING 1 Very Valuable	2 Valuable	3 Uncertain	4 Of Little Value	5 Of No Value
65. General Psychology					
66. Orientation					
67. Child Development					
68. Educational Psychology					
69. Teaching of Reading					
70. Teaching of Language Arts					
71. Teaching of Social Studies					
72. Teaching of Elementary Science					
73. Teaching of Art					
74. Teaching of Arithmetic					
75. Teaching of Elementary Music					
76. Teaching of Elementary Physical Education					
77. Student Teaching					
78. Tests and Measurements					
79. Post Student-Teaching Seminar					
80. Audio Visual Education					

81. Did you take all of your professional education courses at Montana State University?
______(1) Yes
______(2) No

If you wish to make additional comments concerning the teacher training program, please make them on the back of this page. They will be appreciated.

SECONDARY TEACHER PREPARATION PROGRAM EVALUATION

PART I - GENERAL INFORMATION

DIRECTIONS: Please answer the following questions by placing a check mark on the line before the applicable statement. Choose only one answer for each question. For the completion type questions, write the appropriate word on the line provided.

1. What is your sex?
   ______ (1) Male
   ______ (2) Female

2. In which of the following age groups is your current age included?
   ______ (1) 20 years and under
   ______ (2) 21-25 years
   ______ (3) 26-30 years
   ______ (4) 31-35 years
   ______ (5) 36-40 years
   ______ (6) 41 years and over

3. Were you employed as a full-time teacher during the 1969-1970 school term?
   ______ (1) Yes
   ______ (2) No

4. Were you employed as a full-time teacher during the 1970-1971 school term?
   ______ (1) Yes
   ______ (2) No

5. Are you employed as a full-time teacher during the 1971-1972 school term?
   ______ (1) Yes
   ______ (2) No

6. Please list your major(s) and minor(s)
   Major(s)______________________________
   Minor(s)______________________________

7. If you answere No to questions 3, 4, and 5, complete this question and return the questionnaire in the enclosed envelope. Do not complete the remaining questions.
   ______ (1) I could not find a position in my teaching field.
   ______ (2) I was restricted to a limited geographical area by residence and no teaching position was available within commuting distance.
   ______ (3) I married and decided not to seek a teaching position.
   ______ (4) I decided to enter another occupation because I came to the conclusion that teaching was not the occupation I wished to pursue.
   ______ (5) I was called into the military service.
   ______ (6) I could not find a teaching position that offered an adequate salary.
   ______ (7) Other. Please specify: ______________________________
   ____

8. At which grade level are you presently teaching or at which did you teach last?
   ______ (1) Grades 7 and 8
   ______ (2) Junior high school, grades 7-9
   ______ (3) Senior high school, grades 9-12
   ______ (4) Senior high school, grades 10-12
   ______ (5) Grades 7-12

Secondary Evaluation

9. In which subject areas are you teaching or in which did you teach last? Example: Math, English, etc. ______________________________

10. What is the vertical organizational pattern of the class group(s) that you are teaching or that you taught last?
______(1) Graded
______(2) Nongraded (classes without grade levels)
______(3) Multigraded (each class contains two or more grades)

11. What is the horizontal organizational pattern of the class group(s) that you are teaching or that you taught last?
______(1) Departmentalized
______(2) Team teaching
______(3) Other. Specify________________

12. How many years of public and private school teaching experience have you? Include the current year.
______(1) One
______(2) Two
______(3) Three
______(4) More than three

13. What is the enrollment in the school system in which you are employed or were previously employed? Include all schools, elementary and secondary.
______(1) 100 or fewer pupils
______(2) 101-200 pupils
______(3) 201-500 pupils
______(4) 501-1,000 pupils
______(5) 1,001-1,800 pupils
______(6) Over 1,800 pupils

PART II - KNOWLEDGES, ATTITUDES, AND COMPETENCY RATING

DIRECTIONS: The faculty of the Montana State University College of Education believes that each graduate of the teacher training program should possess certain knowledges, attitudes, and competencies. Listed below with a rating scale is a number of the characteristics that they believe are important. As a graduate of the program with teaching experience, would you please place a check mark in the box following each characteristic that most nearly agrees with your opinion concerning the adequacy of the preparation you received in that specific area? Please study the example before you begin the rating task.

KNOWLEDGES, ATTITUDES, AND COMPETENCIES	RATING 1 Very Adequate	2 Adequate	3 Uncertain	4 Inadequate	5 Very Inadequate
EXAMPLE: Competencies needed to teach art		✓			
14. Knowledge of a teacher's professional code of ethics					
15. Knowledge of the purposes of professional organizations					

Secondary Evaluation

KNOWLEDGES, ATTITUDES, AND COMPETENCIES	1 Very Adequate	2 Adequate	3 Uncertain	4 Inadequate	5 Very Inadequate
16. An appreciation of the need for continuing educational and professional development					
17. Effective communication skills					
18. Understanding of the importance of teacher-student confidence					
19. Knowledge of the school laws that affect teaching					
20. Knowledge of the effect of school policy upon teaching					
21. Knowledge of the effect of school administrative procedures upon teaching					
22. Competency in applying inter-personal relationship skills in large groups					
23. Competency in applying inter-personal relationship skills in small groups					
24. Competency in applying inter-personal relationship skills with individuals					
25. Competency in recognizing emotional learning disabilities					
26. Competency in recognizing mental learning disabilities					
27. Competency in recognizing physical learning disabilities					
28. Competency in recognizing cultural learning disabilities					
29. Skill in recognizing the opportunities and limitations for modification of individual differences					
30. Competency in recognizing value systems as they develop and maintain individual differences.					

RATING