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AN ANALYSIS OF THE SPECIFIC FEATURES WHICH CHARACTERIZE THE
MORE SUCCESSFUL PROGRAMS FOR THE RECRUITMENT AND TRAINING OF
COLLEGE TEACHERS.
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MICHIGAN

     BY MEANS OF MAIL QUESTIONNAIRES AND CAMPUS VISITS, DATA
WERE OBTAINED FROM 42 COLLEGES AND UNIVERSITIES ON
RECRUITMENT PROGRAMS FOR POTENTIAL TEACHERS AND TRAINING
PROGRAMS FOR TEACHING ASSISTANTS. ONLY FOUR OF THE
INSTITUTIONS SURVEYED REPORTED CONTINUING, SYSTEMATIC
RECRUITMENT EFFORTS, THE OTHERS DEPENDING ON INFORMAL
TEACHER-STUDENT CONTACTS. DATA ON TRAINING PROGRAMS FOR
TEACHING ASSISTANTS SHOWED THAT MOST PROGRAMS WERE
DEPARTMENT-BASED AND CONTROLLED BY DEPARTMENT PERSONNEL. THE
FOCUS OF THIS TRAINING TENDED TO BE ON PRAGMATIC, IMMEDIATELY
RELEVANT CONCERNS WITH LITTLE EMPHASIS ON CONSIDERATIONS
ASSOCIATED WITH EDUCATIONAL PHILOSOPHY OR CAREER COMPETENCE
IN TEACHING. IN MOST DEPARTMENTS, TEACHING ASSISTANTSHIPS
WERE VIEWED PRIMARILY AS A MEANS OF PROVIDING UNDERGRADUATE
INSTRUCTION AND FINANCIAL SUPPORT FOR GRADUATE STUDENTS,
RATHER THAN A MEANS FOR TRAINING PPROSPECTIVE COLLEGE
TEACHERS. A MODEL TRAINING PROGRAM WAS SUGGESTED, CONSISTING
OF FUNCTIONALLY DEFINED STAGES WHICH VARIED IN AMOUNTS OF
STRUCTURE, ACTIVE SUPERVISION, AND TEACHING ASSISTANT
RESPONSIBILITY. OBJECTIVE PROCEDURES FOR EVALUATING TEACHING
ASSISTANT PERFORMANCE AND TRAINING PROGRAM EFFECTIVENESS WERE
ALSO SUGGESTED. (JH)

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Project No. S-482
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An Analysis of the Specific Features Which Characterize

the More Successful Programs for the Recruitment

and Training of College Teachers

January 1967

U.S. DEPARTMENT
OF HEALTH, EDUCATION, AND WELFARE

Office of Education
Bureau of Research

The Center for Research on Learning and Teaching
The University of Michigan

Ann Arbor, Michigan

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INTRODUCTION

It has be..n predicted that enrollments in our colleges and universities will double their present numbers by 1980 (19). Our graduate schools are also expected to double their doctoral output during the same period, but not all these Ph.D. graduates are likely to join college faculties. It has been estimated that over three-fourths of the new college instructors are entering the profession without having completed the doctorate (12). On the other hand, it is claimed that the anticipated growth in the number of Ph.D.'s will more than match the increase in student population in the near future (10), and that we may be entering a buyer's market within the next decade.

The accession to the Ph.D. may properly be taken as evidence of a high level of subject-matter and research competence, but it has no necessary implications for the instructor's ability to formulate realistic instructional goals, to organize and present information, and to reliably assess student achievement. So it would appear that regardless of the differences in number-estimates, there remains a need for some training in teaching. Berelson (5) reports considerable agreement on all levels from new doctoral graduates to college presidents that current training leaves something to be desired.

Graduate student teaching assistants stand at the point which represents the convergence of the concerns for the production of college teachers. In many large institutions, they are de facto college instructors, conducting as much as one-third of all undergraduate classes. Furthermore, this proportion is likely to increase as members of college faculties spend more time on research and public service and less and less on teaching. After obtaining their degrees, former graduate students are then recognized as "beginning college teachers," when, in point of fact, relatively few individuals complete their graduate career without some teaching experience. Concern for the production of new

college teachers thus resolves itself into two principal
problems: (a) the amount of help, supervision and train-
ing that is made available to graduate teaching assistants
to enable them to conduct college classes in such a man-
ner that the proper education of undergraduate students
does not suffer, and (b) the adequacy of the preparation
of these individuals for the teacher's role which they
will assume when they join college faculties.

The two points are not identical. One method of
achieving the first goal--and one which is adopted a con-
siderable proportion of the time--is to reduce the teach-
ing assistant to the role of academic handyman, confining
his activities to overseeing labs as a safety warden, or
scoring exams that have been written by faculty lec-
turers, or following a rigidly prescribed method of pre-
senting relatively insignificant details taken from a
highly structured syllabus. The implicit stance taken
by the assistant's supervisor under these circumstances
is that he is not to be trusted with real responsibility
and flexibility. It is reasonable to suggest that this
lacks something insofar as being adequate preparation to
be the kind of college instructor that is generally con-
sidered desirable.

The triple tensions of expanding enrollments, a net
reduction in the proportion of college teachers with Ph.D.s,
and the greater research commitments by university facul-
ties require our explicit attention to the recruitment
and training of college teachers, qua teachers (3, 18,
22, 26). Two clear implications can be drawn from these
facts: (a) we need information about successful current
training programs for teacher-candidates; (b) our grad-
uate schools must address themselves more directly to the
specific issues involved in the recruitment and training
of college teachers.

Of all the new Ph.D.'s joining college faculties,
approximately 90% of them receive their degrees from
about 50 institutions (29). Despite this relatively
limited source of supply, we have not known in depth or
in detail, how the vast majority of our new teachers are
being prepared to carry out their professional respon-
sibilities as teachers. It is apparent that the quality
of the preparation is often called into question (11, 25,
26). On the other hand, there are some hopeful stirrings
on the scene. This study proposes to delineate their
characteristics. There are virtually no published re-
ports from almost half of the "crucial 50" institutions.

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Even those studies which are available lack many of the details necessary to appraise their effectiveness. For instance, Axelrod's (2) report of a conference on college teacher preparation gives information on only four programs: Davis' (13) report for the North Central Association is largely devoted to recruiting programs among NCA institutions; Alpern's (1) survey of courses for the preparation of college teachers deals only with the number of formal courses offered and the general topics covered in them, and the information in Blegen and Cooper's (6) report needs to be brought up to date. The current literature, therefore, can contribute very little specific and detailed information to help any given institution plan and conduct a formal program for the preparation of prospective college teachers. The problem is so immediate and extensive that our system of higher education can no longer afford the luxury--if it ever could--of allowing each institution to grope its way toward a solution without benefit of the experience of others.

The problem of training future college teachers is recognized in the literature. Several large studies (11, 25, 26) reported that both college administrators and new instructors were restive about the relative lack of skill in undergraduate teaching. Even the foremost proponent of the position that there is no crisis in college teaching (5) reported that college administrators see the task of the graduate school as two-fold, with research competence taking first priority, but followed closely in importance by preparation for college teaching.

In response to these needs, there have been many proposals, such as Carmichael's (8) MA-3 program which is currently receiving support from the Ford Foundation in almost 40 institutions (32). Other prominent suggestions include: an organized in-service training program conducted by the first employing institution (14), and systematic preparation of college teachers with degrees other than the Ph.D. (5, 7, 8).

Only a little information on recruitment programs outside the North Central Association area (13) has been readily available beyond those connected with the MA-3 (32), Danforth and Woodrow Wilson programs. Most such efforts appear to be informal in nature, consisting of individual interest in, and encouragement of, especially capable students by instructors. It would be useful to know of any more organized programs, their success, and

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how this success is evaluated. Davis (1 refers to a
few such plans but it would be helpful t₃ have more in-
formation about these promising developments.

The most serious gap in the information concerning
recruiting activities is the evaluation of their compara-
tive or cumulative success. Indeed the question is not
often raised in the reported literature. About the only
available information has been that which could be in-
ferred from sources such as the current Danforth Founda-
tion Annual reports, and the Woodrow Wilson Roster of
Current and Prospective College Teachers.

Reports of Training Programs

This brief survey of reported training programs will
be organized under five headings: (a) administrative
structur: and features, (b) the population receiving
training, (c) purposes and forms of training, (d) charac-
teristic substantive features, and (e) methods of evalua-
tion. The scheme is followed in order systematically to
present the available information, and to identify gaps.
The same outline was used in carrying out this study.

Administrative features. A survey of about 30 re-
ports covering over 450 training programs indicates that
approximately 70% are under departmental control, while
25% are institution-wide in scope. Some of the more
comprehensive articles are those by Axelrod (2), Blegen
and Cooper (6), Clark (11), Davis (13), Dollahan (15),
and Gustad (21). Unfortunately, there is little infor-
mation on the source of the impetus to initiate training
programs or the length of time they have been in opera-
tion, or the particular factors which have served to
facilitate or inhibit establishment and/or continued op-
eration.

Population receiving training. It is fairly clear
that most (over 80%) of the programs are directed toward
graduate students working for the Ph.D. degree. The re-
mainder are chiefly oriented toward other degrees (9, 30).

Formats of the programs. The most common activity
which can be construed as part of the training of future
college teachers is the teaching assistantship, which
serves as a part (often the core) of over 75% of the
programs surveyed. Representative articles are those by
Axelrod (2), Clark (11), Davis (13), Dollahan (15), and
Remak (31). This experience, in which the trainee deals

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in varying degrees with most of the day-to-day problems of college teaching, tends to be considered by the individuals themselves as the most useful activity in their preparation for a teaching career (11, 15).

However, it is not enough to know how many programs provide classroom experiences for graduate students. What are the authority, freedom, and responsibility of these teaching assistants? Fortunately, there is considerable information on this topic, with the best single source being Clark (1964).

It would be generally agreed that to be maximally effective, the classroom teaching experiences which occupy a focal position in the training of future college teachers require considerable supervision and guidance by senior faculty members. Descriptions of training programs for graduate students should provide such information, and roughly 95% of them do so. Unfortunately, although new instructors report that readily available guidance was one of the most helpful aspects of training (11), less than half of them actually seem to receive systematic help and consultation from senior staff, as reported by such studies as Baller and Worchester (4), Blegen and Cooper (6), Clark (11), Davis (13), and Diekhoff (14). In summary, there seems to be adequate information about relatively inadequate supervision.

Substantive features. A simple report of the number of instances which may be identified within a specific category is not much help vis-a-vis establishing and developing new programs unless the category can be shown to relate to productive and/or efficient training. Reporting that a given procedure is used by a large majority of current programs provides no discriminating power --it could be, and probably is, used by many plans of indifferent quality. What is needed is an explication of the aspects of training which appear to be criterial for effective programs--and this information is not available in the summary statements of current structures and procedures.

The most common kind of information that the beginning college instructor receives deals with the presentation of methods and techniques which are seen as particularly applicable to specific content within subject-matter areas. This is reported by about 65% of the 456 programs surveyed. Among the more typical accounts are

those by Clark (11), Dollahan (15), Eckelberry (17),
Jensen (23), and Winkelman (33).

Since the profession of college teaching is a multi-
faceted one, and since there are certain skills associated
with each aspect of it, information on the means adopted
to develop these skills could prove quite useful in es-
tablishing programs for preparing new instructors. There
is little published information on the matter. The ques-
tion of what professional knowledges and skills are de-
veloped by the current programs appears unanswerable on
the basis of the readily available reports. The amount
and kind of instruction that is given on many of the topics
which would seem to be highly relevant is indeterminate.
The fact that many courses on a given topic are offered
(Alpern, 1962) is of no help, because so few programs
are reported as making use of them.

Summary. There have been many analyses of the prob-
lems involved in supplying sufficient numbers of ade-
quately trained new college teachers, and there have been
many proposals of ways of meeting these problems. There
is apparently considerable disagreement as to what consti-
tutes "adequate training," but much of the literature
leans toward at least some preparation for teaching per
se, as distinguished from subject-matter competence
(which is taken for granted). Regardless of the analyses
and proposals, however, there appear to be few systematic,
practicable programs set up to provide only such instruc-
tion as is necessary and sufficient to meet the demands
for entering a professional teaching career. In many
cases, "training" is a by-product of universities' need
for teaching assistants to conduct undergraduate classes.
The literature on the programs which are in existence is
inadequate with regard to four of five important areas:
(1) With regard to administrative features of the program,
it is clear that most are department-based, but there
seems to be little information on many other dimensions
of management. (2) The information appears adequate in
respect to the specification of the population receiving
training. (3) The data on the forms which training takes
is quite spotty, with some important areas relatively
blank. It is difficult, in other words, to be sure what
is being done. (4) The same situation obtains with an-
other feature--that of substantive content. There is
little relevant information about the specific topics and
skills in which the apprentice teacher receives instruc-
tion. (5) Finally, with regard to the important question
of evaluating the effectiveness of the programs, the in-
quiry is seldom even made.

Objectives of the study.

A. The Factual Summary

The first objective was to prepare a summary two-part factual report with the following sections:

1. Recruitment

The on-site visits provided data about the administrative organization and the form of recruitment activities on the various campuses.

2. Training

Information on training programs in operation was obtained by mail and by on-site interviews with administrators, supervisors, and participating teachers. Data were obtained in the following categories:

a. Administrative and quantitative features of the program
b. The nature of the population receiving training
c. The format of the program (formal courses, supervised teaching, etc.)
d. The kinds of knowledges and skills in which training is given
e. The means adopted for evaluation of the program.

B. The Evaluative Interpretation and Recommendations

The second objective of the investigation was to describe a well-balanced and articulated program for the training of college teachers--one that would be efficient practical and flexible. Furthermore, this "model" would be based on distinctive and progressive features of successful, on-going programs. It would provide a rough blueprint for the development of effective training programs, while affording sufficient flexibility to encourage variations to meet specific institutional or departmental needs.

In addition to its substantive features, the recommended plan should have the following procedural characteristics: (1) the time devoted to training activities must not add appreciably to the time lag between the AB and Ph.D. degrees, (2) suggestions should be made concerning appropriate and practical criteria for successful programs, (3) the model will be so structured that all

graduate students who teach will receive some guidance
and help, but only those committed to a college teaching
career would receive more intensive and broader training,
(4) suggestions should be made of administrative actions
which can be taken to emphasize the recognition by the
institutions of their responsibility to produce both
able scholars and skilled teachers.

METHOD

The study was designed to supply basic information
about a large number of training programs for teaching
assistants, and more precise, detailed data about a
smaller number of selected programs. The dual goals
dictated two modes of operation: relatively large-
scale mail contacts with institutions and departments,
and on-site interviews with the people most intimately
concerned with the features of a particular program.
The first mode was logically propaedeutic to the second,
and this was the sequence that was followed. To insure
comparability of information across institutions and
across investigation-modes, a common outline of topics
was developed. It was not expected, however, that this
outline could effectively account for all variations of
administrative structure, procedure, or personnel assign-
ment. Therefore, the way was left open to expand or
modify the original outline and to report unanticipated
but promising developments when they were encountered.

Selecting the Original Sample

Judging from published articles, it was concluded
that most training programs were focused in, and admin-
istered by, departments, and that it was necessary to
gather most of the basic data on that level. The task
then became largely one of discovering the departments
within institutions from which the most useful and gen-
eralizable information could be obtained. The aim of
the investigation was not simply to gather systematic
cross-sectional data, but to identify and study more
intensively those programs which appeared to be most
sophisticated, practical, and effective, in the hope of
providing information upon which overall improvements
in existing programs could be made.

The choice of institutions with which to initiate
contacts was made on the basis of the following criteria:

First, thorough search of the relevant literature was made to determine those universities or departments whose training programs for teaching assistants were reported therein. Special weight was assigned to those programs for which there was more than one report extending over a period of years and those with new systematic programs for which outside funding had been secured (implying thorough planning and explicit goals). This kind of information allows the inference that, in general, the programs so reported are more likely to be clearly formulated and strongly supported (both financially and administratively) than are unreported programs. Second, Pfnister's (29) report of the 50 most productive universities identified the institutions which best characterize the training which is actually received by most graduate student teaching assistants. Because they are also large institutions, it would be possible to study a variety of training procedures, philosophies, and plans while visiting a relatively few campuses.

Third, training programs that were considered especially effective or imaginative by University of Michigan faculty members were studied. Programs which met all three of these criteria were, of course, given top priority.

The Mail Survey

Letters were sent to the second-ranking academic officers of the selected institutions, explaining the nature of the study and requesting identification of the "three or four most active training programs" in the institution, or referral to an administrative officer who could provide such information. A copy of this letter will be found in Appendix A.

Replies to this letter led to the following alternative courses of action. If referral was made to an administrative officer, a letter was sent explaining the purpose and character of the study, accompanied by multiple copies of a general questionnaire. It was requested that the questionnaires be forwarded to those departments which, in the addressee's opinion, were conducting the most effective or promising programs designed to prepare graduate students for a college teaching career. The letter and the questionnaire are reproduced in Appendix B. In those cases in which referral was directly to the departmental level, questionnaires plus explanatory letters were sent directly to those departments.

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Selection of Institutions for On-Site Visits

The information that was gained in the two stages of the mail survey was evaluated in conjunction with that previously obtained from the literature, and secondary sources. In those (relatively few) cases in which there was no response to the mail contacts, judgments were based on the previously obtained information, and on the general reputation of the institution as an academic leader.

The criteria which were applied were: (1) a commitment of resources to the training programs which was clearly above-average for the overall sample; ( ) an indication of strong administrative interest in training by the department or the university: (3) a training plan with distinct features in at least one department; (4) the existence of special environmental conditions, such as extensive use of TV for undergraduate instruction, undergraduate unrest and "activism", or the lack of the enrollment pressure usually associated with the use of graduate students as instructors, and (5) unusual sophistication in the response to the questions about the evaluation of the effectiveness of the program.

Conduct of on-Site Visits

Interviews were conducted with university officers, and with department personnel; they were tape recorded, and were structured along a common outline, the categories of which are specified in the detailed report of results in Appendix D. An average of five contacts was made at each university. In nearly all cases, departmental information was obtained from the individual charged with the supervision of teaching assistants-- frequently the chairman. Each interview was approximately an hour in length.

Treatment of Data

Information from the mail questionnaires and from the visits was codified and tabulated (separately) according to a common categorization scheme. Measures of central tendency and of range were obtained where appropriate. Special note was taken of particularly imaginative, systematic or well-articulated features which were in use and appeared to be effective.

Results

Data was collected by mail and/or campus visit from 71 humanities, 14 social science, and 51 natural science departments, plus 10 professional schools and 26 administrative officers above the departmental level, representing a total of 42 institutions. The entire list of university units is presented in Appendix C. The first round of letters was sent to the officers of 50 universities, of whom 44 (88%) replied. The second round of letters and questionnaires was sent to 193 departments and administrative officers in 44 institutions; 113 (58%) mail replies were received from 35 institutions. On-site interviews were conducted with 105 individuals in 20 institutions. In general, results are here reported in terms of proportions; the actual number of responses falling in each category is presented in Appendix D. It was not possible to obtain data on all topics from all respondents. In those cases in which fewer than 25 responses were received, ratios will be reported.

Recruitment Activities

Information on recruitment programs was obtained during the 20 on-site visits. Three programs, those at Chicago, Michigan and the University of Washington, involve cooperative arrangements with nearby four-year colleges and active recruitment among the latter's freshmen and sophomore students. A fourth systematic program, at Tulane, focuses its recruiting activities at the high school level. Like the preceding three, it was begun with a grant from the Ford Foundation. Since all but one of these plans has been described in the literature, the present report will be confined to an overall summary and a note on the current status of each.

The Chicago, Michigan and Washington programs were begun as part of the Ford MA-3 plan, and all involve regular administrative contact between a director or coordinator at the university level and representatives at each of a group of four-year colleges. Personal contact is made with students, literature is distributed, and special meetings are held to promote the desirability of college teaching as a career. The Chicago program (12) concentrates on accelerating the academic preparation of the student, while conducting seminar-type discussions at which issues and problems in college teaching are discussed. The University of Washington plan (23) has a master-apprentice arrangement in which students

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receive on-the-job introductions to the facets of the college teacher role. In both cases, students spend their junior and senior years on the college campus, and transfer to the university after graduating with the A.B. degree.

As of the summer of 1966, two groups in the Chicago plan, each numbering about 50 students, have spent at least one year on the University campus. Although the program was originally designed to provide college teachers at the M.A. level, over half of the participants have elected to continue past that point in graduate school. That the program has been successful in attracting very able students is attested by the fact that almost one-third of them have been offered sought-after fellowships such as Woodrow Wilson, Danforth and Fulbright. The program will continue through the 1967-68 academic year.

The University of Washington Cooperative Program of Education for College and University Teaching began in 1960 with Ford funds. Ten of the original twelve institutions are still cooperating in the project, although external funding has ceased. Several hundred students have participated in the program to date, with approximately half of them having attended the University of Washington. The value which the institutions attach to the program is shown by the fact that they have elected to continue without outside funds for another three years.

The Tulane program (20) began with a five-year grant in 1962. Since it was envisaged as a five-year program beginning with the undergraduate freshman year, it is not yet possible to evaluate its success in attaining its goal of producing more and better college teachers. However, the University has taken steps to continue the program on its own and has announced a plan to provide four-year University (graduate) fellowships for students who are willing to commit themselves to preparation for college teaching careers. By centering attention on high school seniors with outstanding academic records and an interest in teaching, the caliber and motivation of the participants has been maintained at a high level.

Since an account of the Michigan Scholars in College Teaching Program is not available in the published literature, a brief description of its structure and mode of

operation is included here. This report is based on an annual report distributed by the program (26). The Program is a joint endeavor of five four-year colleges and the University of Michigan and has as its focus the preparation of the liberal arts college teacher. A director on the University campus maintains close contact with representatives in each of the other participating institutions where a large number of faculty members serve as primary agents in the identification of potential Scholars. The program operates without financial inducements to the students, but relies on continued attempts to cultivate in undergraduate freshmen and sophomores an interest in college teaching.

In their junior and senior years, the participants are given opportunities to enroll in honors courses, in independent study—often selecting readings from graduate reading lists, in research courses and in an acceleration of their foreign language competence. All of these are seen as direct preparation for graduate work. In addition, the students participate in seminars on their home campuses, and in an annual conference (on the University campus), all focussed on the issues and concerns of college teaching. During their senior year, memberships in appropriate professional organizations are provided, plus subscriptions to its associated journal. Visits to the graduate departments at the University of Michigan are arranged, and there is a continuing close relationship with senior faculty members involving some teaching experiences and encouraging a professional orientation.

Contact with the students is maintained after they enter graduate school. To date, one-third of them have received citations or awards; two-thirds hold fellowships—often quite prestigious ones. In terms of evaluation, it is still too early to tell whether the program has accelerated the achievement of advanced degrees. It is clear, however, that the interest of the Scholars in college teaching has been maintained.

During 1964-65, the last year for which complete data is available, there was a total of 340 Michigan Scholars, of whom more than 115 were in graduate school. The program, begun in 1961 with a grant from the Ford Foundation, is expected to be continued indefinitely by the participating institutions.

In addition, two of the universities, Ohio State and Wisconsin, participate in state-wide recruitment activities in cooperation with other institutions in their respective states. These programs have been reported by Davis(13), and will not be described here.

In the remaining 14 institutions, recruitment activities are informal in nature, consisting mostly of individual contact and encouragement of promising young scholars by faculty members. In at least two of the universities, however, annual campus-wide meetings are held to acquaint undergraduates with the challenges and rewards of college teaching careers. Under these circumstances, it is understandable that there are few attempts to evaluate the success of such recruitment efforts.

Training Programs

The "consensual" training program

Nearly all programs in the 42 institutions contacted are department-focussed and virtually all training activity is controlled by, and confined to, department personnel. Two administrative factors appear to be crucial to the establishment and continuance of training programs: (a) the participation by senior members of the faculty who command the professional respect of their colleagues, and who stand in positions of influence; (b) the presence of individual faculty members who have the interest and capacity to serve as effective administrators of the program. Sometimes these roles are combined in the same individual: but in large departments, they tend to be separated. Interestingly enough, despite the publicity given in recent years to the need for more college teachers, it was the opinion of these respondents that the proportion of their Ph.D. graduates going into college teaching has not increased signigicantly.

Typically, teaching assistants begin their instructional duties in the first graduate year with very little formal consideration of their teaching potential or competence. Under these circumstances, it would appear that from the standpoint of the teaching assistants and of their undergraduate students, adequate and continuing supervision and guidance is very important. In point of fact, such activities tend to be confined to weekly

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meetings of instructors to deal with administrative
problems, occasional informal contacts between super-
visor and teaching assistant, and one visit to the
assistant's class.

As might be expected, the skills and knowledge upon
which attention is customarily focussed in training pro-
grams are those seen as most directly relevant to the
teaching assistant's day-to-day duties. These most
commonly include information on specific teaching strate-
gies which appear well adapted to certain topics, draw-
ing up course outlines, syllabi and reading lists, and
at least an occasional brush with the problems of eval-
uating student achievement. "Methods" courses per se
appear to be a universal anathema.

Lastly, there is little systematic activity to report
regarding the evaluation of either the performance of
teaching assistants or the success of the program. In
both cases, global opinions of the faculty are the most
common basis for judgment. There appear to be few attempts
to state with any clarity what the goals of the training
program are, or what "competence as a teacher" means with
regard to a teaching assistant. "here are some exceptions,
but they constitute a small minority.

Administrative factors

The availability of certain quantitative information
can help in assessing the magnitude of the problems that
must be faced in establishing and maintaining training
programs for   graduate student teaching assistants. Such
data can also provide a background for more meaningful
discussion of other aspects of the programs.

Most training programs are centered in departments,
and in the sample which was studied, they are large depart-
ments. Almost half of them report 125 or more graduate
students enrolled, and two-thirds have more than 25
teaching assistants. When dealing with numbers in this
range, the establishment of relatively formal arrangements
for training and supervision appears to follow. Small
numbers of graduate students who are actively engaged in
undergraduate instruction can be individually guided on
an apprenticeship basis with little difficulty and invest-
ment of time. However, most of the visited universities

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are very large and are continuing to expand their under-
graduate enrollments. This fact often tends to elicit
relatively centralized and formal structures in the
training programs and the allocation of faculty time for
supervisory functions. Translated in terms of depart-
mental work-load considerations, according to the respon-
dents in this study, the supervision and guidance of sub-
stantial numbers of teaching assistants make demands on
the energies and time of the faculty which are quite
comparable to those involved in most other administrative
assignments. It is significant, then, that in less than
one-third of the observed programs is faculty time
expressly set aside for such functions. In the remainder,
these duties have simply been superimposed on other admin-
istrative tasks and teaching and scholarly activities.

In relation to the above considerations, the conser-
vatism of the academic enterprise in making adaptive ad-
justments to a rapidly changing situation is underlined
by the fact that 46% of the training programs report that
they have remained in substantially their present form
for 10 years or more. During this time, undergraduate
enrollment in almost every institution has doubled, and
the use of graduate students for conducting lower division
classes has been greatly expanded. In other words, the
striking growth in the magnitude of the problem of train-
ing and guiding teaching assistants has occurred without a
corresponding change in the methods of coping with these
enlarged demands.

Data were collected which permit a rough estimate of
the rate at which college teachers with Ph.D.'s are being
produced by these departments. Fifty-five percent of the
respondents estimated that his department granted fewer
than 25 Ph.D.'s over the past five years; the range was
from 15 to well over 100. An attempt was then made to
estimate the proportion of these graduates who had gone
into college teaching. The information here is quite
tentative because most departments appear not to keep
systematic records on this point, and the respondents
were forced to rely upon their memories. In 62% of the
cases, however, it was estimated that 80% or more of the
graduates enter college teaching, 82% were in the human-
ities; of those estimating that less than 40% became
college teachers, all were in the natural sciences. To
probe this matter a little further, the question was asked
whether the proportion of college teaching-bound graduates
had changed during the past five years; 25 of 31 natural

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science departments which replied saw no such change.
Of course, no significant change is possible in the
humanities, where a teaching career is a traditional
part of the professional role.

Administrative structures and their development

The preceding paragraphs show that the great ma-
jority of training activities are department-based and
administered. In only a few instances does the program
call for the participation of extra-departmental units
of the institution. An individual graduate student may
attend seminars or courses on college teaching offered
for example, by Schools of Education, but not as a
regular part of his formal training program. In most
cases, the structure of the department-based program is
an historical development reflecting measures to meet
needs as they arose in the past. In approximately 30%
of the departments, however, the present chairman or the
faculty member charged with the supervision of teaching
assistants, either instituted or significantly changed
the system to its present form. This fact has implica-
tions regarding the critical importance of such individ-
uals for the maintenance for experimentation and growth
of the teaching assistant program. With regard to super-
vision and administration, the department chairman per-
forms this function in about one-third of the cases
(usually in the smaller departments); in another third,
a faculty member other than the chairman is in overall
charge: in the remainder, there is no overall faculty
direction--the professor in charge of each course in
which teaching assistants work gives such guidance as he
sees fit, or an experienced graduate student teacher
serves as mentor to beginners. In nearly all cases, the
cost involved in conducting the training programs are
borne by the university.

Facilitating and inhibiting administrative factors

In the opinion of the respondents, two principal
factors, when they occur, serve to facilitate and strengthen
the operation of a training program for teaching assis-
tants: (a) The dedication that one or a few faculty members
of the department bring to the task. In very few cases
do a majority of the staff participate directly in such
training. On the other hand, there are almost no instances
in which a faculty position is considered primarily asso-
ciated with the supervision of teaching assistants. So

far as the training programs are concerned then, it is
fortunate that in almost half the cases individuals have
emerged who have been willing to assume these responsi-
bilities. (b) The second factor which was mentioned as
particularly significant to the well-being of the train-
ing programs is the interest and official stance of im-
portant figures in administrative positions, especially,
but not exclusively, that of the department chairman.
The sympathy and influence of important power figures in
the academic hierarchy, both within and outside the depart-
ment, were seen by respondents as critical factors in
operating a systematic training program.

Two factors were seen as fairly often inhibiting
the development of programs. The first, and most often
mentioned (43% of the cases), was the lack of faculty
interest in the training-supervision role. Members of
departments such as the ones studied are oriented pri-
marily toward content and scholarly activities, and they
appeared intent on creating the next generation of scholars
in their image. The result was that a sizable proportion
of the respondents felt they were faced with a massive
apathy in their efforts to develop scholars and teachers.
The other inhibitory factor--and one which is not entirely
separate from the first--is the shortage of staff for
carrying out training functions. The "normal" and tra-
ditional faculty activities of administrative assignments,
teaching, writing, and research are often seen as pre-
empting all available time. The result is that much
lower priorities are often attached to the time-consuming
tasks of developing skilled teachers.

Population Receiving Training

Virtually all respondents reported that graduate
students serving as teaching assistants were automatically
expected to participate in the formal training program.
These activities typically begin in the first graduate
year: that is, in two out of three departments and schools,
the teaching assistantship is open to students who have
just completed their A.B. degree. Under these circum-
stances, the need for readily available guidance and
supervision is apparent. It is worthy of note that in
only about 10% of the departments is guidance and counsel
by experienced teachers specifically offered all new
instructors for introductory courses.

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In the selection of graduate student teaching assistants, the most frequently reported criterion was the student's academic record, with letters of recommendation taking second place. Teaching experience, or demonstrated potential for teaching, was a rather distant third. It seems clear that in many cases these schools and departments use the teaching assistant's stipend as an inducement to attract outstanding students: the selection of prospective teachers in the usual sense of the word often does not obtain.

Formal Characteristics of Programs

The main emphasis will be given to the conditions under which teaching assistants operate, their degree of autonomy, the kinds of training and guidance that is given, and sequential changes in all of these.

In this survey, any teaching-related activity in which graduate students engaged is considered part of their training. As will be seen, most of it is on-the-job or conducted in a manner which makes clear its relevance to the conduct of classes, the presentation of material, or the treating of student achievement. Considerable variations were noted in the scope of the activities associated with a given program--ranging from a brief orientation meeting and a few brown-bag discussions to formal course offerings, regular individual meetings between teaching assistant and supervisor, and several class visits by the supervisor. Variations also exist in the degree of formal structure which obtains: some programs operate on the basis of occasional informal discussions between teaching assistant and supervisor, while others boast a clearly defined three-level hierarchy with a faculty supervisor, a cadre of experienced teaching assistants who serve as group leaders, and relatively large numbers of comparatively inexperienced "apprentices". As might be expected, the more formal features are usually associated with the larger departments.

Conditions under which teaching assistants operate

Roughly one-fifth of the respondents report that some teaching experience is either required or "expected" as part of the normal Ph.D. program in their departments or schools. The proportion of graduate students who actually

engage in teaching is, of course, much higher than this, but it is usually considered an optional activity. The teaching assistant ordinarily conducts one or two sections of a large introductory course. In almost half the cases, the average number of classroom contact hours between teaching assistants and undergraduates is from four to six per week, although 19% report nine or more hours. These are most frequent in laboratory courses, where the need for supervision is relatively high but preparation requirements are minimal. In nearly all cases, the half-time teaching assistantship is considered "standard".

In approximately 45% of the programs reporting, the graduate student teaches for three or more years. This tends to occur more frequently in humanities departments than in social or natural sciences, where the averages are closer to one and one-half years. Respondents admitted that half-time teaching for three years went beyond the requirements of training in instruction, and that it also slowed down the attainment of the Ph.D. The pattern was defended on the grounds that large numbers of undergraduates must be taught and the graduate students needed the financial support provided by the assistantships. There appeared to be a general tendency to "officially" regard the entire pre-doctoral teaching career as training, but in practice, there typically is a decided increase in the assistant's freedom and autonomy after the first year. The programs in the larger departments tend to be less flexible in this respect, unless a systematic progression toward colleague-ship with the faculty becomes an intrinsic part of the overall design.

Almost two-thirds of the programs increase the teaching assistant's stipend with increasing experience, but in the remainder this is not the case--the beginning salary is also the final one.

Teaching assistant autonomy and responsibility

This topic represents a real and concrete problem for faculty members charged with the responsibility for guiding the graduate student toward full competence as a college teacher. On the one hand, it is desirable that certain skills be acquired, and the teaching assistant become familiar with the appropriate criteria for making decisions about textbooks, teaching methods, and modes of evaluation. On the other, it is essential that the teaching assistant's imagination, energy, and problem-solving skills be called into play, and that his sense

of freedom and autonomy be increased. It appears to be
the unfortunate case that assertions are often made which
seem to represent a commitment to the "autonomy" goals
but which were interpreted as rationalizations for lack
of supervision and guidance. On the reverse side of the
coin, there are voiced concerns for the welfare of under-
graduates (that they not be subjected to the ineptitudes
of unskilled teachers) without a parallel interest in
helping graduate students acquire the skill which will
benefit them and their undergraduate students, when as
new Ph.D.'s, they join college faculties.

In considering the points reported here, it should
be borne in mind that when important decisions are made
exclusively by either a faculty supervisor or a teaching
assistant, that the adequacy of the action as training
for the latter should be examined. In almost 50% of the
cases reported, the choice of text and course content is
made by the faculty person in charge of the course; in
25% it is the prerogative of the teaching assistant, and
in the remainder, joint decisions are made. Practically
all teaching assistants are given a syllabus or course
outline at the beginning of the term. However, these
vary a great deal in the amount of detail they contain.
About 45% of them, for instance, supply a day-by-day
schedule, with a rigid control of the sequence of topics,
the time allotted to each, and the mode of treating the
material. In these cases, of course, there are few
decisions for the teaching assistant to make; in the
remainder, there is less specification of his activities.

It is worthy of note that, in five of the departments
studied, extensive use is made of closed circuit tele-
vision as a means of conducting very large introductory
courses. A common pattern is to have televised lectures
fed to multiple classrooms of section size, allowing part
of each period, or one class session each week for dis-
cussion and clarification of the TV presentations under
the leadership of the teaching assistants. One effect
of this procedure is much like that associated with the
use of a highly structured syllabus or course schedule--
it reduces the teaching responsibility of the teaching
assistant, and restricts him to certain kinds of class-
room activities. This is quite consonant with the goal
of efficient conduct of undergraduate classes, but probably
must be supplemented with other experiences to attain the
balanced goal of training future college teachers.

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In about 20% of the departments reporting, the faculty supervisor or course instructor constructs the examinations; in 30%, the teaching assistant performs this function; and in the remaining 50%, they collaborate. It would appear that it is under the last condition that the best opportunity exists for the development of the subtle and fairly technical skills involved in test construction. On a related point, teaching assistants assign course grades in 45% of the cases, and collaborate with the supervisor in an additional 36%. Here again is an excellent opportunity to introduce the assistant to the philosophical and pragmatic considerations which are at stake.

Training and supervisory functions of teaching assistants

A new development in 16 of the larger departments is the regular use of experienced teaching assistants in administrative, training, and supervisory roles within the program. Three reasons are usually offered for the adoption of this device: (a)It is asserted that an experienced teaching assistant is more regularly available to beginners, and thus better able to offer advice and guidance. (b) Having recently experienced the same problems that face the neophyte, he is in a position to offer more practical advice. (c) Finally, the use of his time to supply help on many details permits more efficient use of scarce supervisory time. In the programs in which they are used, these "master" or "senior" teaching assistants often play focal roles. Under these circumstances, careful selection is obviously important, and it is usually carried out by faculty committees rather than by single individuals.

The teaching assignment for the "master" assistant is typically reduced and he is given duties which seem to fall roughly under three general headings: (a) He may serve as a guide, advisor, helper and "mentor" for new teaching assistants. He is available for consultation on problems; he may visit the newcomer's class to make helpful suggestions; he helps shepherd him through the first bewildering weeks of college teaching. He does not officially evaluate the beginner's work, although he may serve as a group leader for several new teaching assistants. One department which uses this scheme increases the "master's" stipend for playing academic Big Brother to one beginning teaching assistant. Another assigns the master as a group leader for 7 or 8 newcomers, and

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reduces his teaching load by half. (b) A second class
of functions which are sometimes assumed by the experienced
teaching assistant, casts him in the role of administrative
assistant to the faculty supervisor, relieving the latter
of many details in the day-to-day operation of the program.
(c) The third kind of activity in which the experienced
teaching assistant engages, involves direct supervision,
including evaluation, of the progress of junior assistants.
In this capacity, the "master" takes on a quasi faculty
role, and in effect extends the sphere of influence of
the staff supervisor.

Mechanisms of training and guidance

In this section, the various devices which have been
adopted as a means of contributing to the teaching assist-
ant's teaching skills are discussed in the order of their
frequency of use. Training programs often combine two
or more of these mechanisms.
1. "Individual supervisor"
The approach most often followed is that of
"individual supervision" (reported by 84% of the respond-
ents). By this is meant that all or most of the guidance
and help which is provided the teaching assistant is
offered on an individual basis; organized or group pre-
sentations and discussions are minimal. "Individual
supervision" most often takes one or more of three forms.
The most frequent one reported stresses the "availability"
of the supervisor for consultation, informal discussion
between supervisor and teaching assistant, and occasional
contact with very little structure. This format, probably
an extension of the pattern familiar in small departments
in the past, leaves the initiative in the hands of the
teaching assistant and enjoins a fairly passive role for
the supervisor. The second most popular form of individ-
ual supervision takes the form of one or more class visits
by the faculty person to observe the in-class teaching
skills of the teaching assistant, often followed by brief
conferences. It will be seen that this mechanism requires
the assumption of more active participation by the super-
visor. A less frequent form of individual supervision
calls for regular meetings between the teaching assistant
and his faculty mentor. These may vary from brief conver-
sations at "critical" points in the term (such as the
construction of a quiz or exam) to weekly sessions lasting
an hour or more.

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2. "Brown-bag seminars"

The second most frequently used device in training programs are the informal meetings("brown-bag seminars") of all teaching assistants, or all assistants teaching in a given course. About 65% of the programs report such meetings. The modal frequency is one meeting per week, for one semester, although a few continue for a year or longer. The most frequently mentioned activity in such meetings is "coordination of the various sections", giving the impression that they are mostly concerned with administrative matters. These group meetings are also frequently combined with some form of individual supervision.

Service as an assistant to regular (faculty) instructor is reported in 56% of the programs. This role entails setting up lab equipment, grading examinations, tutoring students who are having difficulty in the course, reading papers and laboratory reports, drawing up reading lists, and checking homework problems. The teaching assistants also regularly observe the classroom management by skilled instructors, 41% of the programs report this device and they tend to be the same departments where the teaching assistant assists a faculty member rather than conducts a section of a course on his own. This combination tends to put the graduate student in a fairly passive satellite role , unless it is supplemented or succeeded by activities calling for more autonomy and responsibility.

The popularity of pre-service orientations of teaching assistants seems to be increasing. About 40% of the programs now conduct meetings before the beginning of fall semester classes at which various administrative matters are clarified, such as departmental and college rules, the assignment of sections, forms, and texts, and the distribution of syllabi. Most are only two to three hours in length, but 19% of the departments devote from one day to two weeks to a systematic presentation of some of the problems in both content and teaching, which the new teaching assistant will face. At present, extended pre-service training is used by humanities departments, but this arrangement may have special advantages for the laboratory disciplines. Most science departments which have conducted such sessions report that opportunities to work through the first several experiments of the undergraduate course have positive effects on the morale and self-confidence of the neophyte teachers.

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Only 24% of the departments and schools offer formal courses or seminars in college teaching. These courses typically meet 30 or more times per semester and carry up to three hours credit. However, attendance by teaching assistants tends to be quite low, unless the course is required by the department. This is similar to the reception given courses in higher education, or in teaching methods, which are offered by schools of education.

Sequential experiences in training

Approximately one-third of the training programs regularly attempt to match the teaching assistant's increasing competence with roles and tasks calling for increased responsibility and freedom to make decisions on his own. That is, they may begin training with considerable structure and with close supervision and guidance, and systematically reduce or remove these constraints as the teaching assistant's competence develops. These evolutionary changes are informal and are usually made on an individual basis, but in a few programs they are a built-in part of the training scheme. Representatives of these latter departme ts make the point they are trying to attain the twin goals of quality undergraduate teaching in their own university, and Ph.D. graduates who are completely equipped to carry out the duties of a college teacher.

So far, three general patterns have emerged. In the most common one, the beginner first assists and observes in the course he will later teach. In this way, he refreshes himself on the content of the course and becomes familiar with methods which have been developed by others and upon which he can build his own approach. After one semester in this role, he teaches one or two sections of the same course. A second procedure is to mix the observation and teaching roles in the same semester. In this plan, sections taught by experienced instructors progress through the content of the course a little faster than the sections taught by beginners. The new teacher sits in one of these "demonstration" sections, observes teaching procedures, and content areas where students have difficulty, and uses this knowledge in conducting his own class. This scheme, of course, requires that all sections follow the same sequence and move at about the same pace. The third pattern calls for the teaching assistant to first teach a section in the introductory course of his

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discipline, and, with increasing subject-matter and
teaching competence, to advance to honors sections or
to discussion sections of intermediate-level courses.
As yet, none of these schemes has become widespread,
but they appear to be increasing.

Additional training devices and facilities

One university makes regular use of an observation
classroom, in which one wall has been replaced by one-
way glass and a large viewing room constructed. With
the addition of microphones suspended from the ceiling,
it is possible to hear and see an ordinary class being
conducted without disturbing teacher or students. The
room is shared by several departments and is in regular
use. Early in the fall term, all new teaching assistants
in these departments observe, as a group, one or more
classes each week, accompanied by a faculty supervisor
or an experienced teaching assistant who elicits discus-
sion and answers questions about activities in the class-
room. A second university is planning a similar instal-
lation.

About 10% of the departments studied supply their
new teaching assistants with "instructors' handbooks",
which typically provide many useful and practical details
relevant to their teaching activities. These are in
addition to course syllabi or outlines, and contain such
information as the department and college regulations
governing the conduct of undergraduate classes, practical
tips on how to get discussions going, the pros and cons
of teaching methods and grading practices, and outlines
of the teaching assistant's duties.

Mention should be made of another idea that is not
yet widely used but appears to hold promise for certain
aspects of training in teaching. In an effort to sharpen
teaching assistants' sensitivity to the social dynamics
of the teaching-learning situation, one university tape
records class or tutorial sessions as a basis for discus-
sion of the intellectual, subject-matter, and interpersonal
problems involved. The tapes are not considered as teach-
ing paradigms but as real-life examples of the
interaction that occurs between teacher and student. A
second university is currently extending this idea by
using videotapes of actual class sessions as material for
discussion by groups of teaching assistants.

Patterns of formal characteristics

So far, the analysis of formal characteristics of
the training programs has been in terms of individual
mechanisms. It might be enlightening to find whether
or not clusters of such devices tend to co-occur. In
general, it appears that they do not. However, there
seems to be a slight trend for programs which offer a
graded sequence of training experiences also to have
formal courses, systematic observation and "assisting"
of older instructors, and a relative concentration of
test supervisors. An attempt to find a cluster consist-
ing of informal and individual supervision, relatively
high teaching assistant autonomy, informal meetings
and a lack of formal sequence was unsuccessful. The
number of elements is so great that a hugh number of
combinations is possible--and almost all of them seem
to occur.

Substantive features of training programs

The previous section of this report dealt with the
procedural forms for the training programs, Clearly it
is possible to attain a wide variety of goals through
the use of any given procedure. For example, either
formal courses or individual meetings between teaching
assistant and supervisor could be used to develop the
skills involved in drawing up realistic objectives for
a class session or a section of a course, or for practice
in designing reliable and valid tests and other topics
involved in the day-to-day conduct of classes.

This section seeks to identify those substantive
areas which seem related to the teaching enterprise and
in which respondents report specific efforts to instruct
teaching assistants. It represents, then, the degree of
consensus that obtains as to "what every new college
teacher should know". The topics will be reported here
in the order of their frequency of occurence.

As might be expected, the most common concern is
with concrete instructional procedures--those methods
of presentation that have been found "to work" in some
sense, and that seem to produce the greatest understanding
and performance by students. This is the kind of infor-
mation that is passed on from experienced teachers to

beginners. Sixty-four percent of the programs report
specific activities in this area. The remaining 36%
implicitly take the stance that each teacher must learn
to structure the problems for himself and to work out
his own solutions. It is probable that informal meet-
ings of teaching assistants associated with a given
course, or individual contacts with a supervisor are the
most frequently used methods of attaining this goal.

The second most common area of conscious attention
is the planning of class sessions, sections of courses,
or (sometimes) entire course content. This activity
combines curricular considerations in interaction with
the identification of the means available for achieving
subject-matter goals. Almost one-half of the respondents
mentioned this topic, involving as it does the develop-
ment of course outlines, syllabi, reading list, etc.

More than one-third of the departments take special
cognizance of the need for college instructors to develop
some sophistication in the designing of tests, the develop-
ment of appropriate criteria for the choice of test item
forms, the analysis of test results as a means of improving
teaching, and a consideration of the problems associated
with different philosophies of grading. The completeness
with which these topics are studied varies greatly, from
the learning-by-doing approach to full considerations of
the relation between item form and course objectives, and
item analysis of test results to ascertain specific areas
in which instruction is not eliciting in students the
level of achievement desired. Many more programs operate
on the learning-by-doing end of the continuum than on
the more formal, technical end. Obviously, casual intro-
ductions to testing skills can be, and are, carried out
with little structure, whereas attempts at developing a
more knowledgable handling of the problems are most often
associated with formal presentations (i.e., seminars and
classes).

Ranking fourth in frequency (25% of the programs
studied) are presentations of the philosophy, history
and problems of higher education, or of the objectives
and philosophy of a particular course. Interestingly
enough, 21% of the respondents report specific efforts
to increase the subject-matter competence of teaching
assistants as part of the training program. This often
calls for review of the course topics before taking

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them up in class--but in greater depth than that used in pre-
sentations to undergraduates. This procedure aims toward
increasing the teaching assistant's grasp and understanding
of the phenomena so that his explanations to undergraduate
students will be more complete and helpful. Laboratory
disiplines sometimes ask teaching assistants to conduct in
advance the experiments which their own students will later
perform. The intent being to alert the teaching assist-
ants to the points where students customarily have prob-
lems and to facilitate the assistant's ability to explain
and supervise the operations. It would appear that the
same objective could often be achieved by careful design
of the teaching assistant's own graduate courses--and
indeed this idea was mentioned by one or two respondents.

Two areas in which there seems to be little activity
are those of the psychology of learning, thinking, and
motivation as applied to the classroom, and the intro-
duction of the teaching assistant to other facets of the
role of the college teacher beside the conduct of classes.
Some programs, in attempting to deal with the latter point,
encourage teaching assistants to attend some departmental
meetings, to serve as academic advisors to undergraduates,
to give "guest" lectures to large introductory courses
(a function usually reserved for faculty), and to parti-
cipate in faculty committees. However, the departments
that do most of these things are rare.

Evaluation of programs and of teaching assistants

Previously published reports have supplied little
systematic information on the methods used to assess the
effectiveness of training programs or the performance of
the individual teaching assistant. The present study was
thus designed to determine the current state of the art.
The reason for the scarcity of published data quickly
became apparent when the question was asked. Almost
universally, the first response referred to the difficulty
of specifying the appropriate criteria for making evalutive
judgments.

Nonetheless, in response to an inquiry of how the
training program was evaluated for effectiveness, repre-
sentatives of 98 departments replied. It was found that,
partly because of the lack of "hard" information, many
programs make use of more than one measure with the
general intention of validating one against another. On

the other hand, 24% of the respondents reported no systematic evaluation, often with the statement that they "wouldn't know how to go about it". Even here, of course, informal, intuitive judgments are often made. Under these conditions, personal opinions of interested and affected parties are almost certain to play central roles in the evaluation process. Four possible sources for such opinions suggest themselves immediately: the teaching assistants, the faculty, Ph.D. graduates of the department, and undergraduates. All are used but not equally often.

The use of data from undergraduates (usually in the form of course evaluations) presents some problems in interpretation. It is difficult to associate course evaluation responses to the training program unless there exists some baseline reflecting "control-group" conditions without the training program. The effect of large scale changes in the training for teaching assistants would be useful, but even here the need for caution in drawing conclusions should be obvious. This point is worth noting because 20% of the programs report the use of student evaluations in estimating the success of the training given teaching assistants—indeed 11 respondents report this as the only measure. The same interpretive caution holds true if undergraduate academic performance is taken as a measure of training—17% of the respondents referred to this as a criterion.

The most frequently cited source of opinion (38% of the cases) was the faculty, but most often from those directly involved in the training. Sometimes those were based on personal observations of the teaching assistants' performance, in others it represented a global impression of the effects of the program. The second most popular source was the teaching assistants themselves. About 30% of the programs acknowledge use of these data, usually gathered informally in conversations with the assistants.

Interestingly enough, only 5 departments reported post-Ph.D. follow-ups on their graduates who entered a college teaching career. However, this technique was adopted in a recent survey carried out on a national scale (11).

In response to the question about the methods used
to evaluate the teaching assistant's performance, 126
departments replied. By far the most common criterion
was faculty opinion--almost all respondents report that
global, impressionistic judgments play a large role here.
In less than half the cases, however, is this opinion
based on actual visits to the classroom to observe how
the teaching assistant performs. Most respondents refer
to informally gathered information and feedback from
undergraduates, including course evaluations. It should
be pointed out that several respondents asserted that
class visits are not particularly useful, either for
evaluation or for guidance. They pointed out that the
anxiety level of a teaching assistant during an occasional
visit is apt to be high, and furthermore, that one class
visit during a term (the modal number) does not afford
an adequate picture of his teaching. Others suggested
that effective teaching is to be judged by student per-
formance rather than by particular teaching stratagems
the assistant may use. It is worth noting that the
appropriateness of class visits as a measure of teaching
performance has not gone unchallenged.

Other procedures used to evaluate teaching assistant
performance include undergraduate evaluations of courses
(25% of the program); the comparative achievement of
students in the various sections of a large multi-section
course; the graduate student's own academic performance.
It should be apparent that a policy of comparing inter-
section student achievement scores would almost inevitably
be associated with a great deal of structure in the con-
duct of a course.

The general impression from this part of the survey
was that systematic attempts to evaluate the performance
of teaching assistants--and improvements in that perform-
ance--are fairly unusual. Such attempts are almost non-
existent in the case of evaluations of the programs them-
selves.

Opinions regarding strong and weak points of current programs

The respondents in each of the 146 departments and
schools indicated those aspects of the training programs
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need of improvement. A total of 152 judgments were made

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of "successful" features by representatives of 99 different programs. These are classified into four general groups:

1. Approximately 37% of the successful features indicated benefits accruing to the organizational and administrative aspects of conducting the courses in which teaching assistants are functioning. These include the fact that all sections are moving at the same pace, examinations are common in content and the administrative and classroom needs for instructors of different sections are being met without undue difficulty -- in short -- that the logistical job is getting done. It is perhaps significant that more than one-third of the total number of responses imply that the principal advantages concern the administrative and instructional needs of the department rather than the training of the teaching assistants.

2. The second most numerous group of replies (29%) dealt with the guidance being provided teaching assistants by "master" teaching assistants or by supervisory faculty. There appeared to be a clear implication of satisfaction with the supervised development of neophyte teachers which allowed experienced teachers to pass on skills and ideas to the apprentice instructor.

3. Almost as frequent (22%) were comments directed toward the quality of the teaching assistants and their development as teachers. This would appear a step further toward centering on the concerns, needs, and characteristics of the assistants themselves and a move away from more direct institutional and logistical interests.

4. The remaining 7% of the comments tended to go beyound teaching per se and to concentrate on the benefits which appear to accrue to the undergraduates resulting from the special training given the teaching assistants. These judgments tended to come from departments with heavy undergraduate teaching commitments.

Representatives of 99 departments and schools responded to the question about needed improvements in training programs with a total of 173 suggestions. It will be noted that there appears to be little concern about the need for further improvements in administrative or logistical arrangements; attention is focussed more directly on the teaching function. Apparently, the mechanical problems

of organizing and coordinating multi-section courses have been largly solved or accepted as an inevitable and continuing problem.

Concern with the often conflicting interests between teaching on the one hand and research and other scholarly activities on the other was present in almost half the replies. This usually took the form of decrying the relative lack of interest in teaching by both graduate students and faculty and of proposing better selection and/or recruitment procedures in an attempt to redress the balance. It was consistently pointed out that research assistantships lead directly to dissertation topics, to expeditiously achieved Ph.D.'s and to professional advancement, whereas teaching activities tend to delay the progress of the student through graduate school. In addition, it was asserted that in many disciplinary areas, teaching is only spoken of soto voce. In the face of this kind of orientation, equalizing stipends for research and teaching assistantships was seen to be, in itself, a fairly ineffective attack on the problem of providing adequate training for the teachers of a sizable percentage of our undergraduate courses.

Approximately two-fifths of the respondents saw a need for more direct training and guidance of teaching assistants. This includes a number of calls for pre-service sessions before the beginning of the fall term, and for more formal instruction in the problems faced by the college teacher and his resources for dealing with them. One important component of this was the voiced need for released time in which faculty members could contact and guide the assistants in their teaching activities. These respondents believed a great deal more could be done if supervising time was made available.

As a final note only one respondent mentioned dissatisfaction with current procedures for evaluating the training program or teaching assistant performance. Whether this finding was due to a general lack of concern with the evaluation problem or to a belief that evaluation is adequate as it is now done or to a resigned acceptance of the idea that evaluation is not feasible, is not known.

DISCUSSION

The departments and schools cooperating in this investigation reflect a few common and rather general attitudes vis-à-vis the use of teaching assistants. The assistantships are most often seen as a means of providing undergraduate instruction and of supporting graduate students; they are seldom seen as a vehicle for the preparation of college teachers. The primary focus is toward seeing that prescribed material is presented to students in a certain sequence, that multi-section courses progress toward common goals, and that specific administrative procedures are followed.

However, one base-line attitude takes as given the lack of graduate student interest in teaching. Hence, there is a felt need for faculty control of most details of the program in the belief that the teaching responsibilities will not otherwise be adequately met. The faculty of departments whose representatives expressed this sentiment were reported to be heavily research-oriented and tend to devote relatively little time and effort to teaching activities. This stance is usually accompanied by a large measure of faculty control of decisions affecting courses and the way they are conducted. Such an attitude tends to be operationalized in terms of highly structured syllabi and relatively little delegation of responsibility to the teaching assistants. Mechanisms for dialogues about teaching (where they exist) are usually so constructed that the faculty supervisor is seen as a primary giver of information as well as the evaluator of performance. Distrust of the competence of teaching assistants in general is rather often verbalized. Frequently, this situation results in a high degree of predetermined structure for the teaching assistant but with little supervision of his performance.

Another dominant attitude appears to have dual foci --the adequate presentation of subject-matter while fostering the development of teaching skills in the assistants. Representatives of departments taking this position tend to speak highly of the caliber of their teaching assistants. Attention may still be focussed on departmental teaching needs but there seems to be a significantly greater willingness to entrust responsibility to the teaching assistant. Here the assistant enters more completely into the planning and implementing of the course. Syllabi tend to be more loosely constructed, and the young

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teacher is encouraged to develop his own initiative.
Such a program usually involves more supervisory time
by experienced teaching assistants or by faculty. Another
mark of the dual-focus is the attempt to develop the au-
tonomy and freedom of the teaching assistant by providing
relatively large amounts of supervision and guidance early
in his teaching career but less so as he gains experience.
Mechanisms are created to facilitate interaction between
teaching assistants, and they take a more active role in
departmental affairs and are accepted as junior colleagues
by the faculty.

Teaching assistants are usually seen as performing
a useful service to the department but not one that is
professionally advantageous to the graduate student him-
self. For example, no record may be kept of the teaching
assistant's performance as a teacher. Furthermore, it
is not uncommon for the new teaching assistants to be
given brief talks by department chairmen and/or college
deans assuring them that theirs is an important task.
However, when guidance would be helpful, particularly
in the first few weeks, there is little official action
or concern manifested for the problems of these novice
teachers. It would not be surprising, therefore, if
teaching assistants conclude that their tasks are not
important since the institution invests very little time
and energy to supervise, help, and evaluate their efforts
--as the department would do if the activity were in
fact a matter of real consequence. Despite these cir-
cumstances, it is significant that many assistants de-
vote rather large amounts of attention and effort to
their teaching activities and in other ways to demon-
strate the acceptance of their responsibility to their
own undergraduate students.

It must not be forgotten that two-thirds of the
faculty members who provide guidance and help to the
new teaching assistants also carry, according to their
own reports, normal departmental administrative and
teaching loads. With their strong dedication to schol-
arship and research, faculty members tend to view "peda-
gogy" as something of a second-class endeavor. In con-
sequence, the supervisors of teaching assistants, unless
they have independently established their positions as
scholars, occasionally expressed doubt about their oppor-
tunities for professional advancement. In general, this
survey confirms the tradition that the status of a
faculty member in the eyes of his colleagues depends
almost wholly on his scholarly productiveness and very

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little on activities related to the training of teaching assistants. These values may be less true when the official stance of the department--most often personified in the chairman--involved forthright support for the teaching assistant training program. The inference seems clear that substantial strengthening of training programs will depend heavily on fairly high-level administrative decisions within the department.

In this connection, distinct institutional differences were observed in the amount of attention given to teaching assistant training. The fact that some campuses seem to be characterized by energetic efforts in several departments implies a stronger and more active interest in the teaching assistant problem at the supra-departmental level. It will be recalled that the first contact with each institution was at a high administrative level where the request was made that the investigator be referred to those "departments which are most active in teaching assistant training, and/or appear to have the most effective programs." References were nearly always made, but when an inquiry was addressed to the named departments, a not uncommon response was to the effect that their activities could not honestly be described as a training program but as an ad hoc arrangement to handle immediate staffing problems in undergraduate courses. The conclusion seems warranted that significant changes in training programs are closely related to specific and vigorous central administrative action as well as at the department level.

The recent literature dealing with the concerns of higher education carries several warnings of an impending shortage of college teachers, e.g., Cooper (12) and The Flight from Teaching (19). These estimates tend to be balanced by the more conservative views of Berelson (5) and Cartter (10) who point out that the production of new Ph.D.'s is likely to meet all reasonable demands within the next few years. It is here suggested that the question may not be properly put since the issue has been based on changes in the proportions of Ph.D.'s who enter (or continue in) college teaching. It is quite probable that the greatest absolute increase

in the ranks of college teachers is and will be
among the teaching assistants. For instance,
Cartter's (10) data indicates there was an average
yearly increase in the production of Ph.D.'s of
about 1200, for the period 1961-65. Of these 45%,
or 540, are estimated to have joined the ranks of
college teachers. The same report contains infor-
mation that permits an estimate of the average
yearly increase in "junior instructional staff"--
mostly pre-doctoral teaching assistants. This
increase, in full-time equivalents, is 900--all of
whom by definition engage in college teaching. Here,
then, is a rapidly expanding corps of de facto
college teachers. The increase in the number of
new doctoral graduates who enter college teaching
may not be as important as the number of teaching
assistants added to departments' instructional
staffs. It may be suggested that the training and
supervision of assistants is functionally more
significant with regard to undergraduate instruction
in large universities than is the production of
more Ph.D.'s. If this is indeed the case, a re-
orientation of our efforts appears to be indicated.

Further inferences may be drawn regarding the
question of whether training in college teaching
is better given early or late in an individual's
graduate career. Our data show that two-thirds
of the present teaching assistants began serving
in this capacity in their first graduate year.
Various plans, such as those reported by Dunkel,
(16) and Middle-brook (28), take the most appro-
priate time to be before the attainment of the
doctoral degree, when the problems of assuming the
role of a full-time faculty member are most salient.
Furthermore, a persuasive argument such as that of
Diekhoff (14) can be made that such training in
instruction should be left to the first employing
institution, and not assumed by the degree-granting
university at all. However, since a sizeable pro-
portion of undergraduate credit hours is gained
in courses or sections taught by teaching assistants,
it is clear that in the present real world, these
options are not really open. If the quality of
undergraduate instruction in universities is not to
suffer, it would appear that more concerted measures
must be taken to assist graduate students in their
teaching activities.

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One area of instruction-related activity in
which faculty members often profess a feeling of
insecurity is the evaluation of student achieve-
ment. A great deal of specific and useful infor-
mation is available on the topic, but it is prob-
ably not widely utilized by the subject-matter
departments. If the point is accepted that the
content and the form of classroom testing have a
strong influence in the direction of student's
study efforts, the importance of reliable and
valid testing procedures becomes an extremely
relevant aspect of teaching skill. Every large
university has on its campus tests and measure-
ment specialists possessing the technical know-
ledge which could contribute to raising the quality
of the teacher-made tests to measure student achive-
ment. It would appear that inter-departmental
workshops in testing could make efficient and
effective contributions to the training of teach-
ing assistants in respect to their evaluating respon-
sibility as a college teacher.

In conducting the investigation, time did not
allow the systematic sampling of opinions from the
teaching assistants themselves about training in
instruction. The views and procedures presented
here are, then, those which may be considered
"official." A broad-scale study by Clark (11) suggests
that a quite different picture of the functional
aspects of training would have emerged from con-
tacts with the recipients of the training. Clark
reported the views of new faculty members who had,
as graduates, served as teaching assistants in
many of the same universities studied here. Briefly,
they reported that their most helpful experience
was actual classroom teaching with guidance. How-
ever, over half of them asserted that such guidance
was minimal, and over one-third that their work was
seldom evaluated. As might be expected, they held
that formal courses in higher education and in
teaching methods were of little benefit. Findings
such as this should cast some doubts as to the con-
sistent effectiveness of the "individual supervision"
of teaching assistants which is claimed by a large
majority of the departments contacted in the
present study.

A note is in order about the manner in which
teaching assistants are evaluated. The most
familiar device involves one or two classroom visits
to observe the teaching assistant's behavior in con-
ducting a class. In nearly all cases, such visits
are arranged in advance, and it is to be expected
that what is seen is a special performance which is
more successful in tapping the teaching assistant's
capacity (under stress) than sampling his usual
level of activity. In addition, such procedures
implicitly assume that virtually all the important
dimensions of the teaching assistant's contribution
are clearly evident in the way he deports himself
before a class. No respondent reported attempts
to determine whether assistants could clearly
state their personal objectives for the course,
or whether undergraduates showed progress in
attaining those objectives.

Despite the preceding observations, it would
not be accurate to close this discussion without
reporting a fairly consistent impression that in
many departments, there is growing concern for the
problems of training graduate students as teachers.
In most cases, the logistical tasks of staffing
and conducting multi-section courses have apparently
been surmonted and the investigator was left with
the feeling that many departments and institutions
are ready to take the next constructive step--the
better preparation of teaching assistants for
their classroom roles. If nothing else, the interest
in, and the cooperation extended to, the study offer
abundant evidence on this point.

IMPLICATIONS AND RECOMMENDATIONS

This section of the report will consist largely
of a proposed model for training teaching assistants.
In the main, it represents an integration of devices
and mechanisms which are currently in use in one or
more departments and which have promise of contribu-
ting significantly to teaching performance. In addi-
tion, a few recommendations will be made regarding
possible means for the systematic evaluation of both
teaching assistant performance and of the programs
themselves. As far as we know the suggested train-
ing procedures and/or evaluation measures are not
currently in use.

A Model for a Training Program

A viable model for a training program should meet the following criteria: (a) Each teaching assistant will receive only such instruction and guidance as is necessary and sufficient to enable him to plan and conduct an undergraduate class in his area of subject-matter competence; (b) A model should be sufficiently flexible to serve the basic needs of the various disciplines; (c) All aspects of a training program should be directly applicable to real instructional problems and the training time be kept to a minimum; (d) The most useful form for a training program is an evolutionary one, in which systematic and continuing self-evaluation is a design feature; and (e) An efficient program will minimize increases in faculty time allotted to supervisory activities.

It is clear that unambiguous and vigorous support for a training program must be given by individuals who occupy positions of power and influence in the department and/or the institution. This appears to be a sine qua non for the establishment and continuation of the successful programs that were observed in the present study. It could be, then, that the first step is convincing appropriate power figures of the desirability of the effort, and enlisting their active support.

Some of this country's most productive but privately controlled institutions do not face the necessity of dealing with rapidly expanding undergraduate populations, and have little need of teaching assistants for on-campus instruction. However, a sizeable proportion of their doctoral graduates enter college teaching, many times without ever having faced the problems attendant upon preparing for and conducting an undergraduate course.

It is suggested that every graduate student who contributes to the instruction of undergraduates should receive some amount of guidance and supervision. However, the various subject-matter areas differ greatly in the proportion of their doctoral

graduates who enter college teaching careers. If
an individual does not aspire to such a career,
but, as a graduate student, serves some minimal
amount of time as a teaching assistant, he should
nevertheless, be provided such guidance as to enable
him to carry out his assigned duties adequately.
On the other hand, a teaching assistant who plans
a teaching career should receive more extensive
training. More training in the case of the first
individual is wasteful; less in the case of the
second may be a dereliction of duty.

A training program that is likely to prove
most useful to a beginning teacher should start
out with considerable structure and direction.
As he gains in self-confidence and competence the
training program should encourage the growth of
his initiative, autonomy and responsibility. Further-
more, it is desirable to establish a common set of
dimensions along which the teaching assistant's
performance can be assessed throughout his training.
If this is done, it should be possible to obtain
more accurate estimates of his improvement as a
teacher and thus, indirectly, evaluate the contri-
butions of the training program.

The "optimal" model that emerges from the
survey is composed of three functional stages
labelled for convenience: apprenticeship, assis-
tantship, and instructorship. Each stage should
be defined in terms of the teaching assistant's
competence and responsibilities, rather than in
terms of time periods, such as academic quarters,
semesters or years. That is, as the individual
shows himself ready to undertake more demanding
teaching tasks, they should be available and wait-
ing for him.

The "apprentice" stage should be essentially
a pre-service period, one that does not entail
conducting a class on a regular basis. During
this time, the individual familiarizes himself
with the content, approach and structure of the
course he will later teach. He may set up labora-
tory equipment, and should actually conduct the
experiments which undergraduates carry out in the
course. He may help draw up reading lists, do

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bibliographic research, and will regularly observe the
teaching of one or more experienced instructors, by
means of class attendance or videotapes, films or one-
way viewing arrangements. These should be accompanied
by brief conferences at which the instructor explains
the rationale for his approach and methods. The ap-
prentice will become familiar with the departmental and
college regulations governing the conduct of under-
graduate classes. He will help construct and score
exams, and read and score papers and laboratory reports.
He will have available a copy of a Handbook for New
Instructors, which will provide information on the fa-
cilities and resources available to him and relevant
to the teaching task. He will plan and conduct a few
(four or five) class sessions under observation of an
experienced instructor, who will then make suggestions
and criticisms of his performance. During this period,
he will not have primary responsibility for a specific
course, but will function as an assistant to an instruc-
tor--an experienced teaching assistant or a faculty
member--who does. He would, however, be making both
direct and indirect contributions to the conduct of
the class.

In the second ("teaching assistant") phase of the
program, the individual will be given a general outline
of the course and will be expected to conduct a class
of his own, planning class sessions, choosing methods
of presentation, and evaluating student achievement.
He will have available to him on a regular basis, the
advice and guidance of an experienced teaching assis-
tant--an "instructor" as the term is used here. During
this time also, h^ will participate in a workshop on
classroom testing, focusing his attention on the de-
velopment and analysis of the tests he uses in his
class, and on the problems of incorporating these in-
struments into his overall teaching plan. There should
also be available to those for whom it is appropriate,
training in group dynamics and in programed instruction
(as a model more than as a technique). This stage
should be marked by consistent supervision--and with
special emphasis toward remedial measures. An evalua-
tion scheme would be especially valuable at this point.

It is recommended that only teaching assistants
with an expressed interest in college teaching should
advance to the third ("instructor") phase of the pro-
gram. At this level, the individual should be capable
of structuring the content of an entire course, choosing

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appropriate texts and readings, drawing up syllabi, and conducting classes. In addition, however, he may assume a guiding and/or supervisory role relative to trainees in the apprenticeship or assistantship stages. In order that he may carry out these duties, his teaching load should be reduced and his guidance functions within the training program be considered part of his work assignment in the program. The "instructor" should be better able to relate to the apprentices, having recently dealt with the same problems, and he should also be much more readily accessible than faculty supervisors. Overall direction of the program will, however, require faculty leadership, but most of the day-to-day details would be handled by "instructors."

It should be recognized that the guidance activities of the "instructor" are part of <u>his</u> training as a prospective college teacher. In helping the beginner and explaining his reasons for adopting certain strategems, the "instructor" is compelled to examine his own ideas and convictions and to develop a coherent conceptual framework for his advice and actions.

Lastly, in this phase the "instructor" should participate to a limited extent, in departmental affairs, such as service on faculty committees, attendance at some faculty meetings, participation in curriculum review, and pre-planning of courses. The aim here is to introduce serious young teachers to the full range of extra-classroom and administrative aspects of the college teacher role.

Evaluation of Teaching Assistants and Training Programs

Improvement is needed in the current procedures used to evaluate teaching assistant performance and program effectiveness. The remainder of this section embodies some proposals which would be useful in this regard.

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Many attempts have been made to define and assess "good teaching"--so far without notable success. It may be possible to avoid the impasse to which this line of thinking leads, however, by framing the question somewhat differently and focussing on effective teaching. It is suggested that the proper criterion of effective teaching is student performance, and that the proper measure is a qualitative, and where feasible, a quantitative comparison between this performance and the teacher's objectives--in whatever form the latter are defined and stated. An appropriate measure of teaching effectiveness, then, is the degree to which the students achieve the objectives which the teacher has set for the course.

This suggestion implies that teaching effectiveness cannot be measured at a single point in time, such as by occasional observations of classroom behavior. There are at least four critical points at which performance can be assessed:

1. It is apparent that effectiveness can only be measured if instructional goals are known. Therefore, the first information needed is a statement of the teaching assistant's objectives. The supervisor can then judge them for appropriateness (i.e., scope and sophistication) and feasibility (i.e., reasonableness in terms of the capacities of the student population making up the class). In the apprentice stage, these judgments will be made of the teaching assistant's objectives for a single class session: in the teaching assistant stage, they can be applied to objectives for a sequence of class meetings dealing with a broad topic within the course; and in the instructor stage, the objectives in question will be those for an entire course.

2. The second point at which evaluation data can be collected is the teaching assistant's statement of how he intends to measure or identify the attainment of his objectives. These statements can be judged by the supervisor in terms of appropriateness, adequacy of coverage, and the discriminating power of

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the assistant's proposed measuring devices
and procedures.

3.   The third point at which teaching effec-
tiveness can be assessed is the degree to
which student performance approaches the stated
objectives. Here the supervisor can make
qualitative, and, where reasonable, quanti-
tative comparisons. The results of these com-
parisoms will be forwarded to the teaching
assistant to serve as a basis for future
improvement.

4.   The fourth point at which evaluation can
be carried out is in determining the degree
to which the teaching assistant adjusts his
objectives, teaching methods, or testing
devices in the light of the feedback generated
in the preceding step. New teachers will not,
of course, achieve most of their objectives,
but any serious teacher can be expected to
adapt his procedures in ways that will bring
student performance more in line with his
objectives, (or vice versa).

By applying an evaluation scheme somewhat like
the above, it should be possible to trace the growth
in the teaching assistant's effectiveness as a teacher.
When a teaching assistant can state instructional
goals which will be accepted by his supervisor as
proper and attainable, can devise testing procedures
which will indicate when the goals have been achieved,
and can then demonstrate (either objectively or in
the judgment of an expert) that his students have
indeed achieved them, it is reasonable to identify
him as an effective teacher. It is assumed that a
reliable and valid measure of teaching effectiveness
will show predictable changes at each of the four
points outlined above--changes which can be associated
with greater experience and training, and that experi-
enced teachers will, on the average, score higher on
these dimenions than will beginning assistants.

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It is proposed that the evaluation of the
training program, per se, should follow a roughly
analogous course--that is, a clear statement of
the functional goals of each device or procedure
and a comparison between this statement and the
achievement of those goals. A few of the specific
evaluation devices that may prove useful are:

1.   Comparison between the goals of each
phase of training with the attainment of
those goals (as indicated above).

2.   An evaluation of the teaching effective-
ness of Ph.D. graduates before the introduc-
tion of the training program, will provide
a partial baseline against which to judge
changes.

3.   The four basic evaluation points can be
used to identify changes in the mean level of
teaching effectiveness of participants and
non-participants in the program.

4.   Records can be kept of any changes which
occur in the proportion of graduating Ph.D.'s
who enter college teaching, and of available
indices of career success.

The preceding model is conceived as an evolving
entity and the feedback which will result from regular
and systematic evaluation will assure that its rele-
vance and flexibility is preserved.

SUMMARY AND RECOMMENDATIONS

The published literature presents little precise
information on the methods currently being used to
attract and to prepare young scholars for the college
teaching career. A large majority of graduate students
do serve as teaching assistants at some period during
their graduate education, but there has been little
detailed information on the extent and nature of the
pedagogical training they receive. For these two
reasons, it was decided that the proper focus for a
study of college teacher training was the teaching
assistantship in our major universities. The issues

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become especially important in the light of recent statements about the number and the quality of the college teachers being produced.

This investigation was designed to provide (a) a report of recruitment activities in a number of prominent institutions, (b) a factual summary of the administrative, formal, and substantive features which are characteristic of the more active training programs in some 40 - 50 of our universities, and (c) a description of a general model for a training program which might emerge from an integration of the most progressive aspects of the programs studied.

Letters were sent to administrative officers of 50 large universities, requesting identification of the "three or four most active (teaching assistant) training programs" in the institution. On the basis of the replies to these letters, questionnaires were sent to 193 departments and administrative officers in 44 institutions. From this and other information, 20 universities were selected for on-site visits and structured interviews were conducted with 105 department chairmen, teaching assistant supervisors, and faculty members involved in training. In all, data were collected from 71 humanities, 14 social science, and 51 natural science departments, plus 10 professional schools and 26 administrative officers above the department level, representing a total of 42 institutions.

Information on recruitment programs was obtained during the 20 on-site visits. Only four of the institutions report continuing, systematic, efforts toward identifying potential college teachers at the high school and undergraduate college levels and encouraging their interest in such a career by means of personal contacts, attendance at conferences on college teaching, and acceleration of their academic prepartion. The remaining universities tend to rely on informal, decentralized activities.

Information about training programs, obtained from mail questionnaires and from on-site visits, was codified and tabulated under five general headings: (a) administrative factors, (b) the population receiving training, (c) formal characteristics, (d) substantive features , and (e) evaluation of training program and of teaching assistant performance.

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It was found that nearly all training programs are department-based and virtually all relevant activity is controlled by, and confined to, department personnel. Two administrative factors appear to be crucial to the establishment and continuance of training programs: (a) The active involvement of senior members of the faculty who command the professional respect of their colleagues and who stand in positions of influence. (b) The commitment of individual faculty members who have the interest and capacity to serve as effective administrators of the training program. Sometimes these two roles are combined in the same individual (most often the chairman) but in large departments, they tend to be separated.

In about one-third of the departments there seems to be no overall supervision of teaching assistant training--each faculty member provides such supervision and guidance as he sees fit for the assistants who work in his course. Interestingly enough, despite the publicity given in recent years to the need for more college teachers, it was the opinion of our respondents that the proportion of their Ph.D. graduates going into college teaching has not changed significantly.

Typically, teaching assistants begin their instructional duties in their first graduate year, but without much formal consideration of their teaching potential or competence. In almost half the departments, the average teaching assistant will teach for three or more years. This tends to occur more frequently in humanities departments than in the social or natural sciences, where the average is closer to one and one-half years.

Two factors were fairly often noted by respondents as acting to inhibit the development of training programs. The first was the lack of a broad-based faculty interest in the training-supervision role; the second, the shortage of available staff time for carrying out the demanding tasks of developing competent teachers from the graduate student body.

Considerable variation exists in the scope of activities associated with a given program, ranging from a brief orientation meeting and a few "brown-bag" discussions to formal course offerings, regular individual meetings between teaching assistant and

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supervisor, and several class visits by the super-
visor, while others boast a clearly defined three-
level hierarchy with a faculty member-in-charge, a
cadre of experienced teaching assistants who serve
as group leaders, and relatively large numbers of
comparatively inexperienced "apprentices." As might
be expected, the more formal features are usually
associated with the large departments.

The model pattern of training activities con-
sists of brief introductory meetings of all new
teaching assistants, followed by individual super-
vision by faculty members and weekly meetings
(largely administrative in nature) of all course
instructors. "Individual supervision" more often
takes the form of fortuitous conversations than of
regularly scheduled meetings. One or more visits
by the supervisor to the assistant's class is re-
ported in approximately 40% of the cases.

With respect to the autonomy and responsibility
of teaching assistants, it was reported that they
participate to some degree in the choice of text and
of course content in about 75% of the cases. Prac-
tically all teaching assistants in a multi-section
course, work from a common syllabus or outline and
about half of these are highly structured with regard
to sequence of topics, time allotted to each, and
mode of presentation. Under these conditions, there
is an obvious constraint in the range of decisions
open to the individual assistant. In most cases,
assistants play some part in constructing examina-
tions and in almost one-half, they assign the final
grade of the student--often subject, however, to
review by the faculty supervisor.

In nearly all programs it is reported that as
teaching assistants gain in experience, they are
granted increased freedom and autonomy, but only a
relatively few programs officially recognize this
change by such devices as systematically reducing the
prescriptive character of syllabi, or increasing the
participation of the teaching assistant in curricular
decisions. In approximately two-thirds of the depart-
ments, increased experience also brings with it
increases in stipends.

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Two procedures seem to be gaining in popularity:
pre-service training and orientation sessions (from
four hours to two weeks in length) and the use of expe-
rienced teaching assistants in guidance and supervisory
roles under the overall direction of a faculty member.
On the other hand, very few departments make use of
formal courses or seminars on college teaching.

As might be expected, the instructional skill
and knowledge given most attention in training pro-
grams are those seen as most directly relevant to
the teaching assistant's day-to-day duties. Emphasis
is given to information about specific teaching strat-
egies which appear well adapted to certain topics,
drawing up course outlines, syllabi and reading lists,
and at least an occasional brush with the problems of
evaluating student achievement. The emphasis and com-
pleteness of the fairly technical procedures of test
construction and analysis vary from asking teaching
assistants to submit occasional test items to be used
in course examinations to detailed consideration of
the characteristics of effective test items of various
kinds, and the objective analysis of test results.
In general, the former end of the continuum is asso-
ciated with individual supervision situations, while
the more formal skills are usually acquired in regular
courses or workshops.

The evaluation of training programs and teaching
assistant performance is usually based on global, impres-
sionistic, opinions of faculty members. There appear to
be few systematic attempts to develop more objective
criteria for such evaluation. When respondents were
asked to specify areas in need of improvement, the
most common response was a call for more attention to,
and interest in, teaching by both graduate students and
faculty.

It was concluded that, in most departments, teach-
ing assistantships are seen primarily as a means of pro-
viding undergraduate instruction and financial support
for graduate students, rather than the explicit train-
ing of prospective college teachers. Most departments
seem not to see the latter task as a major responsi-
bility. This condition is reflected in the tendency
for other forms of scholarly and/or research activity
to be preferred by both graduate students and faculty.

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It was often noted that the most progressive
training programs exist where the department chair-
man is centrally involved. The same relationship
probably obtains at the university level, to judge
from the fact that there are distinct institutional
differences in the amount of attention given to
teaching assistant training. It is likely that a
real strengthening of teaching assistant training
is heavily dependent on vigorous support at higher
administrative levels both within and above the
department.

With respect to the "teacher shortage", it is
suggested that the increase in the number of new
Ph.D. graduates who enter college teaching may not
be as important as the quality of the training
that is afforded teaching assistants, since their
numbers are increasing at a faster rate than any
other group of potential or actual college teachers.
The interest shown in this study at almost all
universities indicates that many departments and
institutions are giving the problem serious atten-
tion and are ready to take constructive action.

A "model" of a training program is proposed
which consists largely of an integration of the
most effective and progressive features of current
programs. The "optimal" program of training would
have three functionally defined stages. The
activities of the graduate student in the first
stage would consist of observing and assisting in
a class taught by an experienced instructor or
serving as a laboratory assistant under the super-
vision of the course instructor. In the second
stage, the assistant will conduct a section of an
introductory course, with diagnostic and advisory
help provided by a "master" teaching assistant or
a faculty member. He will also receive instruction
in the strategies and techniques of classroom
teaching. The third stage ("master") assistants
are those who seriously consider college teaching
as a career and have evidenced the requisite capac-
ities, will serve as mentors and guides for assis-
tants in the first two stages, while further devel-
oping their own teaching style and philosophy of
higher education.

51

It is further recommended that attempts be made to achieve more reliable and valid evaluations of teaching assistant performance. A plan is proposed whereby "effective" teaching may be defined and assessed. The basic scheme calls for clear statements of course objectives by the teaching assistant and of the procedures to be employed to identify or measure these goals. The supervisor would compare these statements with the class achievement toward those objectives. Judgments involving these evaluation features may be made at several points in the training program for each teaching assistant. A similar suggestion is made regarding the evaluation of the program itself--clear statement of the functional goals of each procedure followed by comparison between these statements and the perceived achievement of the goals.

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APPENDIX A

Dear Dr. _____

    Our Center has been asked by the Joint Committee on College
Teaching of the Association for Higher Education to make a study of
the methods used by major universities for selecting and training the
graduate student teaching assistants who then conduct recitation, dis-
cussion or laboratory sections of undergraduate courses. The matter
is important because these are the individuals who go on to become
our new college teachers. The real question is: What kinds of train-
ing are our future college teachers (as teachers) getting? Most of
the graduate universities are fully aware of the importance of this
problem but someone needs to take the initiative to bring together
information about the distinctive features of the training programs at
the individual institutions so that all may benefit from our pooled
knowledge.

    The focus of the study will be the approximately 50 universities
which now graduate 90 percent of the Ph.D.'s who subsequently en-
ter college teaching. Because _____ University is among
these important contributors to our nation's teaching force, we ask
your cooperation in supplying us with the information which will
enable us to focus our inquiry most efficiently.

    We would very much appreciate your giving us the name of the
Dean or other person who can provide us with the details of the steps
taken by _____ to select and train new instructors,
especially teaching assistants. If, in your judgment, our inquiry
might better be made to separate departments, would you simply indi-
cate the three or four that have been most active with respect to such
training. I am sure you will agree that our final report must contain
more than general descriptions of campus-wide programs. All informa-
tion received will be used to describe general trends; cooperating
institutions and departments will not be identified individually.

In the course of the investigation, we hope to visit the _____
campus during the coming spring in order to gain some first-hand
knowledge of your activities. In order to make that visit maximally
productive, however, we are attempting to collect as much informa-
tion as possible by mail. When our investigation is complete, hope-
fully within the next six months, we plan to make the complete
results available to each of the 40-50 graduate universities that are
being asked to participate.

Sincerely,

Frank M. Koen
Research Associate

FMK/er

A-2

APPENDIX B

THE UNIVERSITY OF MICHIGAN

The Center for Research on Learning and Teaching

1315 Hill Street

Ann Arbor, Michigan

A STUDY OF FACTORS RELATED TO THE TRAINING OF
TEACHING ASSISTANTS IN UNIVERSITY GRADUATE DEPARTMENTS

This is an inquiry concerning programs for the training of grad-
uate student Teaching Assistants — a cooperative survey between the
University of Michigan and a special Joint Committee on the Associ-
ation of Higher Education and several of the learned societies and
supported by a grant from the U. S. Office of Education. All infor-
mation will be used without identification of the specific institution
or department.

Rather than attempting a complete questionnaire survey, we
are trying to identify a representative sample of particularly success-
ful training programs. We will then try to visit as many of these
departments as possible to gain more detailed information.

Name of responding institution

Name and title of person responding

Name of responding department

The following quantitative information will help us to understand
your descriptive statements and will provide a common base for report-
ing inter-institutional data:

1. What is the number of Teaching Assistants presently employed by the
   department?

2. What is the approximate number of Ph.D.'s granted by the depart-
   ment during the past 5 years?

3. What is your estimate of the percentage of these Ph.D.'s who went directly into college teaching? _____ %

4. Has this percentage changed significantly during this 5-year period? _____ If so, in what way?

5. How long has the present training program for Teaching Assistants, or one of the same general type, been in operation?

Descriptive Information about the Program — In this section, please include those features of training which are more or less standard for all teaching assistants in the department.

1. We would like to know something of the form that the training takes. Please indicate which of the elements listed below are included in your program.

   a. Formal courses (please give the names of the courses, and the number of credit hours).

   b. Meetings of informal seminars or groups (Indicate the frequency of meetings, and the approximate total number.)

   c. Planned observation of skilled teachers, other than in regular graduate course work (Please give amount.)

   d. Serving as assistant to an experienced instructor — setting up lab equipment, reading exams, etc. (For how long?)

   e. Teaching under supervision (How is supervision and guidance provided and by whom?)

   f. Any other kind of training and supervision which is a regular part of the program.

2. Is there a regular sequence to the elements of the training program? For example, formal course followed by classroom observation followed by...etc.

B-2

3. We are interested in the content of the instruction received by the Teaching Assistant in the training (content related to training for teaching as distinct from content of a subject matter area). Please indicate whether instruction is given in any of the following topics.

   a. Planning the individual class session and/or course — choice and sequence of topics to be presented, etc. (Please indicate the form of instruction: Formal course, informal meetings, seminar, etc.)

   b. Teaching procedures, classroom testing, etc. (In what form is instruction given?)

   c. Psychology of learning and motivation (form of instruction?)

   d. Other topics on which instruction is provided

4. What form(s) does the evaluation of teaching assistants' performance take?

5. By what means do you try to evaluate the effectiveness of the training program itself?

6. Do others (than Ph.D. candidates) receive training for college teaching via all or part of the program? For example, M.A. candidates, part-time instructors, etc. If so, what is the extent of their participation?

7. What do you consider the most successful aspects of the training program as it is presently conducted?

8. Where would you like to see improvements made?

B-3

NOTE: If the above questions miss significant aspects of your training program — form, content, objectives, innovations — please use the space below and/or on the back for whatever additional comments you consider desirable.

Please return one copy of this form to: Dr. Frank M. Koen, Research Associate (at the above address) and retain the other for your files.

APPENDIX C

A Total List of University Units Contacted

Boston University
     Departments
         Biology
         Chemistry
         English
         Philosophy

Brown University
     Departments
         English
         Geological Sciences
         Physics
         Political Science

Catholic University of America
     Departments
         Chemistry
         Physics

Clark University
     Departments
         History, Government, International Relations
         Mathematics
         Psychology

Columbia University
     Departments
         Chemistry
         English and Comparative Literature
         History

Cornell University
     Departments
         Chemistry
         English

         Section of Genetics, Development and Physiology

Duke Univeristy
     Department
         English

Emory University
     Department
         English

Florida State University
    Departments
        Chemistry
        English
        Modern Languages

Fordham University
    Departments
        Chemistry
        History
        Sociology and Anthropology

Harvard University
    History Department

Indiana University
    Departments
        English
        French and Italian
        German
        Spanish and Portuguese

Iowa State University
    Departments
        Chemistry
        Zoology
    College of Home Economics

New York University
    Departments
        Chemistry
        English

Northwestern University
    Biological Sciences Department

Ohio State University
    Departments
        English
        Chemistry
        Mathematics

Oregon State University
    Departments
        Chemistry
        Physics
        Zoology

Pennsylvania State University
    Departments
        Chemistry
        English
        History
        Psychology
        Speech

Princeton University
    Departments
        English
        Chemistry
        History
        Romance Languages

Saint Louis University
    Mathematics Department

Stanford University
    Departments
        Electrical Engineering
        English
        French and Italian
        Mathematical
        Modern European Languages (data from German only)

Tulane University
    Departments
        Chemistry
        English
        History
        Mathematics
        Spanish

University of California
    Departments
        Chemistry
        Comparative Literature
        English
        French
        German
        Physics
        Zoology

University of Chicago
    Departments
        Education
        History

University of Cincinnati
 Departments
  Chemistry
  German
 School of Design, Architecture and Art
 School of Music

University of Florida
 Departments
  Accounting
  Engineering
  Economics, School of Business Administration
 College of Education

University of Illinois
 Departments
  Engineering
  English
  French
  History
  Physics
  Psychology
  Rhetoric

University of Iowa
 Departments
  English
  Geology
  German
 School of Music

University of Kentucky
 Departments
  History
  Mathematics

University of Maryland
 Departments
  Chemistry
  English
  History
  Mathematics
  Psychology
  Zoology

University of Michigan
    Departments
        Astronomy
        Botany
        Chemistry
        English
        German
        History
        History of Art
        Mathematics
        Philosophy
        Physics
        Political Science
        Psychology
        Romance Languages

University of Minnesota
    Departments
        Chemistry
        English
        Mathematics
        Psychology

University of Missouri
    Departments
        English
        Geology
        History
        Romance Languages
        Zoology
    College of Arts and Sciences

University of Oregon
    Departments
        English
        Journalism
        Psychology
        Sociology
    School of Health, Physical Education and Recreation

University of Pennsylvania
    Departments
        Biology
        English
    College of Germanics

University of Texas
    Departments
        English
        Government
        History
        Romance Languages

University of Virginia

University of Washington
    Departments
        English
        Germanic Languages and Literature
        Mathematics
        Romance Languages

University of Wisconsin
    Departments
        Chemistry
        English
        German
        Spanish

Vanderbilt University
    Departments
        Chemistry
        English

Washington University
    History Department

Yale University

APPENDIX D

Characteristics of Training Programs and Number of
Departments or Schools Reporting Each Characteristic

I. Administrative Characteristics of the Program

A. Quantitative Aspects

1. Number of graduate students
   a. less than 25   1
   b. 25 - 74   7
   c. 75 - 124   7
   d. 125 or more   13
                          ─────
                           28

2. Number of teaching assistants
   a. less than 25   44
   b. 25 - 74   61
   c. 75 - 124   23
   d. 125 or more   4
                          ─────
                          132

3. Estimate of number of Ph.D.'s granted 1960 - 1965
   a. less than 25   61
   b. 25 - 49   25
   c. 50 - 74   8
   d. 75 - 100   3
   e. 100 or more   14
                          ─────
                          111

4. Estimated proportion of Ph.D.'s entering college
      teaching
   a. less than 20%   7
   b. 20 - 39%   12
   c. 40 - 59%   6
   d. 60 - 79%   20
   e. 80 - 100%   79
                          ─────
                          124

5. Direction of change (if any) in proportion of Ph.D.'s
      entering college teaching: 1960 - 1965
   a. same   97
   b. up   10
   c. down   2
                          ─────
                          109

6. Number of years present program has been in operation
   a. less than 2 years 3
   b. 2 - 4 years 25
   c. 5 - 9 years 31
   d. 10 years or more 51
                                               ‾‾‾
                                               110

7. Number of levels of teaching assistant stipends
   a. one 14
   b. 2 level 8
   c. 3 or more 4
   d. varies on individual basis 11
                                               ‾‾‾
                                               37

B. Locus of Control of Training Activities

   1. Department 125
   2. University committee 6
   3. Graduate dean's office 2
                                               ‾‾‾
                                               133

C. Supervision of Program

   1. Department chairman 21
   2. Supervisor of teaching assistants 22
   3. Course instructor 12
   4. Experienced teaching assistant 9
   5. Extra-departmental supervision 1
                                               ‾‾‾
                                               65

D. Released Time for Faculty Member for Supervisory Activities

   yes 28
   no 118
                                               ‾‾‾
                                               146

E. Significant Factors in Establishing Program

   1. Historical development 14
   2. Chairman 5
   3. Teaching assistant supervisor 6
   4. Need for additional teachers 11
                                               ‾‾‾
                                               36

D-2

F. Factors Which Facilitate Program Growth and Development

1. Dedication of some individuals   14
2. General faculty interest   6
3. Results   1
4. Economical benefit   3
5. Reduced teacher load   4
6. Administrative interest   7
           35

G. Factors Which Inhibit Program Growth and Development

1. Administrative resistance   1
2. Research assistantships, other fellowships   5
3. Lack of faculty interest   21
4. Lack of released time   7
5. Lack of student time   3
6. Staff shortage   10
7. Teaching assistant shortage   2
           49

II. Population Receiving Training

A. Individuals Other Than Ph.D. Candidates for Whom
Training is Available and/or Required

1. M.A. candidates   60
2. All graduate students   32
           92

3. New faculty if teaching beginning courses   16

B. Criteria for Selection of Teaching Assistants

1. Academic record   25
2. Personal character   7
3. Previous teaching experience   12
4. No selection   6
5. Maturity   2
6. Recommendations   20
7. Review of application   5
           77

III. Formal Characteristics of Program

A. Characteristics of Classroom Teaching

1. Teaching required as part of graduate training
   yes   31
   no   115
                                                       ———
                                                        146

2. Average duration of teaching experience
   a. 1 year   9
   b. 2 years   22
   c. 3 years or more   25
                                                       ———
                                                        56

3. Average number of student contact hours per week
   a. 3 or less   7
   b. 4 - 6 hours   21
   c. 7 - 9 hours   10
   d. 10 hours or more   9
                                                       ———
                                                        47

4. Form of faculty supervision of teaching
   a. 1 or more class visits   43
   b. informal talks   9
   c. regular meetings   31
   d. unstructured   40
                                                       ———
                                                        123

5. Academic credit given for teaching   9

B. Teaching Assistant Autonomy and Responsibility

1. Individual who constructs tests in course
   a. supervisor   12
   b. teaching assistant   16
   c. joint effort   28
                                                       ———
                                                        56

2. Individual who chooses course content
   a. supervisor   30
   b. teaching assistant   19
   c. joint effort   15
                                                       ———
                                                        64

3. Individual who assigns final grade
   a. supervisor   11
   b. teaching assistant   26
   c. joint decision   21
                                                       ———
                                                        58

4. Characteristics of syllabus or outline
   a. detailed   27
   b. general   29
   c. week by week   4
                                                        ─────
                                                         60

C. Amount of Pre-service Training for Teaching Assistant

   1. Brief administrative session only   88
   2. 1 - 3 hours   27
   3. 1 - 5 days   12
   4. 1 - 2 weeks   15
   5. entire summer preparation   4
                                                        ─────
                                                        146

D. Formal Seminar or Course

   1. Number of meetings per semester
      a. 10 or less   4
      b. 11 - 20   6
      c. 21 - 30   8
      d. more than 30   17
                                                        ─────
                                                         35

   2. Academic credit given
      a. amount unspecified   4
      b. 1 hour   6
      c. 2 hours   8
      d. 3 hours or more   17
                                                        ─────
                                                         35

   3. Temporal relation to teaching activities
      a. concurrent   10
      b. preceding   3
      c. either concurrent or preceding   22
                                                        ─────
                                                         35

E. Informal Group Meetings

   1. Number of meetings per semester
      a. 5 or less   17
      b. 6 - 10   15
      c. 11 - 15   5
      d. more than 15   52
                                                        ─────
                                                         89

2. Number of semesters during which group meetings are held
   a. 1 semester or less 81
   b. 2 semesters 8
   c. more than two semesters 6
                                                  ――
                                                  95

F. Planned Observation by Teaching Assistant of Skilled Teacher

   1. Before teaching 5
   2. Concurrent with teaching 44
   3. Occasional 11
                                                  ――
                                                  60

G. Service as Assistant to Regular Faculty Instructor

   1. Less than 1 semester 56
   2. 1 semester 12
   3. 1 academic year 7
   4. More than 1 year 6
                                                  ――
                                                  81

H. Sequence of Elements of Training Program

   1. Sequence reported but unspecified 7
   2. Observation, assisting in course before
      teaching 24
   3. Observation, assisting concurrent with
      teaching 15
   4. Teaching basic, then intermediate course .. 7
   5. Given detailed then general outline 1
   6. Depends on individual teaching assistant's
      progress 9
                                                  ――
                                                  63

IV. Substantive Features of Training Program

   A. Organized Presentation of Philosophy, History,
      and Problems of Higher Learning 13

   B. Presentation of Objectives and Philosophy of
      Course 29

B. Mechanisms and Procedures for Evaluating Teaching Assistant Performance

    1. Opinion of superior   87
    2. Student evaluation   31
    3. Graduate course work and/or research   14
    4. Personality of teaching assistant   1
    5. Class visits   51
    6. Assignments   6
    7. Student performance   11
    8. No systematic evaluation   9

                                                         210

VI. Opinions Regarding Strong and Weak Points of Current Programs

    A. Strong Points

    1. Meets instructional needs   10
    2. Contribution to teaching assistant's
           effectiveness   27
    3. High quality of teaching assignments   7
    4. Coordination of course   25
    5. Master teaching assistants   4
    6. Skill of supervision   15
    7. Personal contacts between teaching
           assistants and supervisor   25
    8. Teaching assistant - student relationship   2
    9. Good syllabi   3
   10. Teaching assistant freedom and autonomy   7
   11. Contribution to students learning   9
   12. Regular graduate meeting and/or discussion
           session   18

                                                         152

    B. Areas in Need of Improvement

    1. More supervision or more supervisors   14
    2. More teaching assistant interest in
           teaching   19
    3. Higher stipends for teaching assistants   12
    4. Reduced teaching assistant loads   9
    5. Released time for supervision   13
    6. Pre-service training   10
    7. General upgrading   4

8.	Higher quality and/or more teaching assistants	14
9.	Increased status of teaching assistant	11
10.	Better course outlines, syllabi	4
11.	More faculty interest	11
12.	Increased attraction relative to Research Assistantships and fellowships	9
13.	Perfecting details of present programs	6
14.	More personal contacts between staff and teaching assistant	1
15.	More formal instruction	35
16.	Teaching assistant and program evaluation	1
		173