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ABSTRACT

A study investigated the differences in the teaching of methods courses in Research and Development (R & D) institutions and in other teacher education programs. The study's major interest was in discerning the emphasis given to "research" in methods courses offered in institutions having an R & D emphasis and comparing it with the emphasis found in non-R & D teacher education institutions. Deans of schools of education were mailed a letter describing the study. The deans in turn were asked to pass the study questionnaire to a faculty member who "regularly teaches methods courses." The faculty member chosen was directed to fill out the questionnaire and to pass on questionnaires to three students. The professor and three students were asked to mail their completed questionnaires separately. This report contains six sections. Section 1 introduces the study, and section 2 describes the sample selection. Section 3 outlines data collection procedures, and section 4 discusses implementation of the study. In section 5, principal results and findings are detailed, and section 6 includes a summary of findings, discussion, and implications. Letters and instruments as well as additional data are appended. Study limitations and methodology are discussed in great detail. (JMK)

CONTEXTS AFFECTING METHODS INSTRUCTION IN SELECTED TEACHER EDUCATION INSTITUTIONS

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TO JUDY, WHO CARED.

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CONTEXTS AFFECTING METHODS INSTRUCTION IN SELECTED TEACHER EDUCATION INSTITUTIONS

James Raths and Judith Ruchkin

INTRODUCTION

Many observers of the educational scene acknowledge that there is a decided over-supply of teachers. While some may disagree about the quality of those persons who have been prepared to teach, it is clear too few of the recent teacher graduates are able to find employment as full time school teachers regardless of their teaching competence. Can our society continue to underwrite the funding of nearly 1400 schools, departments and colleges of education in the face of this fact? The answer seems clear, but how will we decide which institutions give up the teacher education function?

In search of quick solutions to this problem, policy makers seem eager to listen to formula-like suggestions. The Clark and Guba studies [1] were cited not so many years ago as providing evidence that the masters level

institutions were the ones which should remain in teacher education. This argument was based in part on the observation that the commitments of faculty to teacher education was perhaps more focussed at masters level institutions than at any other, and the reward systems in those institutions were more congruent with a teacher education mission than those is found in institutions aspiring to be "research universities."

Another solution was proposed by a group of deans whose policy inquiry was sponsored by NIE. Their ideas [2] included the recommendation that R&D institutions take over the teacher education function. The basis of this group's argument was that when inquiry and scholarship are the central focus of schools of education, then the quality of teacher education programs will greatly improve. The deans claimed that "the very character of schools of education will be altered if they were to become enaged in inquiry."(p.24). The group acknowledged that achieving such a goal would mean a dramatic decrease in the number of schools of education. This line of thinking has been elaborated quite recently by Dean Hendrik Gideonse [3], who incidently was a member of the Tucker group. He asserted that lack of activity in the R&D realm on the part of a

teacher education program should become a reason for "denial of its further participation in the privilege of preparing teachers."(p.78). Another member of the Tucker group, Dean Richard Wisniewski of the University of Tennessee elaborated upon this view. He contended that the colleges of education that value scholarship not only will have a record of productivity, but will equally important, offer programs predicated on state-of-the-art inquiry and scholarship.[4]

However, most observers are wary of the notion that a formula will ever be found that will reduce the number of teacher education institutions in this country, and they are especially concerned about the one proposed by the Tucker group and others. As Fox [5] observed, "a division of labor has occurred in education in the second half of this century. Not only do teachers teach and school of education faculty members teach teachers, but within schools of education, certain faculty members 'do research while others teach teachers." If Fox were correct, then perhaps teacher education specialists are employed as "specialists" at R&D institutions to carry out the teacher preparation mission and these persons are not much different from their counterparts at institutions with other sorts of orientations. And thus, the kinds of experiences teacher

candidates undergo in R&D institutions in their professional training might be quite similar to those assigned to candidates in other institutions. Tucker and the others might be focussed on the wrong element; after all, institutions do not teach candidates, but professors do. Do professors in teacher education at a major R&D university, relegated to a role as a teacher educator, perform any differently than a colleague with similar research dispositions at a four year college or at a masters level institution? [6]

There are those who would answer this question in the affirmative. The work of Astin(1977) [7] and others, eg. Feldman and Newcomb(1969)[8] lends support to the claim that an "institutional press" operates at places such as Stanford, University of Chicago, and Harvard which might transform teacher educators into research oriented professionals.

We were interested in finding out if there were differences in the teaching of methods courses in R&D institutions and in other teacher education programs. Of course, there may be many differences between programs and institutions, but we were interested essentially in

discerning what sort of emphasis is given to "research" in the methods courses offered in institutions having an R&D emphasis and and comparing it with the emphasis found in non-R&D teacher education institutions.

Variable of Interest. What differences would we expect to see in the approaches taken in methods courses by persons imbued with an R&D spirit of inquiry as opposed to instructors with other wonts and dispositions? We took a clue from the work of Freidson. [9] In his study of physicians, Freidson differentiated between clinical and scientific perspectives or mentalities. The clinician focuses on the present and the problem under study; the scientist seeks generalizations and principles; the clinician is confident in his interventions while the scientist prizes the doubt; the clinical person is wont to action while the scientist tends to delay action until additional data are available. Of course, in all action arenas,even in medicine there is an optimum amount of either approach. It is possible for a practitioner to be too analytic as well as too confident. The point is a matter of emphasis. We were convinced that if we could capture the extent to which methods courses in teacher education programs were clinical as opposed to scientific, we might be

able to differentiate between approaches found on campuses having an R&D emphasis and those having other priorities.

While our inquiry would not decide the correctness of the Tucker group's assertion concerning which sort of institutions should be in teacher education, it might serve as an heuristic, and raise questions about this issue which might help guard against taking wrong directions.

SAMPLE SELECTION

Design. A purposive sampling design was utilized in this study. The principal goal of our research effort was to compare elements of the methods courses offered in teacher education institutions having an R&D orientation with those found in institutions of similar size which do not have an R&D orientation. Taking a probability sample of all teacher education institutions was not contemplated since there was a need to over-sample, from a proportional point of view, those institutions that were seen as having an R&D orientation. The situation was somewhat analogous to a community study comparing library users with non-users. Since the former group is so small in contrast to the

latter, a strict probability sample would be inefficient. Also, there was no attempt here to estimate parameters of all teacher education institutions in the United States but to compare, in very limited ways, institutions that were oriented toward R&D and those that were not. Two samples were drawn to make this comparison.

1. Those institutions which were a part of the Dean's Network, a group of colleges of education which characterized themselves as having an R&D orientation, made up the first sample. The purposes of the Dean's Network organization were never quite clear but almost implicitly the group was organized to advance the goals of R&D institutions in education. Some members saw the aim of the group to be one of lobbying Congress, giving emphasis to the unique orientation of its members. Indeed a number of Network activities were held in Washington with breakfasts given for members of Congress in the Rayburn Building. Others envisioned a different role for the Dean's Network; some thought it might become a replacement for NCATE; others as a source of collegial consulting over mutual problems, e.g., How can we handle the special education mandates in teacher education? What resources can we share dealing with multicultural education? The group originally included the

colleges of education of the two football conferences, the Big 10 and the Big 8, with the Univeraity of Chicago and the University of Wisconsin-Milwaukee also serving as regular members. In 1980, the Network increased to thirty-eight members. The expansion led to extending invitations to approximately twenty other institutions which were seen as having R&D orientations. The thirty-eight members of the expanded Dean's Network made up the sample; however four did not have undergraduate teacher education programs and two which did were not members of AACTE. Since we planned to use AACTE rosters to secure "matches" from non-R&D institutions to carry out the compare-and-contrast design, we eliminated six institutions from the list of thirty-eight members in the Dean's Network, and sent questionnaires to only thirty two.

2. The second sample was linked to the first. We wanted to compare institutions with an R&D orientation with those that had different orientations. We thought that "size of institution" would have some impact on our research. (As it turned out later, size was an irrelevant variable.) Given our premise, we "matched" an institution on the AACTE membership list which was not a member of the Dean's Network with an institution that was part of the

Network. We selected as a match, in each case, the institution on the AACTE roster with an UG teacher education student body size,(estimated by the number of teacher education graduates in 1980), closest in number to that of the Network institution. We also paired institutions on the basis of whether they were private or public. For instance, a private university in the Dean's Network was matched with a private institution on the AACTE roster with a similar sized teacher education student body. We mailed questionnaires to thirty two institutions identified in this manner.

3. We felt that size of institution might be a very significant factor, so we sampled institutions with very few graduates in teacher education curricula. We took as a cutoff the smallest institution on the Dean's Network list, and argued that any size less than that was "small." The cutoff was 57 graduates. This operational definition applied to the membership list of AACTE gave us the names of 254 institutions which graduated less than 57 teacher education students in 1980. We constructed a frequency distribution of these 254 institutions and sampled proportionately from the various strata of the distribution. The frequency distribution ranged in values

from a low of 4 graduates to a high of 57. We decided to send questionnaires to 32 of these institutions so that our sampling design would specify equal sample sizes across the three categories of institutions.

4. Two other purposive samples were selected for diverse reasons, mostly unrelated to the research question addressed in this paper. All colleges and universities which participated in the longitudinal study of higher education, sponsored for a time by the American Council on Education, and carried out by Astin and others, were sampled.[10] In the random selection process, thirty-two institutions were selected and if an institution were drawn which was already included in the three previously defined groups, the selection was ignored and a substitute institution was identified.

5. The final group was selected in a way similar to that of the fourth group. A roster of institutions visited by Professor James Conant in 1963 during his Carnegie Foundation study of teacher education was sampled.[11] Thirty-two institutions selected at random from the Conant roster were sent questionnaires. As before, if an institution were selected that had also been named in

previous samples, it was replaced in the process.

As result of these decisions, we mailed questionnaires to five groups, each with thirty-two institutions. As in any survey, there are persons in a sample who elect not to participate, or even with the best of intentions, fail to return questionnaires. Table I describes the results associated with implementing our sampling design.

Table I
RETURN RATES FOR EACH SUB-GROUP SAMPLED

	Dean's Network Institutions	Matching Inst'ns	Small Inst'ns	Astin Inst'ns	Conant Inst'ns
Number of Institutions	38		254	435	77
Number of Institutions in Population Belonging to AACTE	36		254	181	61
Number of Questionnaires Mailed	32	32	32	32	32
Number of original sample who declined to participate or who did not return questionnaires.	6	13	21	16	20
Number nominated as replacements and mailed questionnaires	0	1	2	2	2
Total number of questionnaires mailed	32	33	34	34	34
Professor Returns	26	18	14	17	13
Student Returns	60	43	29	35	20
Return Rate of Professors	81%	66%	41%	56%	41%

Discussion of Final Sample. The relatively poor return rate of the institutions with other than R&D orientations reduced our confidence in the extent to which our samples represented their respective groups. We were encouraged, however, by the relatively large return rate from the R&D population, and the "matching" nature of our design. For example, in a survey of research productivity in American institutions of higher education, (defined in terms of contributions to AERA meetings and 14 leading educational research journals), Eash [12] identified 25 institutions that represented the major research producers in education. Twelve of those institutions were represented in this study.[13] We were able to compare eighteen matched pairs in addressing our principal research question. The return rates of our other three purposive samples were unacceptable, and even after repeated efforts to bolster the number of returns, we had to abandon our plans to carry out further analyses with these groups.

We have tried to convey here the narrow nature of the research question we were addressing. We were making no effort to make a statement about the collection of teacher education institutions in the United States. Indeed, we over-sampled elements of the teacher education community to

carry out our study as efficiently as possible. To forestall any attempt to generalize our results to the entire teacher education community, we felt it important to depict the extent to which our sample misses the mark in representing all teacher education institutions in the United States. The need for sharing this information became all the more apparent when we found that our original hypotheses were not supported by the data, and when we subsequently discovered other unanticipated relationships of interest.

Three comparisons of our sample with other populations are offered here. First, Clark and Guba(1977) [14] reported an extensive survey of teacher education programs in the United States. In the process of carrying out their study, they developed a classification scheme for portraying some of the basic characteristics of teacher education institutions. How well does the sample utilized in this study fit the Guba and Clark description of the population of teacher education institutions in the United States in 1977? Table II portrays the extent to which the picture offered by Clark and Guba matches the profile of institutions sampled in this study.

Table II
MATCH BETWEEN POPULATION DEFINED BY CLARK AND GUBA(1977) AND THE SAMPLE OF THIS STUDY

Classification	Number(%) in Clark and Guba	Number(%) in Current Study
Public/Doctoral	112(8%)	35(37%)
Private/Doctoral	51(4%)	15(16%)
Public/Masters	284(21%)	16(17%)
Private/Masters	278(20%)	10(11%)
Public/Bachelors	94(7%)	2(2%)
Private/Bachelors	550(41%)	17(18%)
Totals	1357	95

A second comparison is in order. The Clark and Guba survey broke out their gross classifications to identify the distribution of institutions which were in the various public vs private and "highest degree level" categories which were also in AACTE.[15] Since the AACTE membership rosters were used to identify institutions in the "matching group" and in the "small group," it made sense to inspect the extent to which the sample utilized in this study fit the profile of AACTE. The data are reported in Table III.

Table III
MATCH BETWEEN SUB-POPULATION (AACTE MEMBERS) DEFINED BY CLARK AND GUBA(1977) AND THE SAMPLE OF THIS STUDY

Classification	Number(%) in Clark and Guba	Number(%) in Current Study
Public/Doctoral	99(15%)	35(37%)
Private/Doctoral	32(5%)	15(16%)
Public/Masters	32(5%)	16(17%)
Private/Masters	155(24%)	10(11%)
Public/Bachelors	50(8%)	2(2%)
Private/Bachelors	550(41%)	17(18%)
TOTALS	639	95

As can be seen, our sample did not match very well the profiles offered by Clark and Guba. We were over-represented at the doctoral level area and seriously under-represented in the private/bachelors arena. While this mismatch was a natural consequence of our sampling decisions, it represents a serious obstacle to making generalizations without profound qualification.

A third assessment of the goodness of fit of the sample of this study to a larger population of institutions in the

United States is afforded by comparing the distribution of institutions here with one reported in Barron's reference.[16] In this source, institutions are classified into categories depending upon the degree of admissions competition. Six classifications are of interest to us. The first is labeled "most competitive" and includes institutions such as Dartmouth, Amherst, Williams and Stanford. The next is termed "highly competitive" and institutions such as University of Virginia, Tufts, Duke and Middlebury College are assigned to this classification. The next, "very competitive" accounts for most of the SUNY institutions, the California State Universities and those of the Big 10. The fourth classification, and the modal class, labeled "competitive", ranges from Abilene Christian University through Youngstown State University. The "less competitive" category is comprised of principally private, church related institutions. The last category, called "non-competitive" includes most of the institutions in the United States with open admission policies. How well does the sample studied in this research match up with Barron's description of educational institutions in the United States? Table IV depicts the match.

Table IV
MATCH BETWEEN POPULATION DEFINED BY BARRON'S(1981)
AND THE SAMPLE OF THIS STUDY

Classification[1]	Number (%) in Barron's(1981)	Number (%)in this study
Most Competitive, Highly, and Very Competitive	157(12%)	10(11%)
Competitive	578(46%)	57(60%)
Less and Non-Competitive	502(40%)	28(29%)
Totals	1269	95

[1] Categories are collapsed here for convenience.

It is difficult to estimate how well our sample represents the institutions cited in Barron's. It must be understood that not all the institutions in Barron's offer teacher education programs. We have approximately a 1/15th sample at each competitive level. However, the sample was not selected using textbook techniques representing the state-of-the-art in survey research. In reporting our findings, we have assumed cautiously that the various levels of "competitiveness" were adequately represented in our sample. We also intend to qualify seriously the "serendipital" results reported in this research because of the chance that our samples are biased in some systemic

manner. Suffice it to say, we are dealing with the responses that represent on the whole a return rate of 59% of institutions that were sampled for several different purposes, none of which was to represent all of the teacher education institutions in the United States.

DATA COLLECTION PROCEDURES

Once the sample was identified, each dean [17] of the respective school, college or department of education was mailed a letter telling of our interest in describing instructional intent in methods courses. The deans were invited to pass on our questionnaires to a faculty member who "regularly teaches methods courses." The choice of the faculty member was left to the dean. The materials the dean was to pass on to the faculty member included three student questionnaires. The faculty member was directed in the materials received from the dean to distribute the questionnaires to "any three students enrolled in your methods course." The students were to complete the questionnaire in private. The professor and the students

were each given a pre-stamped envelope in which to return the questionnaire to us at the University of Illinois. We assured the professor and asked, in turn, that students be assured, that no individual, no institution, and no program would be identified with specific responses in our report of this research.

Deans returned post-cards telling us either that they did not choose to participate in the study, or informing us of the name of the faculty member to whom the questionnaires had been directed. When an institution declined to participate, we selected an alternate, if one were available. After a period of time, if a professor who had been designated by the dean as the person who would respond for the institution had not sent in a questionnaire, we called or wrote to urge compliance with our request. Only one such follow up was carried out for any one faculty member; it was assumed that if a response was not forthcoming after our prompt, the instructor was not interested in cooperating with the study, as was his or her right.

Table V depicts the pattern of responses of the various professors and students who were invited indirectly to

participate in the study. Of course, we have no idea if deans actually asked professors to complete the questionnaire or whether instructors invited students to send the instruments to us.

Table V
PATTERNS OF RESPONSES TO THE DATA COLLECTION PROCEDURES

Sub-Group		Number of Students Per Institution 0	1	2	3
Dean's Network Institutions	Profs. Responded	0	3	12	11
	No Prof Response	0	0	0	0
Matching Institutions	Profs. Responded	2	1	10	5
	No Prof. Response	2	0	2	1
Small Institutions	Profs. Responded	2	1	5	6
	No Prof. Response	0	0	0	0
Astin Institutions	Profs. Responded	3	3	5	6
	No Prof. Responded	0	1	0	1
Conant Institutions	Profs. Responded	5	2	2	4
	No Prof. Responded	0	0	1	0

The array in Table V is included here to help the

reader anticipate the various N's reported in the findings section of this report. When we are describing the professors, we made use of the eighty-eight completed questionnaires we received from faculty. In describing student accounts, we counted the one hundred and eighty seven responses we received from candidates. When we describe the relationship between the reports of professors and those of their students, we included in the analyses only professors for whom we had at least two student questionnaires. Further, we dropped five other cases in which the students described one methods course while the faculty member described another. The final effective N for the description of the relationships between the professors' scores and those of their students was sixty-one. In these analyses, we averaged the various student assessments to arrive at a single student score for a given professor's course. We had hoped to have one-hundred and sixty professors in our sample, thirty-two coming from each of the five groups listed in Table V. As can be seen, the response rate severely reduced our sample size. More will be said of this later.

INSTRUMENTATION

Focus. Our inquiry began by wondering how professors in pre-service teacher education give emphasis to research. While each of us probably uses research and the results of research in several different ways in our teaching, we wondered if the emphasis of some instructors was more clinical in the Friedson(1975) sense while others were more scientific. We assumed that those with a clinical mentality would aim more at using the findings of research while those with scientific dispositions would give more attention to the process of research. We thought that professors committed to the prizing of the process approach would likely use research findings with caution, seek to identify flaws in major studies, and attempt to re-cast the results of research into new and challenging hypotheses.

On the other hand, instructors committed to the application of research findings would tend to present results as fairly matter-of-fact. Instructors with this mode of thought would deliver instruction with some confidence, instilling in their students the "rightness" of what was being taught.

We anticipated, too, that some methods instructors

would find research on teaching less than compelling. These instructors would prize their personal experiences as a source of truth about teaching, and in turn, they would encourage students to value their own personal experiences in the classroom as a principal source of knowledge about teaching.

We developed a six item scale that was designed to differentiate between instructors whose dispositions in teaching were most like the ones described first, above, from those described second and third. That is, we were interested in discriminating between instructors who taught methods courses from a "scientific mentality" from those with a "clinical mentality" or from those who found research irrelevant to the teaching of methods. The six items are rationalized in the paragraphs that follow:

EVIDENCE — This item contrasted an approach in which the instructor emphasized sharing evidence from research articles as contrast to an approach which relied heavily on anecdotes from the instructors' personal experiences with teaching.

SCHOLARSHIP — In this item, we asked for differentiations between methods instruction which focused on lists of steps to follow in teaching as opposed to avoiding "how to" topics in favor of examining issues found in the field of pedagogy.

LIMITATIONS — This item was designed to differentiate between instructors who worked to give candidates confidence in the "rightness" of the methods that were being taught in the course and those instructors who continually drew attention to the limitations of "pat" methods by stressing situations in which a given practice might not work or in which a suggested approach might yield serious side effects.

DOUBT — Item 4 was written to distinguish between the methods instructor who stressed the power of our current knowledge base in teaching, in contrast to the instructor who encourages candidates to doubt the efficacy of any and all prescriptions for teaching.

PRIMARY — The fifth item asked for estimates of the extent to which candidates were given the opportunity to read primary sources in their methods courses, rather than secondary sources. It was felt important to know, for instance, how much stress was given to reading Bruner, for instance, instead of reading what an author like Bruce Joyce said about Bruner's views.

HYPOTHESIZING — The last item worked to differentiate instructors who gave emphasis in class to the sharing of personal experiences as opposed to encouraging candidates to formulate hypotheses about teaching that might be subject to further testing.

The scales were initially administered in "interview style" with methods instructors at the University of Maryland and at Western Maryland University. Feedback received from these sessions was used to refine and re-draft the items. Next, several colleagues at the University of

Illinois and the University of Maryland were asked to fill out a revision of the instrument as though it were a questionnaire, and these colleagues were interviewed after they had completed it to learn of ambiguities and problems with the language.

After several iterations of re-drafting, re-testing with colleagues, and re-drafting again, we were confident that the scale was assessing what we felt was an important variable associated with methods teaching. The test was then administered to a group of undergraduates at the University of Maryland. These pilots provided us with information that increased our confidence in the instrument. We intended to sum the results of the six scales and label the total score, Science. We planned to weight each of the scales as the inverse of its standard deviation in the summing process, but since each scale had almost the same standard deviation, we used the unweighted sum of the items to find the Science score.

Psychometric Properties of the Scale. After all the questionnaires were in, we found that we had 88 faculty responses that were amenable to analysis. The scales were rated on a five-point range, with a 5 assigned to the end of

the scale that represented "the process" approach. The table of intercorrelations among the items follows:

Table VI

INTERCORRELATIONS AMONG THE SIX ITEMS ASSESSING EMPHASIS GIVEN TO SCIENCE IN METHODS COURSES, N=88

	EVID	SCHLRY	LMTNS	DOUBT	PRMY	HYPTH
EVID	1.00					
SCHLRY	.031	1.00				
LMTNS	.087	.455	1.00			
DOUBT	-.031	.117	.420	1.00		
PRMY	-.111	.118	.069	.008	1.00	
HYPTH	.400	.170	.114	.047	.063	1.00

The means and standard deviations of each scale and the total score are reported in Table VII. Also included in this table are the correlations of each of the scales with the total score.

Table VII
MEANS, STANDARD DEVIATIONS, AND CORRELATIONS WITH SCIENCE SCORES OF EACH OF THE SIX ITEMS INCLUDED IN THE FACULTY QUESTIONNAIRE,(N=88)

ITEM	MEAN	S.D.	CORRELATION WITH SCIENCE SCORE
EVID	2.96	1.35	.065
SCHLRY	2.36	1.34	.343
LMTNS	2.43	1.38	.460
DOUBT	3.25	1.44	.207
PRMY	2.93	1.37	.051
HYPTH	2.94	1.39	.221
TOTAL	16.88	4.28	

A coefficient alpha was computed for the scale, and the procedure yielded an estimate of .45. Given the small number of items involved in this scale, the value is almost respectable. On the other hand, the estimat suggests that there is a great deal of error variance in the data we have gathered, due perhaps to the lack of clarity in the concept we are measuring, the vagaries of self-report instruments, and imperfect communication between the researchers and the professors who elected to respond to our questionnaire.

The analysis of the student results is not given much attention here, since the reliability estimate of the student Science scores is a scant .32.

Hook and Rosenshine [18] warn researchers about the lack of accuracy of teachers' self-reports of their teaching practices. There were 61 professors in our sample who had at least two students complete a questionnaire. When we averaged the students' assessments and correlated them with the professor's self-report, we found a correlation of .28. While this value is a bit disquieting, it is not as low as some of the teacher-student ratings reported by Ehman, who inquired into the problem of teacher self-report more generically. [19]. He reported correlations as low as -.38 between the judgments of students and teachers of the teacher's performance. Both the Hook and Rosenshine analysis and the work of Ehman suggest that the accuracy of teacher self-report varies dramatically depending upon the "issue" being depicted. Variables of "social value" presumably are more likely to be distorted than are variables of a more neutral sort. While we would have preferred a higher correlation, the fact that the reliability of the student scales was so low perhaps precluded our finding a more substantial relationship

between professor and student scores.

PRINCIPAL RESULTS AND SERENDIPITAL FINDINGS

Comparison of R&D and non-R&D Institutions. Given the problems of low rate of return, only 18 pairs survived from the original 32 sets of matches. An analysis of the Science scores for the two groups yielded a t-statistic of .3947, a value that was deemed not significant. Means and standard deviations are reported in Table VIII.

Table VIII
MEANS AND STANDARD DEVIATIONS ON THE SCIENCE SCALE FOR INSTITUTIONS WITH AN R&D ORIENTATION CONTRASTED WITH THOSE WITH A NON-R&D ORIENTATION.

Comparison Groups	N	MEAN	SD	t-value
Institutions with an R&D Orientation	18	17.72	4.05	.3947
Institutions without an R&D Orientation	18	17.11	5.16	

The mean of all 88 professors who completed the scale was 16.88 with a standard deviation of 4.28. While the means of the R&D-oriented institutions and their "matches" were higher than the grand mean, the two means were not

significantly different from each other. Our initial hypothesis was not supported by the data. (We had student scores for only 16 matched pairs. The mean of the student Science scores for the institutions with an R&D orientation was 17.03 with a standard deviation of 2.32. The corresponding mean of the student Science scores from institutions without an R&D orientation was a significantly lower 15.46, with a standard deviation of 2.12. We are reluctant to make much of this difference because of the low reliability associated with the student scores and the selection bias that might be reflected in the sample of 16 schools.)

Serendipital Results. We were observing quite a bit of variance in the faculty Science scores, and we decided to continue to "exploit" the data to see if we could find some factors that might account for some of the variance. The publication of the Eash(1983) manuscript alerted us to one possibility. (We were painfully aware that a great deal of the variance was error variance, due to the unreliability of the scores generated by our measuring instruments.)

We had taken as a given that the institutions within the Dean's Network were R&D oriented. Eash's findings

suggested that we might use his classification scheme to "purify" the concept. We re-coded our data, assigning a "dummy" variable of 1.0 to each institution in our sample listed by Eash as being in the top 25 research producers in the United States. Eleven institutions were thus coded. The others, all 77, were assigned a dummy value of 0.0.

We had been particularly concerned about institution size, as assessed by the number of teacher candidates graduated in 1981. We coded all 88 institutions as a 3 if they graduated more than 300 teacher candidates in that year, as a 2 if they graduated between 100 and 300 candidates, and as a 1 if the institutions graduated less than 100 teacher education students.

In our concern for describing the samples we had used, we had assigned each a coded value depending upon the competitiveness of its student body as classified in the Barron's reference cited earlier. For this purpose, those institutions characterized in Barron's classifications as most competitive, highly competitive or very competitive were assigned a coded value of 3; those designated as competitive by Barron's were coded 2, while those classified as less competitive or non-competitive were given the

arbitrary value of 1.

Finally, it was noted that some professors reported they had received their doctoral training in institutions included in Eash's list of the top 25 research producers in the United States.(N=34) Others said they had studied in other institutions. To factor this variable into the analysis, the doctoral program of each teacher educator was assigned a value of 1.0 if it were included in Eash's list of the top 25 research producers, and a 0 otherwise.

A procedure for partitioning variance using regression techniques [20] was utilized to assess the extent to which the variables of R&D orientation (re-defined after Eash), competitive levels of enrollments, institutional size and research productivity of the instructor's doctoral program would account for the variance observed in this study. The results are set down in Table IX.

Table IX

PERCENT OF VARIANCE ACCOUNTED FOR IN THE SCIENCE SCORES BY R&D STATUS, LEVELS OF COMPETITIVE ENROLLMENTS, INSTITUTIONAL SIZE, AND R&D PRODUCTIVITY OF PROFESSOR'S DOCTORAL PROGRAM

SOURCE	PROPORTION OF VARIANCE
Uniquely explained by R&D status	0.6%
Uniquely explained by Size	2.3%
Uniquely explained by Levels of Competitive Enrollments	8.5%
Uniquely explained by Doctoral Program R&D Productivity	4.8%
Confounded	3.9%
Unexplained(Error Variance)	79.1%

R=.448

It seems as though a significant amount of the variance in the Science scores is accounted for by the competitive levels of enrollments of the institution. The higher the competitiveness, the greater the Science score. (The simple correlation of the competitiveness of enrollments indicator

and the Science score for all 88 faculty members was .31.) A second significant predictor was the research productivity level of the instructor's doctoral program. Those who graduated from a program with a high level of research productivity rated themselves higher on the Science scale than those who graduated from programs not included in Eash's top twenty-five. (The correlation of research productivity of doctoral programs and the Science score was .30.) A components of variance analysis was applied to the student scores, but only 5.6% of the variance in student Science scores was accounted for by the variables included in the model.

The two variables which accounted for a significant portion of the variance in faculty scores, competitiveness of enrollments and research productivity of doctoral program were also examined using a comparison of group means. Table X reports the differences in the mean scores on the faculty Science scale of the levels of these two predictor variables.

Table X

MEANS AND STANDARD DEVIATIONS OF THE SCIENCE SCORES OF PROFESSORS ATTENDING DOCTORAL PROGRAMS IN INSTITUTIONS WITH HIGH R&D PRODUCTIVITY AND THOSE ATTENDING DOCTORAL PROGRAMS IN INSTITUTIONS WITH LOWER R&D PRODUCTIVITY AND THOSE WORKING IN INSTITUTIONS OF VARYING COMPETITIVE UNDERGRADUATE ENROLLMENTS

PROFESSORS	N	MEAN	SD
Professors Attending Doctoral Programs with High R&D Productivity	34	18.47	4.94
Professors Attending Doctoral Programs with Lower R&D Productivity	54	15.88	4.28
Professors Working in Institutions with Highly Competitive UG Enrollments	9	20.55	3.32
Professors Working In Institutions with Competitive UG Enrollments	54	17.07	4.51
Professors Working In Institutions with Non-Competitive UG Enrollments	25	15.16	3.09

The very unreliable student scores mirrored the findings of the faculty data for both the variable research productivity of faculty members doctoral program (High Productivity, M=17.16, n=30, sd= 3.25; Less Productive, M=15.79, n= 157, sd=3.98) and the variable competitive enrollments (Very competitive, M=17.00, n= 17, sd = 4.03; Competitive, M=16.31, n= 112, sd=3.94; non-Competitive, M=15.13, n= 58, sd=3.95.)

SUMMARY OF FINDINGS, DISCUSSION AND IMPLICATIONS

Conclusions. It is important to begin this section with a rather lengthy account of the limitations that have been introduced into this study by a combination of factors, not all of which were out of our control. We had a rather mediocre return rate, our data were deemed only marginally reliable, our original definitions were changed in the course of the data analysis period to take advantage of newly available research findings, and we were relying here solely on the self-report of professors. Given these limitations, let us summarize our findings.

1. Given that the middle value of our scale, 18, (if everyone marked in the middle of each item), was higher than the mean value we observed across all 88 cases, 16.88, it can be said that the scientific mentality described by Freidson which guided the coding of our scale is not very much prevalent in the methods course of the professors who elected to respond to our survey.

2. Students enrolled in methods courses at institutions where the competition to enter is higher than average are more likely to experience the sort of scientific mentality we assessed than are students attending less competitive institutions.

3. Students who study with professors who themselves earned their doctorates at institutions with a record of high research productivity are more likely to meet up with the scientific emphasis reflected in our scale than are students who study with professors who received their degrees from other universities.

4. Students who study teacher education in institutions with a record of high research productivity are no more likely to encounter methods courses taught with the science

emphasis reflected in our scale than are students attending institutions without a record of high research productivity.

Discussion. Given the methodological weakness of this study, what can be said about the reasonableness of the findings? Whenever null results are reported in a research report, the lack of reliability in the measuring instruments seriously limits the confidence that can be placed in the claim of "no difference". However, when differences are observed, when trends are found in the data, the lack of reliability is not so much a problem. The trends loomed through all the error variance that clouded up the relationships that were being investigated. In this sense, then, finding of null results vis-a-vis the differences between institutions with research productivity and those with less can hardly be taken seriously - but the rather dramatic findings about the importance of the competitiveness of candidates and the research training of teacher educators seems worthy of consideration.

Another methodological factor is that of sampling. A key to the interpretation of the finding of any survey is in the analysis of the representativeness of the samples. Do

the samples here represent the populations? We were able to sample at least 12, with 11 useable returns, of the highly productive research institutions cited in the Eash report. Did the remaining 77 represent teacher education institutions with lower rearch productivities. The best we can say is that we don't know. Our estimates of "fit" included in the section above describing our sample suggests that given the range of institutions in our sample, large and small, highly competitive to non-competitive, private and public, there is some reason to pay some heed to the results of this study.

Finally, there is the issue of the variable of interest utilized in this study. What is the significance of a methods instructor having a "scientific mentality" and manifesting it in the methods course. Of course, we have no evidence to suggest that being "scientific" in working with teacher candidates is more, or less, effective than being "clinical". In fact, we imagined that being too scientific or too clinical would most likely hinder effective instruction. Our problem was to identify a variable that would very likely distinguish between the emphasis given to instruction in teacher education in an institution committed to an R&D orientation and the emphasis found in other

institutions. Claims were made that suggested that programs in R&D institutions would be better or at least different, but the nature of the difference was not specified. We thought it reasonable that the spirit of research found in the scientific mentality was a factor likely to differentiate between the two kinds of institutions. In one sense we were wrong, using the Dean's Network group as the way to identify research institutions in teacher education. We were wrong too when our method of defining research institutions was modified, making use of the Eash findings. And yet, our measures did reveal differences among instructors who were trained in research universities and those who were not; and among institutions having various levels of competitive enrollments of students.

Implications. The following ideas appear to merit consideration, given the findings of this research effort.

1. In making decisions about teacher education programs, whether to keep them or not, it seems important to base those decisions on the characteristics of faculty and the characteristics of students enrolled in the program, and not

on the overall reputation of the institution itself. For instance, should Harvard have a teacher education program? Now, presumably, Harvard can decide. But if policy makers were to advance some sort of rule or generalization, or perhaps following the model of medical education in accepting the judgments of a latter day Abraham Flexner, they should not consider solely Harvard's reputation, nor even its research productivity, but in addition the qualities of its students and professors.

2. The predictive value of knowing if a professor has graduated from an institution with a high research productivity record is of some interest. There are two interpetations of the finding. One is that students in those institutions learn what to say about their teaching; and the other is that they teach differently. In our case, since students confirmed what the professors said, at least in terms of their mean scores, we might argue that the methods courses are in fact different, and not just characterized differently by their professors. It is important however, to argue that while the courses may be different, they are not therefore better, one from another. We don't know if exposing candidates to a "scientific" mentality is important, but perhaps that issue itself could

be studied. But even if the difference here is only in the testimony of the professors, and the rhetorical differences observed in this study do not manifest themselves in classrooms, the support given for the construct "institutional press" in general, and for the "scientific press" specifically is of interest. As deans and directors of teacher education programs are looking for candidates with a scientific mentality, perhaps it is reasonable to recruit, at least initially, from institutions with records of high R&D productivity. Of course, if the clinical mentality is more attractive as an attribute of a potential faculty member, it would be prudent to look elsewhere for candidates with this quality.

---

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7. Astin, Alexander W. Four Critical Years, San Francisco: Jossey-Bass, 1977.

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11. Conant, James B. The Education of American Teachers, New York: McGraw-Hill, 1963.

12. Eash, Maurice. "Educational Research Productivity of Institutions of Higher Education," American Journal of Educational Research, 20-1,pp 5-12, 1983.

13. One professor in this group did not complete the scale on methods emphases.

14. Clark, David L. and Guba, Egon G. A Study of Teacher Education Institutions as Innovators, Knowledge Producers and Change Agencies, Washington, D. C.: National Institute of Education (DHEW), 1977.ERIC Document No. Ed 139 805.

15. Actually, the Clark and Guba summary included institutions which were either in AACTE or were NCATE approved. Only very few were the latter without being the former at that time.

16. Barron's Profiles of American Colleges. Woodbury, New York: Barron's Educational Series, Inc., 1981, pp. x-xviii.

17. Our letter was directed variously to deans, chairs, coordinators, or to whomever was designated as the principal teacher educator at the respective campus according to AACTE records and other sources.

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19. Ehman, L. A.,"A Comparison of three sources of Classroom Data: Teachers, Students, and systematic Observation" Bloomington, Indiana University, 1970.ERIC Document Number ED 037 404.

20. Cooley,W.W. and Lohnes, P.R., Evaluation Research in Education, New York: John Wiley and Sons, 1976, pp.219ff.

APPENDIX 1: Letters and Instruments

University of Illinois at Urbana-Champaign

College of Education
CENTER FOR INSTRUCTIONAL RESEARCH
AND CURRICULUM EVALUATION (CIRCE)
Room 270
1310 South Sixth Street
Champaign, Illinois 61820
(217) 333-3771

Dear

We write to ask your cooperation in carrying out a study with the primary goal of describing instructional intent in methods courses for candidates in teacher education programs. We are also interested in the perceptions that faculty and students hold concerning useful induction into professional practice. It would be extremely helpful if you would ask a faculty member in your institution who regularly teaches methods courses to consider responding to the enclosed questionnaire. In our cover letter to the faculty member, also enclosed, we are asking that he/she in turn distribute questionnaires to three students in his/her class. Of course, we respect the right of faculty and students to decline to participate in this effort, regardless of their reason.

To follow-up on our request, we are asking if you would kindly fill in the name of the methods instructor on the enclosed post card indicating to whom you have sent the materials and the faculty member's office telephone number. If the materials are not submitted as we requested, we will telephone the faculty member for this response. Again, if for any reason, the faculty member elects not to participate, we will simply say thank you and that will be the end of it. We appreciate your assistance in helping us carry out our study.

Sincerely,

James Raths
Professor of Education
University of Illinois
Urbana-Champaign

Judith Ruchkin
Associate Professor of Education
University of Maryland
College Park

JR/JR:ljm

Enclosures: Faculty Cover Letter
Post Card for Dean to Send to Researchers
Questionnaire for Faculty Member with Reply Envelope
Three Copies of Questionnaire for Students with Reply Envelopes

University of Illinois at Urbana-Champaign

College of Education
CENTER FOR INSTRUCTIONAL RESEARCH
AND CURRICULUM EVALUATION (CIRCE)
Room 270
1310 South Sixth Street
Champaign, Illinois 61820
(217) 333-3771

Dear Colleague:

More than ever, teachers need to be able to use their minds as they carry out the complex tasks of teaching. Thus, "teacher as thinker" is the focus of our study. While methods courses may be directed to affective goals, to providing opportunities for candidates to practice and rehearse their skills or to observe various teaching strategies, we are not asking about these intents. Our concerns are limited to instructional intent and perceptions in methods courses in order to address a cognitive aspect of teacher preparation. We are interested in your instructional emphasis and the opinion you and your students hold about rational, deliberate, or intuitive, spontaneous approaches as well as scientific study. By scientific study, we mean both the processes of inquiry and the uses of the results of such a process.

We ask that you complete the attached faculty questionnaire and return it to us in the enclosed envelope. In addition, we would appreciate your giving the student version to any three students enrolled in one of your methods classes. We would like them to complete the instrument in private and to mail it to us in the envelope we have enclosed for them. Please assure them and be assured yourself that in reducing the data, no individual, institution, or program will be identified with specific responses.

We would like to receive your written responses to our instrument; however, if you prefer to respond to our questions by telephone, we will be happy to call. If we do not receive in 10 days a response from you in the mail, we plan to telephone to discuss your reactions. Of course, at that time you can tell us that you have elected not to participate in the survey. In any event, thank you for giving our request your serious consideration. Our study obviously depends on your willingness to share with us your practices and perceptions about thinking that is appropriate for future teachers. Thank you.

Sincerely,

Judith P. Ruchkin

James Raths

JPR/JR/cja/M/W

Enclosures

1. Faculty instrument and return envelope
2. Student instruments and return envelopes

TEACHING STRATEGIES IN METHODS CLASSES

I. We are interested to know what sort of emphasis you give to the following "paired" approaches. We know that each end of the continua below are valued and each likely receives some emphasis in every course. Because we believe that only in the rarest of cases is the emphasis given to these components exactly equal, we are asking that you not check the middle point in the scale. We would like to learn which of the two approaches you stress more than the other. While this task may be frustrating to you, we feel that the forced choice will work to depict accurately the character of your course.

IN YOUR METHODS COURSE,
HOW MUCH EMPHASIS DO YOU GIVE TO THESE APPROACHES:

		← EMPHASIS →					
		Higher in this direction			Higher in this direction		
1.	Sharing anecdotes from your personal experiences in classroom teaching to support/clarify ideas and principles you are presenting.	2	1	0*	1	2	1. Sharing evidence from research studies to support/clarify ideas and principles you are presenting.
2.	Sharing lists of steps to follow in carrying out teaching acts.	2	1	0*	1	2	2. Examining scholarly topics and concerns and avoiding "how to" issues.
3.	Working to give candidates confidence in the methods taught to help them cope with the real world of teaching.	2	1	0*	1	2	3. Drawing attention to the limitations of "pat" methods by stressing situations in which a given practice may not work or may yield serious side effects.
4.	Stressing the power of the knowledge base of teaching and reaffirming that the profession knows fairly well what makes a good teacher.	2	1	0*	1	2	4. Encouraging candidates to doubt the efficacy of any and all prescriptions for teaching and stressing the need to be flexible in the teaching role.
5.	Assigning primary sources to candidates so that they might form some basis for making choices in their teaching from the direct contact they make with the writings of eminent scholars and theorists.	2	1	0*	1	2	5. Assigning secondary sources to candidates to help them more easily understand the contributions of seminal thinkers in the field.

*Please do not check the middle point of the scale.

6.	Providing opportunities for candidates to share their personal experiences with teaching.	Higher in this direction 2 1	0*	Higher in this direction 1 2	6.	Providing candidates with the opportunity to formulate tentative hypotheses about their teaching experiences.

7. If we have missed what you regard as your central cognitive emphasis, please describe the approach which characterizes your methods course.

*Please do not check the middle point of the scale.

II. In your course, how do you encourage candidates to make use of research findings in their professional roles. (Check the <u>one</u> response that best characterizes your intents in this matter.)

_____ 1. to find rules to follow in teaching.

_____ 2. to support personal and professional beliefs.

_____ 3. to change personal and/or professional beliefs.

_____ 4. to resist policy recommendations said to result from empirical studies.

_____ 5. to provide a framework for thinking about teaching.

III. In your methods course, what two research or scholarly sources are most important for your students to read and/or understand for the purposes of advancing the goals of your course?

1.

2.

IV. Please indicate your views of the following items by circling a number on the scale that is provided:

1. To what extent might an intuitive, or spontaneous approach to professional problems and tasks be useful in becoming a teacher?

5 4 3 2 1
a great deal — not very much

2. To what extent might a rational and deliberate approach to professional problems and tasks be useful in becoming a teacher?

5 4 3 2 1
a great deal — not very much

3. To what extent might the products of science, such as research findings and inventions, be useful to someone becoming a teacher?

5 4 3 2 1
a great deal — not very much

4. To what extent might a scientific approach, such as a problem solving process, be useful to someone becoming a teacher?

5 4 3 2 1
a great deal — not very much

V. To what extent is a scientific approach to professional or occupational problems apparent among the following persons (in general):

1. Your friends

5 4 3 2 1
a great deal — not very much

2. Your colleagues in education

5 4 3 2 1
a great deal — not very much

3. Your colleagues in liberal arts

5 4 3 2 1
a great deal — not very much

4. Your students

5 4 3 2 1
a great deal — not very much

5. Yourself

5 4 3 2 1
a great deal — not very much

VI. To what extent are the products of science, such as research findings and/or inventions, used by the following person(s) in general:

1. Your friends

5 4 3 2 1
a great deal — not very much

2. Your colleagues in education

5 4 3 2 1
a great deal — not very much

3. Your colleagues in liberal arts

5 4 3 2 1
a great deal — not very much

4. Your students

5 4 3 2 1
a great deal — not very much

5. Yourself

5 4 3 2 1
a great deal — not very much

VII. Please answer the following questions about yourself. (Please be assured that all responses to this questionnaire will be kept confidential. Responses will be summarized in broad categories suggested by the items below.)

1. I have taught methods courses on a fairly regular basis for _____ years.

2. The titles of the methods courses I teach are: _____.

3. The students in my methods classes are generally:

   _____ above average in academic ability.

   _____ about average in academic ability.

   _____ below average in academic ability.

4. My undergraduate major was _____; My undergraduate institution was _____.

5. My intended major when I started college was _____.

6. My highest degree was earned at the following institution: _____.

7. The major I pursued in earning my highest degree was _____. (If different from above, the major I began pursuing toward my highest degree was _____.)

8. On what area of inquiry, research, administration, evaluation are you now working? _____

9. The organization that I view as my primary professional association is: _____.

10. My sex is _____.

11. My age is _____.

12. My current institution is _____.

Comments:

Many thanks for your help in this study of the instructional intent and perceptions of methods courses. Please return to us in the envelope provided.

Judith P. Ruchkin
James D. Raths
Center for Instructional Research
and Curriculum Evaluation (CIRCE)
270 Education Building
1310 South Sixth Street
Champaign, Illinois 61820

TEACHING STRATEGIES IN METHODS CLASSES

We are asking you to help us learn about teaching strategies used in methods classes. Our concerns are limited to certain academic approaches that advance the goals of the course While methods courses may be directed to affective goals, to providing opportunities for candidates to practice and rehearse their skills, or to observe various teaching strategies, we are not asking about these intents. Here we are focused on the more academic aspects of methods instruction. Thank you so much for your help.

I. We are interested to know what sort of emphasis is given in your methods class to the following "paired" approaches. We know that each end of the continua below are valued and each likely receives some emphasis in every course. Because we believe that only in the rarest of cases is the emphasis given to these components exactly equal, we are asking that you do not check the middle point on the scale. We would like to learn which of the two approaches is stressed more than the other in your methods course. While this task may be frustrating to you, we feel that the forced choice will work to depict accurately the character of your methods course.

IN YOUR METHODS COURSE,
HOW MUCH EMPHASIS IS GIVEN TO THESE APPROACHES:

		← EMPHASIS →					
		Higher in this direction			Higher in this direction		
1.	Sharing anecdotes from your instructor's personal experiences in classroom teaching to support/ clarify ideas and principles presented.	2	1	0*	1	2	1. Sharing evidence from research studies to support/ clarify ideas and principles presented.
2.	Sharing lists of steps to follow in carrying out teaching acts.	2	1	0*	1	2	2. Examining scholarly topics and concerns and avoiding "how to" issues.
3.	Working to give us confidence in the methods taught to help us cope with the real world of teaching.	2	1	0*	1	2	3. Drawing attention to the limitations of "pat" methods, stressing situations in which a given practice may not work or may yield serious side effects.
4.	Stressing the power of the knowledge base of teaching and reaffirming that the profession knows fairly well what makes a good teacher.	2	1	0*	1	2	4. Encouraging us to doubt the efficacy of any and all prescriptions for teaching and stressing the need to be flexible in the teaching role.

*Please do not check the middle point of the scale.

5. Assigning primary sources so that we might form some basis for making choices in our teaching from the direct contact we make with the writings of eminent scholars and theorists.	← Higher in this direction	2 1 0* 1 2	Higher in this direction → 5. Assigning secondary sources to help us more easily understand the contributions of seminal thinkers in the field.
6. Providing opportunities to share our personal experiences with teaching.		2 1 0* 1 2	6. Providing the opportunity to formulate tentative hypotheses about our teaching experience.

7. If we have missed what you regard as the central cognitive emphasis, please describe the approach which best characterizes this methods course.

*Please do not check the middle point of the scale.

II. In your methods course, which of the following uses of research findings was stressed by your instructor. (Check the <u>one</u> response that best characterizes his/her intents in this matter.)

_____ 1. to find rules to follow in teaching.

_____ 2. to support personal and professional beliefs.

_____ 3. to change personal and/or professional beliefs.

_____ 4. to resist policy recommendations said to result from empirical studies.

_____ 5. to provide a framework for thinking about teaching.

III. In your methods course, what two research or scholarly sources were most important to read and understand for the purposes of advancing the goals of the course?

1.

2.

IV. Please indicate your views of the following items by circling a number on the scale that is provided:

1. To what extent might an intuitive, or spontaneous approach to professional problems and tasks be useful in becoming a teacher?

5 4 3 2 1
a great deal ... not very much

2. To what extent might a rational and deliberate approach to professional problems and tasks be useful in becoming a teacher?

5 4 3 2 1
a great deal — not very much

3. To what extent might the products of science, such as research findings and inventions, be useful to someone becoming a teacher?

5 4 3 2 1
a great deal — not very much

4. To what extent might a scientific approach, such as a problem solving process, be useful to someone becoming a teacher?

5 4 3 2 1
a great deal — not very much

V. To what extent is a scientific approach to professional or occupational problems apparent among the following persons (in general):

1. Your friends

5 4 3 2 1
a great deal — not very much

2. Your education professors

5 4 3 2 1
a great deal — not very much

3. Your liberal arts professors

5 4 3 2 1
a great deal — not very much

4. Your fellow students in education

5 4 3 2 1
a great deal — not very much

5. Yourself

5 4 3 2 1
a great deal — not very much

VI. To what extent are the products of science, such as research findings and/or inventions, used by the following person(s) in general:

1. Your friends

5 4 3 2 1
a great deal — not very much

2. Your education professors

5 4 3 2 1
a great deal ... not very much

3. Your liberal arts professors

5 4 3 2 1
a great deal ... not very much

4. Your fellow students in education

5 4 3 2 1
a great deal ... not very much

5. Yourself

5 4 3 2 1
a great deal ... not very much

VII. Please answer the following questions about yourself. (Please be assured that all responses to this questionnaire will be kept confidential. Responses will be summarized in broad categories suggested by the items below.)

1. Your current major is: _____

2. Your sex is: Male or Female

3. Your age is: _____

4. After graduation, you plan to _____ (occupation)

5. You live in a campus dormitory: Yes No

6. You live at home: Yes No

7. Most of your friends are majoring in: _____

8. What was your intended major when you started college: _____

9. You transferred to this institution: Yes No
   If Yes, how many credits did you transfer in? _____ (approximately)

10. What is your chief co-curricular or extracurricular involvement on campus: _____

11. You have completed _____ hours toward graduation (approximately - counting this semester).

12. You have _____ hours in Education courses (approximately - counting this semester).

13. I am currently enrolled in _____ (name of institution).

14. The name of this methods course is _____.

Comments:

Many thanks for your help in this study of the instructional intent and perceptions of methods courses. Please return to us in the envelope provided.

Judith P. Ruchkin
James D. Raths
Center for Instructional Research and
Curriculum Evaluation (CIRCE)
270 Education Building
1310 South Sixth Street
Champaign, Illinois 61820

APPENDIX 2: Additional Data

ADDITIONAL FINDINGS

TABLE 1

DISTRIBUTION OF PROFESSORS: QUALITY OF UNDERGRADUATE ENROLLMENTS IN DOCTORAL INSTITUTIONS ATTENDED AND QUALITY OF UNDERGRADUATE ENROLLMENTS WHERE PROFESSOR TEACHES, N=95

QUALITY OF UG INSTITUTIONS WHERE PROFESSOR TEACHES	QUALITY OF UG ENROLLMENTS OF INSTITUTIONS WHERE PROFESSOR EARNED DOCTORATE			
	VERY COMPETITIVE	COMPETITIVE	NON COMPETITIVE	OMIT
VERY COMPETITIVE	5	3	0	2
COMPETITIVE	18	27	7	5
NON-COMPETITIVE	7	14	5	2
TOTALS	30	44	12	9

Table 2

DISTRIBUTION OF PROFESSORS: ATTENDED DOCTORAL PROGRAMS IN INSTITUTION WITH HIGH VS LOWER RESEARCH PRODUCTIVITY AND QUALITY OF UNDERGRADUATE ENROLLMENT WHERE PROFESSOR TEACHES,N=95

QUALITY OF UNDERGRADUATE ENROLLMENTS WHERE PROFESSOR TEACHES	R&D PRODUCTIVITY OF INSTITUTION WHERE PROFESSOR EARNED DOCTORATE: HIGH PRODUCTIVITY	LOW PRODUCTIVITY	OMIT
VERY COMPETITIVE	5	3	2
COMPETITIVE	23	29	5
NON-COMPETITIVE	6	20	2
TOTALS	34	52	9

Table 3

DISTRIBUTION OF PROFESSORS: ESTIMATE OF THE QUALITY OF STUDENTS AND WORKING IN INSTITUTION WITH VARYING LEVELS OF QUALITY OF UNDERGRADUATE ENROLLMENTS,N=95

	PROFESSORS' ESTIMATE OF STUDENT QUALITY			
LEVELS OF QUALITY OF UG ENROLLMENTS WHERE PROFESSOR TEACHES	ABOVE AVERAGE	AVERAGE	BELOW AVERAGE	OMIT
VERY COMPETITIVE	6	3	0	1
COMPETITIVE	22	32	2	1
NON-COMPETITIVE	8	17	1	2
TOTALS	36	52	3	4

Table 4

AGE AND YEARS OF TEACHING METHODS COURSES OF PROFESSORS (N=95) IN INSTITUTIONS OF VARYING COMPETITIVE ENROLLMENTS

QUALITY OF UG ENROLLMENTS WHERE PROFESSOR TEACHES	AGE (mean/sd)	YRS OF EXP[1] (mean/sd)	N
VERY COMPETITIVE	51.11/8.0	15.00/7.4	9(1 OMIT)
COMPETITIVE	46.62/8.2	12.11/7.7	54(3 OMITS)
NON-COMPETITIVE	48.52/7.8	10.88/5.6	25(3 OMITS)

[1] YEARS OF EXPERIENCE TEACHING METHODS COURSES.

Table 5

PRIMARY PROFESSIONAL ASSOCIATION OF PROFESSORS (N=95) BY QUALITY OF UNDERGRADUATE ENROLLMENTS[1]

	Nature of Association				
QUALITY OF UNDERGRADUATE ENROLLMENTS WHERE PROFESSOR TEACHES	Research	Teacher Education	Union	Subject Matter	ASCD
VERY COMPETITIVE	0	1	0	6	2
COMPETITIVE	11	6	1	31	5
NON-COMPETITIVE	5	1	5	11	3
TOTALS	16	8	6	48	10

[1] SEVEN(N=7) PROFESSORS OMITTED THIS ITEM.

Table 6

SUMMARY OF RESULTS FOR PROFESSORS [N=88]

ATTRIBUTES OF SUB-SAMPLES:MEANS

	HIGH R&D PROD.	LOW R&D PROD.	VERY COMPET-ITIVE	COMPET-ITIVE	NON-COMPET-ITIVE	ALL
N	11	77	9	54	25	88
QUALITY OF UG	3.00	2.76	4.66	3.00	1.68	2.79
% FEMALE	64%	42%	40%	43%	50%	44%
SIZE	2.63	1.88	2.00	2.07	1.33	1.97
SCIENCE	19.18	16.55	20.55	17.07	15.16	16.88
ST./SCI	15.75	16.04	17.00	16.31	15.13	16.01
ST./N'S	24	163	17	112	58	187

HIGH R&D PROD — Professors working at an institution on Eash's(1983) list of high research producers.

LOWER R&D PROD — Professors working at an institution not on Eash's list.

VERY COMPETITIVE — Professors working at an institution which has very competitive enrollment standards.

COMPETITIVE — Professors working at an institution which has competitive (middle) enrollment standards.

NON-COMPETITIVE — Professors working at an institution which has low or no enrollment standards, eg. a policy of open enrollments.

SIZE — Coded as follows:3=300grads; 2=300-100;1=less than 100.

SCIENCE — Report of the extent methods are taught"scientifically".

Table 7

DISTRIBUTION OF PROFESSORS: WORKING IN INSTITUTION WITH HIGH VS. LOWER RESEARCH PRODUCTIVITY AND QUALITY OF ENROLLMENTS OF INSTITUTION PROFESSOR ATTENDED AS UNDERGRADUATE

QUALITY OF UG ENROLLMENTS OF PROFESSORS' UNDERGRADUATE INSTITUTION	R&D PRODUCTIVITY OF INSTITUTION IN WHICH PROFESSOR TEACHES: HIGH PRODUCTIVITY	LOWER PRODUCTIVITY
VERY COMPETITIVE	3	11
COMPETITIVE	7	47
NON-COMPETITIVE	1	26
TOTALS	11	74

NOTE: THREE PROFESSORS OMITTED RESPONDING TO THIS ITEM.

Table 8

CORRELATIONS OF CONTEXTUAL VARIABLES WITH SCIENCE SCORES

	Faculty (N=88)	Students (N=187)
R&D Productivity: (1=High,0=Lower)	.20	-.02
Quality of UG Enrollments: (5 or 4=Very Competitive; 3=Competitive; and 1 or 2=Non-Competitive)	.31	.11
Size:(3=300 or more graduates in TE; 2=100-300 grads; 1=less than 100 grads)	.13	-.10
R&D Productivity of Doctoral Program Attended by the Prof. (1=high productivity; 0=lower productivity)	.30	.19
Multiple R	.448	.237
Years of Experience	-.08	
Teaching Methods Courses		
Sex of Professor (0=M; 1=F)	.13	

Table 9

PRIMARY RESEARCH INTERESTS OF PROFESSORS AND RELATED VARIABLES

Variables	R&D in T.E.	R&D in Educ.	Vague or Unknown	Total
N	20	32	43	95
Science Score	15.95	17.29	17.05	16.88
% Graduated from Highly Productive(R&D) Doctoral Program.	30%	44%	32%	35%
% Employed in Highly Productive R&D Institution	15%	13%	9%	12%

Table 10

SCIENCE SCORES OF PROFESSORS WORKING IN VARIOUS SETTINGS: PRIVATE OR PUBLIC INSTITUTIONS, BACHELORS, MASTERS OR DOCTORAL LEVELS

	BACHELOR	MASTER	DOCTORAL
PRIVATE			
N	15	10	15
MEAN	15.5	17.2	17.1
SD	4.2	3.9	4.6
PUBLIC			
N	2	14	32
MEAN	13.5	17.1	17.5
SD	4.9	3.1	4.8