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AUTHOR Smith, Nick L.; Rutherford, William L.
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ABSTRACT

This report provides an illustrative discussion of the nature of a cost-effectiveness study in a higher education setting. It focuses on the cost-effectiveness of two field-based teacher preparation courses taught in a college of education. It is not a comprehensive cost analysis study, but an exploratory review of the dimensions and problems of such a study to address specific, restricted program management questions. The cost analysis problem, costing of alternatives, discussion of costs, estimating the effects, and relating costs and effects are discussed. The appendices include: cost effectiveness of teacher preparation courses (possible program ingredients and cost items), final evaluation of student teaching form, and end of student teaching evaluation ratings and grade point averages. (PN)

No. 85 AN ILLUSTRATIVE COST-EFFECTIVENESS INVESTIGATION OF FIELD-BASED TEACHER PREPARATION COURSES

NICK L. SMITH
Northwest Regional Educational Laboratory

WILLIAM L. RUTHERFORD
University of Texas at Austin

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Nick L. Smith, Director
Research on Evaluation Program
Northwest Regional Educational Laboratory
300 S.W. Sixth Avenue, Portland, Oregon 97204

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## PREFACE

The Research on Evaluation Program is a Northwest Regional Educational Laboratory project of research, development, testing, and training designed to create new evaluation methodologies for use in education. This document is one of a series of papers and reports produced by program staff, visiting scholars, adjunct scholars, and project collaborators--all members of a cooperative network of colleagues working on the development of new methodologies.

How might a higher education department use a cost-effectiveness analysis in making programmatic evaluation decisions? What might be the nature of such an analysis? This document reports on an illustrative investigation of the cost-effectiveness of two field based teacher preparation courses. This investigation was not a comprehensive cost analysis study, but an exploratory review of the dimensions and problems of such a study. This report should help others considering cost studies of teacher preparation courses.

Nick L. Smith, Editor
Paper and Report Series

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# AN ILLUSTRATIVE COST-EFFECTIVENESS INVESTIGATION OF FIELD-BASED TEACHER PREPARATION COURSES

## Introduction

Declining programmatic resources have prompted increased attention to the use of cost analysis methods in the evaluation of educational programs. Although there has been growing professional discussion of these methods, there are surprisingly few actual applications to serve as models to evaluators and administrators interested in conducting such studies. The purpose of this report is to provide an illustrative discussion of the nature of a cost-effectiveness study in a higher education setting.

This study focuses on the cost-effectiveness of two field-based teacher preparation courses taught in a college of education. The department teaching these courses was taken as the client, and its point of view was adapted in considering which program costs and effects should be considered in the analysis. This investigation was not a comprehensive cost analysis study, but an exploratory review of the dimensions and problems of such a study.

Although cost studies might be undertaken as part of a research investigation or a policy study, the concern here is with the use of cost studies in focused program evaluations where one is attempting to address a relatively narrow management decision. In such applications, there is likely to be little interest or resources for conducting a fully comprehensive analysis of all program costs and benefits. Instead, a more restricted study would seem appropriate. For example, in the study reported here, the basic cost-effectiveness question was, "What is the additional cost of offering two reading methods courses in a field-based format rather than a traditional campus lecture format, and is the extra cost worth it in terms of

improved student performance during their student teaching performance?" A relatively focused cost study seems appropriate, given this question, and this report illustrates what might be involved in such a study and how one would proceed. The report should be of interest not for the specific results it presents but for its discussion of process.

The remainder of this introduction describes the setting of the study and the instructional courses being evaluated. The next section presents the basic cost-and-effects questions, the actual estimation of costs-and-effects data, and an interpretation of possible study findings.

## The College of Education

This trial application of cost-effectiveness analysis took place in a college of education at a large state university in the Southwest. The college of education serves as a professional school preparing teachers to work in elementary and secondary schools. The college also serves as the selection agent for all students seeking legal certification to teach, whether enrolled in the college of education or some other college of the university. Further, the college of education provides the sequence of professional courses for all students preparing to teach, regardless of the college in which they are enrolled.

The college of education offers the bachelor of science in education degree with seven areas of major concentration possible:

I. Elementary School Teaching,
II. Kindergarten and Elementary School Teaching,
III. Special Education and Elementary School Teaching,
IV. Secondary School Teaching,
V. Physical Education Teaching,
VI. Employment in Educational and Youth Serving Agencies, and
VII. Teachers of Young Children (ages 3-8).

Other colleges also offer coursework leading to teacher certification. This is particularly true for secondary education majors. For example, students must study in the college of fine arts to teach art, drama, or music; they must enroll in the school of communications to teach in the special education areas

of speech therapy and the deaf. The colleges of business administration, liberal arts, and natural sciences also prepare teachers at the secondary school level. It is the college of education's elementary school teaching specialization which is of concern in this study, however.

The Department

This cost-analysis investigation was conducted in collaboration with a faculty member in the college of education's department of curriculum and instruction and concerns two of the department's reading concentration courses. The department, consisting of approximately 67 faculty members, offers in excess of 90 undergraduate courses per semester and over 60 graduate level courses a semester.

All students wishing to obtain the Bachelor of Science in Education degree with a specialization in Elementary School Teaching must complete a four-part program comprising a total of 126 semester hours. First, they are required to take a basic set of liberal education courses, including about 48 semester hours of work in English, ethnic studies, multicultural education, psychology, geography, history, government, mathematics, and science. Second, they are required to take a minimum of 18 hours of academic work in their special area of concentration. The possible areas of concentration and the number of required semester hours are listed below (note that the required hours range from 18 to 36):

Anthropology (18)
Art (24-36)
Bilingual Education (27)
Biology (18)
Chemistry (19)
Drama (23-24)
English (24)
French (23)
Geography (18)
Geology (18-20)
German (23)
Government (18)
History (18)

Mathematics (18-20)
Music (24)
Physical Education (21)
Physics (18)
Psychology (18)
Reading (18)
Russian (23)
Sociology (18)
Spanish (23)
Speech (21)

Third, students must take courses in a composite elementary education specialization, including courses in physical education for elementary school, children's literature, two courses in music or art teaching, and two courses in speech, health, or creative dramatics. Fourth, students are required to take 30 hours of courses in the area of professional development, including the student teaching experience and courses on

Psychological Foundations of Elementary Education
Directed Learning in the Elementary School
Reading Methods
Methods of Teaching: 2 from Language Arts, Science, Social Studies, Mathematics, or Adaptations for the Deaf
One course on Special Problems, Educational Theory, Media, or Tests and Measurements.

All students in the elementary education teacher preparation program are therefore required to take a common core of courses to get a teaching certificate, in addition to concentrating in one of the 23 areas listed above. Although students in all concentrations must take departmental courses as part of the professional development sequence, only elementary education students in the bilingual education and reading concentration are required to take additional departmental courses. This study is concerned with the cost-effectiveness of the additional departmental courses required of students in the reading concentration.

The Reading Concentration

Students in the reading concentration enroll in the following courses:

Tests and Measurements in Reading
One course from English, Linguistics, Applied Linguistics, Early Childhood Language Acquisition, or Language Problems of Exceptional Children
One course from Psychology, Personality Development, or Survey of Exceptionalities in Special Education

In addition, reading concentration students are required to take, at a minimum, 9 more hours in the department. Many other students elect to take additional courses in the department, especially the Early Childhood Language Acquisition course. The 9 hours required of the reading students includes a 3-hour seminar course on teaching reading (course number 371), and a 6-hour course on reading materials and individualized reading (course number 671). These latter two courses are field based practicum courses required of and restricted to reading students. Because these two courses are taught in the elementary schools, they are more expensive than the campus-based courses offered to students in the non-reading concentrations. It is the cost-effectiveness of these latter two courses which is of interest in this study.

Subsequent to completing the required courses, all elementary education students participate in student teaching. Approximately 150 students participate in student teaching in the fall semester, about 175 students in the spring semester. Approximately forty-five of these students each semester are in the reading concentration program which has from 170 to 200 students in various stages of their program at any given time. (For the purposes of this study we will use the number of 45.) During student teaching, students are in the schools every morning five days a week, and Tuesday and Thursday afternoons for approximately fourteen weeks. In addition, students usually take at least one other course during the semester. By the end of the semester, each student is to have been in complete charge of the classroom for at least two full weeks.

## The Cost Analysis Problem

The primary cost analysis question of concern in this study is the cost-effectiveness of the additional 9-hour sequence (courses 371/671) taught within the department and required of reading students. On the cost side, because the courses are taught off-campus, they are more expensive. On the effects side, the courses provide students with additional instruction and field experience in practical techniques of teaching. The faculty believe that this additional field experience better prepares the students for their student teaching experience, for their work as actual teachers, and for obtaining teaching positions.

Since the argument in favor of the additional 9 hours of required field courses is that the additional methods training and field experience are worth the additional cost, let us review the differences in methods and field experience provided to all elementary education students. Before the student teaching experience, all students are required to take these courses:

Directed Learning in the Elementary School
A practicum course for students to spend time in the schools to learn what is taught and how it is taught, i.e., teaching procedures and subject content.

Reading Methods
A campus course on teaching reading: curriculum content and organizational, teaching procedures, materials, and research.

Methods of Teaching--Must choose 2 from Language Arts, Science, Social Studies, or Mathematics
Campus courses similar to the Reading Methods course but on other elementary school topics.

In addition, the reading concentration students take the two additional methods and field experience courses mentioned earlier:

371: Curriculum and Instruction: Reading
A three-hour seminar course to aid students in developing a broader framework for structuring their own teaching; a school district based course to help students conceptually integrate thinking and theory about teaching reading.

671: Reading Materials and Individualized Reading
A six-hour course on methods and materials in reading instruction. Course includes daily work in

the schools with directly supervised experience in teaching reading. Also includes seminar time to focus on appropriate teaching materials to use.

These two classes are held together at the practicum site on the schools. While non-reading concentration students may take other courses to increase teaching skills, such as math students taking courses on how to teach math, none of the non-reading students take 671 (Reading Materials and Individualized Reading), and none of the other courses are designed as field-based courses. Although non-reading students take other courses in lieu of 371 and 671, sometimes taking more total hours than the reading students, all of the other courses are taught in the traditional campus-based format. Only the reading students receive this extra 9 hours of methods training and field-based practicum experience.

Costing the Two Alternatives

By teaching the 671 course as a field-based practicum experience rather than a traditional campus classroom course, the Department incurs additional costs. The 45 reading students taking the course each semester could be grouped into two standard university classes of 22 and 23 students each. Instead, the students are assigned to one of three different elementary schools for their instruction. Similarly, the 371 course could be taught the traditional way, but by coupling it with the 671 course, the lower enrollments result in higher faculty costs (i.e., 3 classes of 15 instead of 2 classes of 22 and 23). Teaching assistants (TAs) are also needed with the field-based versions of 371 and 671 so that each student receives on-site observation and supervision each week. The TAs would not be needed if the courses were taught in the standard campus class format.

The cost comparison of interest here, then, concerns the comparison of the 371/671 courses as they are now taught in the field with the way they could be taught under the standard campus format. The two alternative formats are illustrated below.

TABLE 1

Alternative 371/671 Course Organizations

Current Field Based Format

| Section | at School | with | students, | faculty, | TA |
|---|---|---|---|---|---|
| 1 | A | 15 | 1 | 1 | 1 |
| 2 | B | 15 | 1 | 1 | 1 |
| 3 | C | 15 | 1 | 1 | 1 |

Total: 3 sections at 3 schools for 45 students with 3 faculty and 3 TAs

Traditional Campus Format

| Class | on Campus with | students and | faculty |
|---|---|---|---|
| 1 | 23 | 1 | |
| 2 | 22 | 1 | |

Total: 2 classes on campus for 45 students with 2 faculty

Thus the additional staff cost to the department from conducting two field-based courses rather than a traditional campus-based course is 1 faculty member and 3 TAs (nine credit hours per semester is considered a full load for one faculty member). Using a departmental average nine-month faculty salary of $26,000 (thus $13,000 per semester) and TAs at $3,000 a semester each, the additional field-based staff costs per semester turn out to be:

| | |
|---|---|
| 1 additional faculty | $13,000 |
| 3 teaching assistants | 9,000 |
| | $22,000 |

More precise estimates could be obtained by using actual rather than estimated faculty salaries.

Because faculty, TAs, and students must travel to the school sites for instruction, there are important additional transportation costs under the field-based format. The computation of these costs is illustrated below.

TABLE 2

Student Travel Costs

| | School 1 | School 2 | School 3 |
|---|---|---|---|
| Miles round trip from campus | 35 | 8 | 16 |
| Trips a week | 5 | 5 | 5 |
| Number of weeks | 14 | 14 | 14 |
| Number of students | 15 | 15 | 14 |
| Cost per mile | $ .22 | $ .22 | $ .22 |
| | $8,085.00 | $1,848.00 | $3,696.00 |

Total Student Travel Costs $ 13,629.00

TABLE 3

Teaching Assistant Travel Costs

| | School 1 | School 2 | School 3 |
|---|---|---|---|
| Miles round trip from campus | 35 | 8 | 16 |
| Trips a week | 5 | 5 | 5 |
| Number of weeks | 14 | 14 | 14 |
| Number of TAs | 1 | 1 | 1 |
| Cost per mile | $ .22 | $ .22 | $ .22 |
| | $539.00 | $123.20 | $246.40 |

Total Teaching Assistant Travel Costs $ 908.60

TABLE 4

Faculty Travel Costs

| | School 1 | School 2 | School 3 |
|---|---|---|---|
| Miles round trip from residence | 10 | 8 | 2 |
| Trips a week | 5 | 5 | 5 |
| Number of weeks | 14 | 14 | 14 |
| Number of faculty | 1 | 1 | 1 |
| Cost per mile | $ .22 | $ .22 | $ .22 |
| | $154.00 | $123.20 | $30.80 |

Total Faculty Travel Costs $ 308.00

The transportation costs for students is $13,629, for TAs $908.60, and for faculty $308.00, for a total cost of $14,845. These cost estimates are based on actual distances to the schools used in the courses but do not consider the savings that may be occurring from car pooling by students. Also, the faculty distances are based on estimates of travel distances from faculty residences to the schools rather than from campus; consequently, these estimates would vary depending upon which faculty are teaching in which schools each semester. A summary table of the total costs computed thus far follows (the costs per student are indicated in parentheses).

TABLE 5

Additional Costs of Teaching 371 and 671 Under the Field Based Format

Total Cost (Cost per Student) Per Semester

| | Cost to Department | Cost to Students (45) | Cost to Faculty (3) and TAs (3) | Total |
|---|---|---|---|---|
| Faculty Salary | $13,000 ($289) | | | |
| TA Salary | $ 9,000 ($200) | | | |
| Mileage | | $13,629 ($303) | $1,217 ($27) | |
| Total | $22,000 ($489) | $13,629 ($303) | $1,217 ($27) | $36,846 ($819) |

Discussion of Costs

A number of other aspects of these courses could be costed out but have not been in this example. (See Appendix A for a listing of possible cost items in teacher preparation courses.) Recall that the purpose of this study was to illustrate the use of cost analysis in response to a specific question by a program manager, not to provide a comprehensive cost-effectiveness study of all program elements. Faculty and TA salaries are indeed the

major additional costs incurred by the department in teaching the 371/671 sequence in the field based format. The transportation charges were computed to illustrate the existence of costs to others (sometimes substantial costs, as with the student mileage figures) which can result from department action.

Why were other departmental items not included in the cost analysis? In some cases, the additional costs were considered to be too inconsequential to warrant computing their costs. In other words, experience with the cost of these items suggested that no matter what their actual dollar value turned out to be, it would not be sufficiently important to change any administrative decision. Secretarial time and reproduction of material costs fall into this category. The differences in their costs under the field-based versus traditional formats were judged to be inconsequential.

For some items, of course, it may be difficult to judge a priori whether their costs are indeed inconsequential. For example, in this study we discussed the possible costs of additional faculty time required to coordinate the field-based program and the possible additional load placed on the Director of Field Placement who places students in schools for student teaching and is occasionally involved in the 371/671 courses because they are field-related. We assumed that these additional costs were either inconsequential or at least only marginally relevant and so not worth the effort required to cost them out. We could, of course, be overlooking substantial program costs this way.

In such studies as we are discussing here, one would not cost out all possible program elements, but a misjudgment about which elements are most important could result in a biased and possibly misleading picture of the true costs of the program.

A second reason for not including certain elements in the cost analysis is that, although they may represent university costs, they do not reflect costs to the department of curriculum and instruction. Facilities and some equipment fall into this category. Though one could argue that by teaching 371/671 in the

field the department frees up classrooms, in reality this represents no real savings to the department, since the classrooms may be reassigned by the college to other uses or sit empty. If many department courses were taught in the field so that the college needed fewer facilities, then there might be a savings to the college, but in either event, under current conditions of ample facilties at this campus, no real gain or loss accrues to the department by teaching these two courses in the field. This might be noted as a case in which a technical economic benefit in fact reflects no actual programmatic benefit.

Another example of university-related costs that may not be considered in a departmental cost analysis are the faculty and TA transportation costs presented earlier. Since these monies do not come from the departmental budget, they might be excluded from consideration, even though they are actual costs generated by the department's decision to use a field-based format. Should the department decide to reimburse staff for all instruction-related expenses, however, the costs would naturally be included.

A third similar reason for not costing additional elements of the program may be that they represent no cost to the university at all. For example, although the student transportation costs are substantial, one could simply consider them as a form of necessary "lab fee" associated with the instruction. Likewise with other student expenses such as increased food and clothing costs which result from their working in the more formal school setting. What about the costs to the school districts which participate in this program? Principals must spend additional time in coordination activities, while teachers must provide some supervision, direction, and feedback to the students. A complete cost analysis of all components of this program would include a costing out of these school district costs as well. From the department's point of view, however, these items represent neither costs to plan for nor savings that could be realized in any way through resource redirection. So these items might be excluded from a departmental cost review.

Some items are so complex that it is difficult to decide whether to include them in the analysis and, if so, whether as costs, benefits, or both. For example, it takes more individual faculty time to teach 371/671 in the field than it does if they were taught as traditional courses. This additional time is (a) a cost to the individual faculty member who then has less time for research, writing, or other duties, (b) a benefit to the students who have greater daily access to faculty, and (c) a benefit to the school staff who have greater access to faculty consultation assistance. How should this increased faculty load be included in the analysis?

## Estimating the Effects

Given the departmental mission, increased student performance would be considered a benefit to the department. In this analysis, we are thus comparing departmental costs with departmental benefits.

The department reading faculty believe that the additional methods instruction and classroom experience provided by the current 371/671 sequence prepares students to be better teachers and enhances their performance during student teaching. One of the most important effects of the program then should be apparent during the student teaching experience.

At the end of student teaching, a university supervisor rates the students' overall performances. A copy of the rating form used is included in this report as Appendix B. From 1981 graduates, two groups of twenty students each were randomly selected, one group of reading concentration students and one group of non-reading concentration students. The average end of student teaching rating for the reading group was 4.53 on a 5-point scale; the average for the non-reading students was 4.07. (See Appendix C for a complete listing of the raw data.) Although there are psychometric problems with these ratings (unanchored scales, imprecise recording, lack of validity

information, possible restriction of range, etc.), they do suggest that the reading students are doing better at student teaching than the non-reading students.

There are, of course, a variety of possible reasons why the students may be scoring higher other than the fact that they have taken the field based 371/671 courses. For example, perhaps they are simply better students academically. Appendix C contains the grade point average for the two groups, 3.12 for the reading students, and 3.02 for the non-reading students. The reading students are doing a little better scholastically, but is that sufficient evidence to argue that the field-based courses are having no effect?

A better comparison than reading with non-reading students would be to compare reading students who have taken 371/671 under field-based conditions with reading students who have covered the same material in a traditional campus format. Of course, such a comparison would require making programmatic changes to the course offerings, not as a result of the cost-effectiveness analysis, but in order to perform the analysis. In order to unequivocally determine what effects the 371/671 field-based courses have on student teaching performance, a randomized field experiment design would be most desirable.

There are many effects that might result from the field-based nature of 371/671 which one might include on a cost-effectiveness analysis. Some of the beneficial effects for students might be not only better preparation for student teaching, but:

experience in 3 different school settings instead of the usual 2, helping them with job placement decisions,

greater self-confidence in their own teaching due to increased daily supervision and feedback,

a collection of their own instructional materials for use in student teaching and subsequent professional teaching (these materials are a common by-product of the two courses now), and

greater employability due to more field experience.

The schools receive such additional benefits as supplemental teaching help during the periods in which the reading students are in charge of class instruction, and free consultation and assistance from the "resident" faculty and TAs. (Of course, there may also be negative benefits to the schools such as increased disruption of the daily routine, greater teacher competition for resources, etc.) The faculty may experience positive effects such as easier access to research opportunities in the schools, increased chances for consulting work, and so on.

Which effects should one examine in doing a cost-effectiveness study? Is potentially increased student employability a more important effect than increased faculty research in the schools or greater teacher access to faculty assistance? As with costs, which effects are deemed worthy of measurement and inclusion in the analysis depends upon the purposes of the study and the point of view of the client. While one might examine all possible effects identified by a listing of all logical elements of a program in order to do a comprehensive cost-effectiveness study, only a few of the most salient effects are likely to be selected when one is doing a targeted study for use as part of a program evaluation. Effects are most likely to be selected on the basis of the context of the study, its purposes, and the resources available. Such decisions are not made on the basis of technical cost accounting procedures, but on the basis of contextual program management concerns.

## Relating Costs and Effects

The earlier analyses suggest that the Department is paying an additional $489 per student per semester in order to conduct the 371/671 sequence as a field-based practicum. Further, the reading students are scoring, on the average, .46 points higher on the end of student teaching evaluation than the non-reading students. The question remains that even if the 371/671 sequence is contributing significantly to the improvement in student teaching, is this a worthwhile way for the department to spend its money?

Consider that if it cost the department $20,000 for students to attain a 4.07 rating on student teaching, then an additional $22,000 expenditure for a score of 4.53 is very costly. However, if it were to cost the department $200,000 for a 4.07 rating then another $22,000 for a .46 increase would be economical. In other words, whether the $22,000 is a good investment depends in part on total program costs to the department.

A gross way to estimate total departmental costs is to consider faculty salary estimates. Students must take 27 hours in the department in order to graduate. At 9 hours for 1 full-time faculty position, this 27 hours converts to 3 FTE, which at $26,000 a year ($13,000 a semester), is $39,000 a semester in faculty costs per 23 students. For 45 students the cost would be $78,000 or $1,733.33 per student per semester. Since the field-based courses cost $22,000 more, the total cost for them is $100,000 ($78,000 + $22,000), or $2,222.22 per student per semester.

Under the traditional format, the department would pay $1,733 for a 4.07 rating, or $425.80 for a 1-unit gain in student teaching performance. Under the field-based approach, the department pays $2,222 for a 4.53 rating or $490.50 for a 1-unit gain in student teaching performance. Assuming that the entire increase in the student teaching rating evaluation was due to the field-based 371/671 courses, one can say that on the average, the additional $489 per student per semester resulted in a .46 point gain in student achievement.

Based on their experience in preparing teachers, some reading faculty might argue that this is a cost-effective expenditure, while other reading faculty might argue that there are different ways in which the $489 could be used which would be of greater benefit to the reading students. The math faculty might argue in a different vein, pointing out that math students are currently more employable than reading students, are in greater demand in the schools, and are cheaper to educate. They might argue that the department's $22,000 could be used to increase the number of

math students in the department, while causing only minor changes in the department's reading program (i.e., changing two courses from a field-based to a campus-based format).

The point of the foregoing paragraph is to illustrate that which costs and which effects are incorporated into a cost-effectiveness analysis done as a part of a program evaluation may depend to a large extent upon the administrative alternatives being considered. If the departmental resources are to stay with the reading program, then alternative costs and effects of increasing reading student performance would be included in the analysis. If, however, there is a possibility that resources may be shifted to, say, the math program, then the analysis might include a different set of costs and effects, for example, the comparative employability of math and reading students. These design questions would need to be answered before the cost-effectiveness study was initiated, since seldom will a sufficiently complete analysis be done to be able to answer such questions on a post hoc basis.

## Conclusion

The focus of this report has been on the use of cost analysis studies in program evaluations to addressing specific, restricted program management questions. It should be clear from the study presented that the purpose of the investigation and the specific client's point of view which focuses the study materially effect which program costs and effects are considered worthy of study. Another client studying the same program for different purposes might employ considerably different costs-and-effects estimates. While one could conduct a complete cost analysis which incorporated all identifiable costs and effects, limited time, resources, and interest are likely to preclude such studies in most evaluation work. Managerial cost studies like the one illustrated here should be recognized as both of considerable use to local decision makers and subject to considerable bias due to

a restricted focus. Like other forms of local level managerial evaluations, these studies will more closely resemble local problem-solving efforts than generalizable research studies.

In the illustration provided here, a number of reasons why certain elements might be excluded from an analysis were mentioned; for example, because the costs or effects were judged to be inconsequential, are of no gain or loss to the department, are outside of the department's control, and are of no gain or loss to the university (i.e., are outside the range of the client's interest). Further, the study's purpose (e.g., internal program modifications) might warrant ignoring some effects which would have to be included under a different purpose (e.g., justifying the program to external audiences). Finally, some effects may not be assessed because they are considered too difficult to measure accurately (e.g., course impact on student employability or increased student self-confidence).

All these simplifying decisions not only increase the feasibility of doing the study but potentially bias the results. Therefore, whenever possible it would be advisable to (a) incorporate other audiences' costs and effects in the analysis, (b) broaden the purpose of the study, and (c) include even the difficult-to-assess costs and effects. Given that such managerial uses of cost analysis will likely provide results which are more or less fallible, it is important that the evaluator and client alike seek to obtain the highest quality information possible under limited resources and explicitly be aware of the possible limits and biases of the information actually provided. With such cautions in mind, the managerial use of focused cost studies should improve the evaluation and subsequent management of educational programs.

APPENDIX A

## Cost Effectiveness of Teacher Preparation Course: Possible Program Ingredients and Cost Items

START UP COSTS

Design of program
- Materials and supplies
- Staff time

Development of materials
- Materials and supplies
- Staff time

Administration
- Administrative staff time
- Management staff time
- Evaluation staff time

Materials and Supplies (purchase or rent)
- Project-related
- Student-related
- Teacher-related
- Principal/superintendent-related

Equipment (purchase or rent)
- Project related
- Student related
- Teacher related
- School related
- Installation charges

Pre-service training
- Materials
- Staff time
- Trainee time
- Facilities

Project Facilities
- Space
- Utilities

OPERATIONAL COSTS

Administration—time
- Dean, Department Chair time
- Project Director time
- Faculty time
- Principal time
- Superintendent time
- Teacher time
- School board time
- Secretarial time

Management—time
- Project Director time
- Faculty time
- Principal time
- Teacher time
- Evaluator time
- Secretarial time

Program Teaching/Services—time
- Project Director time
- Faculty time (teaching, supervising, record keeping, advising, grading, preparing)
- Principal time (supervising)
- Teacher time (supervising, teaching, record keeping, grading)
- Student time (class time, student teaching, preparing)
- Counselor time

Materials
- Project director
- Faculty
- Principals
- Teachers
- Students
- Counselors

Equipment (replacement or maintenance)
- Project Director
- Faculty
- Principals
- Teachers
- Students
- Counselors

Facilities (operations and/or maintenance)
- Project Director
- Faculty
- Principals
- Teachers
- Students
- Counselors

Other
- Contracted services
- Media services
- Clerical support
- Graduate student support
- Transportation (esp. faculty, students)
- Student, miscellaneous (e.g., clothes, meals, supplies)
- Faculty, miscellaneous (e.g., clothes, meals, supplies)

OPERATIONAL COSTS

| | Category | | | | |
|---|---|---|---|---|---|
| Individual | Time | Materials | Equipment | Facilities | Other |
| Dean | | | | | |
| Department Chair | | | | | |
| Project Director | | | | | |
| Faculty | | | | | |
| Graduate Students | | | | | |
| Secretaries | | | | | |
| School Board | | | | | |
| Superintendent | | | | | |
| Principals | | | | | |
| Teachers | | | | | |
| Counselors | | | | | |
| Secretaries | | | | | |
| Students | | | | | |
| Parents | | | | | |
| Citizens | | | | | |

APPENDIX B

(Use dark ink or type to complete this form)

# Final Evaluation of Student Teaching

## ELEMENTARY

Student's Name _____ _____ _____ _____
(Last) (First) (Middle) Semester, Year

_____ _____ Subject (If applicable) _____
School Where Student Teaching Was Done Teaching Level—Kindergarten, Primary, Intermediate

Explanation of Ratings:
5 High degree of excellence
4 Commendable
3 Satisfactory
2 Minimally acceptable
1 Unsatisfactory

NOTE: This rating compares *this* student teacher with other student teachers and/or with a reasonable expectation of performance for one who is qualified to *enter* the teaching profession.

Please indicate your rating for each of the categories by placing *a check mark* at the appropriate place on the line. Check marks need not be made on the numbers; they may be made anywhere along the continuum.

| | | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| I. | 1. Demonstrated competence with behavioral management. | | | | | |
| | 2. Demonstrated competence in managing the principal environment, e.g., materials and space. | | | | | |
| | 3. Demonstrated competence in evaluating students. | | | | | |
| | 4. Demonstrated competence in planning. | | | | | |
| | 5. Demonstrated skillful choices of instructional methods based on children's needs and interests. | | | | | |
| | 6. Demonstrated adequate health and vitality. | | | | | |
| | 7. Demonstrated effective communication with adults. | | | | | |
| | 8. Demonstrated effective communication with children. | | | | | |
| | 9. Demonstrated ability to profit from feedback. | | | | | |
| | 10. Demonstrated skillful implementation of learning plans. | | | | | |
| II. | Overall student teaching performance. | | | | | |

COMMENTS

This evaluation is based on my observation of the student's work during student teaching and in my professional opinion fairly reports his/her performance. (Draw a line through title not applicable.)

Signed by: _____
University Supervisor or Supervising Teacher

I have read this evaluation

_____
Student's Signature

The student's signature means that he (or she) has seen the completed form; it does not imply that he/she agrees with the evaluation.

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STUDENT PERFORMANCE For each category, cite *observable behaviors* which you believe describe the student's performance.

1. Demonstrated competence with behavioral management.

2. Demonstrated competence in managing the principal environment, e.g., materials and space.

3. Demonstrated competence in evaluating students.

4. Demonstrated competence in planning.

5. Demonstrated skillful choices of instructional methods based on children's needs and interests.

6. Demonstrated adequate health and vitality.

7. Demonstrated effective communication with adults.

8. Demonstrated effective communication with children.

9. Demonstrated ability to profit from feedback.

10. Demonstrated skillful implementation of learning plans.

APPENDIX C

End of Student Teaching Evaluation Ratings*
and Grade Point Averages (GPA)
(1981 Graduates)

| Reading Concentration Students | | | Non-Reading Concentration Students | | |
|---|---|---|---|---|---|
| | Rating | GPA | | Rating | GPA |
| | 3.8 | 3.10 | | 4.8 | 3.89 |
| | 4.8 | 2.98 | | 4.6 | 2.80 |
| | 5.0 | 3.86 | | 4.2 | 2.87 |
| | 4.8 | 2.67 | | 4.2 | 3.19 |
| | 4.4 | 3.40 | | 5.0 | 3.80 |
| | 4.5 | 2.30 | | 3.5 | 3.05 |
| | 4.8 | 2.95 | | 4.0 | 2.71 |
| | 4.8 | 2.91 | | 3.2 | 2.49 |
| | 3.5 | 3.00 | | 3.0 | 2.46 |
| | 4.0 | 3.16 | | 4.8 | 3.47 |
| | 4.0 | 3.55 | | 4.0 | 2.83 |
| | 4.2 | 3.44 | | 4.2 | 2.92 |
| | 5.0 | 2.97 | | 4.5 | 3.90 |
| | 4.8 | 2.80 | | 3.8 | 2.69 |
| | 4.8 | 3.77 | | 4.5 | 3.93 |
| | 4.8 | 3.32 | | 3.8 | 2.66 |
| | 4.8 | 2.68 | | 3.8 | 2.94 |
| | 4.5 | 3.60 | | 3.2 | 2.34 |
| | 4.4 | 3.16 | | 4.2 | 3.09 |
| | 4.9 | 2.69 | | 4.0 | 2.40 |
| Sum | 90.6 | 62.31 | Sum | 81.3 | 60.43 |
| Average | 4.530 | 3.115 | Average | 4.065 | 3.021 |

*On a five-point scale, see Appendix B.