A study to determine the feasibility of developing a training program for educational systems/cost analysts
by Clifford Earl Winkler

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

Abstract:
This study has its roots in the problems our educational institutions are having in maintaining viable operations. Two methods of solving economic problems are: (1) to increase income and (2) to reduce expenditures to the point where income equals expenditures.

The use of systems techniques can assist in making available resources go much further by assisting educational administrators in finding the true needs of the organization.

Development of skill in educational systems requires training= Training systems, however, cannot be created until a background of theory and practice has been created= A literature study was done to determine if an adequate background of theory and practice existed for the proposed systems/costing function. The literature search indicated educational systems/costing procedures, implications,. and practices in each of these areas: (1) establishing educational goals and objectives; (2) effects in varying educational organization types; (3) use of educational technology; (4) use in school business practices; and (5) use in educational evaluation.

A survey was done to ascertain where in the United States training in educational systems and costing could be received. Three institutions were found with a total productive capacity of 60 personnel. A survey of possible users pf the services of educational systems/ costing personnel was done and a projected demand of 4,247 positions found, thus indicating net need for the expansion of training facilities for such personnel.

Thirty-eight major institutions indicated a desire to cooperate in the development of a training program for this type of personnel, and a list of 437 experts or potential program developers was found.

On the basis of these available resources, the background of theory and practice, and the demonstrated need, the conclusion was drawn that it is feasible to develop a training program for educational systems/cosing personnel.

A STUDY TO DETERMINE THE FEASIBILITY OF DEVELOPING A TRAINING PROGRAM FOR EDUCATIONAL SYSTEMS/COST ANALYSTS

by

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C.E.W

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ABSTRACT

This study has its roots in the problems our educational institutions are having in maintaining viable operations. Two methods of solving economic problems are: (1) to increase income and (2) to reduce expenditures to the point where income equals expenditures. The use of systems techniques can assist in making available resources go much further by assisting educational administrators in finding the true needs of the organization.

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Chapter 1

STATEMENT OF THE PROBLEM

INTRODUCTION

Forward

The investigator intends that this work may facilitate the growth of American Educational Systems in accordance with the principles of John Dewey. He too was interested in the efficient use of educational resources. To wit,

> There are two ways of approaching the problem of elimination of waste in the educative processes of the schools. One is administrative. This takes the existing system as a going concern, and inquires into the breaks and overlappings that make for malajustment and inefficient expenditure of time and energy on both the part of pupil and teacher. Useless, and therefore harmful, mental motions are harmful and not merely useless because they set up bad habits. The other may be called PERSONAL, PSYCHOLOGICAL or MORAL (italics added). By these adjectives is meant that the method starts from the side of personal growth of individual needs and capabilities and asks what school organization is best calculated to secure continuity and efficiency of development.
>
> . . .John Dewey, 1940, Education Today, page 203. . .

Background

The American educational system is now under great stress because of costs inherent to its operation. Taxpayers are turning down both operational levies and bond issues (Croft,1970). Teachers have organized into unions and are now demanding "their rights". This force and the usual upward price pressures of inflation are compounding the problems of school systems in maintaining viable operations (Furno, 1971:89).

American industry was faced with a similar situation in the early 1900's: inflation, rising costs, and no great technological breakthroughs to improve productivity. One response which helped to solve the industry dilemma during this period was the introduction of the efficiency expert (Haber,1964).

The efficiency expert of this period was usually an independent contractor who would do surveys of a company, a department, a section or a job and make recommendations as to the improvement of production or reduction of costs. Out of the experience of this period developed the professions of Industrial Engineering and Cost Accounting.

The premise of this study is that the time is now right for the development of an <u>educational equivalent</u> of the industrial engineer and cost accountant. The conditions are approximately the same: (1) rising costs, (2) technological breakthroughs on the horizon but not here, (3) a body of experience with costing which is just beginning

to be codified. The tools to be used are approximately the same: just as American industry in the 1900's had to be taught how to organize the efforts of people into continuous production systems, the educational administrators of the 1980's must be taught how to efficiently apply technology and the efforts of teachers into the intrinsically continuous development of individual students.

FORMAL STATEMENT OF THE PROBLEM

Problem Statement

The problem of this study is to establish the feasibility of creating a training program for educational systems/cost analysts.

The term "Educational Systems/Cost Analyst" is being used to stand for the concept of the educational equivalent of the industrial engineer or cost accountant. This is a coined term for use in this study. A by-product of the study will be a clearer definition of the role that such professionals might play. The terms educational systems analyst and educational cost analyst will be used interchangeably with the term educational systems/cost analyst.

The term "Feasibility Study" is the process of gathering information about a proposed activity; collating that information and providing the data for deciding whether to undertake the activity.

The term "Training Program" was used to describe the process of teaching/learning wherein specific skills and concepts are taught to

pre-defined levels of proficiency.

The Nature of a Feasibility Study

According to Webster's Third New International Dictionary (1963:305), the word "feasible" has the following meanings:

> ADJ. 1: capable of being done or carried out (a_____plan)
> 2: capable of being used or dealt with successfully, suitable
> 3: reasonable, likely syn. see possible.

A feasibility study would, therefore, evaluate a plan of action to determine the extent to which it was reasonable, likely to succeed, suitable or capable of being carried out with the expenditure of a reasonable number or amount of resources.

The Northwest Region Educational Laboratory (1970:3) used four stages of educational product development and dissemination. They were: 1. Search 2. Feasibility 3. Product Development and 4. Product Dissemination. The four stages were divided into 37 steps. The steps associated with the Feasibility Stage were:

> B. Feasibility Stage
>
> 5. Knowledge Search. Available literature and knowledge relating to the proposed product(s) and the potential users should be reviewed and pertinent data and information accumulated.
>
> 6. Feasibility Analysis. Assessing the practicability of the proposed product(s) in terms of the nature and size of the market; sales and distribution methods; production requirements, management, personnel and organization requirements; and economics.
>
> 7. Copyright Patent Search. Assurance that the products or ideas are free from prior rights through copyrights, patents and/or contracts.

8. Feasibility Screening. Review of data and information from items 5, 6, and 7 as indicated in the Decision Matrix.

The Plan to be Evaluated for Feasibility

The word "feasible" is an adjective and as such it refers to something. In this instance that something is the following plan:

1. "Experts" in educational systems will be located.
2. The body of knowledge relating to educational systems functions will be collated by this group of experts.
3. The experts will be brought together to create a training program for educational systems/cost analysts.
4. The training program will be further validated and developed in a consortium of universities that teach teachers.
5. The graduates of such programs will be placed in educational institutions.

Components of the Plan: A Background of Theory and Knowledge

No profession can be developed unless a body of knowledge has already been created and organized to the point where its practitioners have marketable skills or knowledge. The contention of this study is that such a body of knowledge exists in disbursed form. Educational systems analysts will need the same tools that business systems analysts need plus techniques that are unique to the educational situation. They will need skills in educational and psychological

measurement that are not required of their business counterparts. They will need an understanding of human growth and development that is not required of their business counterparts. Just as the industrial engineer knows industrial production, the educational systems analyst will be required to know techniques of teaching and curriculum implementation. Like the industrial engineer whose production plans can be completely destroyed by the group norms of the workers, the educational systems analyst must be alert to and understand the dynamics of human groups that are reflections of the homes and communities from which students come. In addition, the proposed analyst must be cognizant of the processes of change, political action, and public relations, as well as the more prozaic aspects of management theory. Each of the fields mentioned have been and are now being researched and organized. The requisite knowledge exists even if it is not yet organized into a training program.

Current Programs for the Training of Educational Systems/Cost Analysts

One of the reasons for the copy/patent search step in the Northwest Region Educational Laboratory's 37 steps of product development of new educational techniques is to insure that effort is not wasted on topics that have been completely covered elsewhere. The wheel has been invented. There is no longer any point in attempting to do the job again. The same point applies to the development of a

program to train educational systems analysts. If the perfect system exists, there is no point in developing another. The feasibility study must, therefore, evaluate any programs discovered from the standpoint of national adequacy. The discovery of programs which can be expanded to meet national need will indicate that the development of another program is NOT FEASIBLE.

Criteria for Feasibility

In addition to the question of currently available training programs, there are four questions that must be answered before any developmental program may be deemed feasible:

1. Is there a demand for the product?
2. Is the demand currently being met?
3. Can the product be produced and distributed at reasonable cost?
4. Are there any legal or cultural barriers to its development?

These questions will be discussed in the summary of this study.

PRACTICALITY OF DOING A FEASIBILITY STUDY

The intent of the next few pages will be to provide a synopsis of the current state of development in education systems and costing analysis. The intent of this synopsis will be to show that:

1. There is a growing interest in educational systems and costing technology.

2. There exists a developing body of knowledge in this field.

3. The penetration of systems and costing technology into existing professional training programs is currently very slight--but that it does exist to some extent.

The conclusion will be that it is feasible to do a feasibility study because of the interest growth curve and the developing state of knowledge in this field of endeavor.

Growth of Interest in Applying Systems Technology to Educational Problems

Since 1953 the interest in Educational Systems Analysis has grown, as indicated by citations in the Education Index, from zero to 82 entries as indicated by Figure 1 (Page 9).

Moreover, the entries from 1957 to 1963 were essentially industrial engineering citations on how to teach systems concepts. Beginning with 1964, however, the application of systems concepts to educational problems really began with Ostenso's (1963) "Development of a Generalized Cafeteria Simulator". 1964-1965 followed with Winthrop's "Contemporary Intellectual Ferment and the Curriculum of the Future" (1965), Pace's "Data Processing: Systems Analysis" (1964), Bishop's "Supervision and Curriculum Director at Work: System Approach to Information Flow and Decision Making" (1965), Becker's "System Analysis: A Prelude to Library Data Processing" (1965), and Vandermeer's "Systems Analysis and Media: A Perspective"(1964).

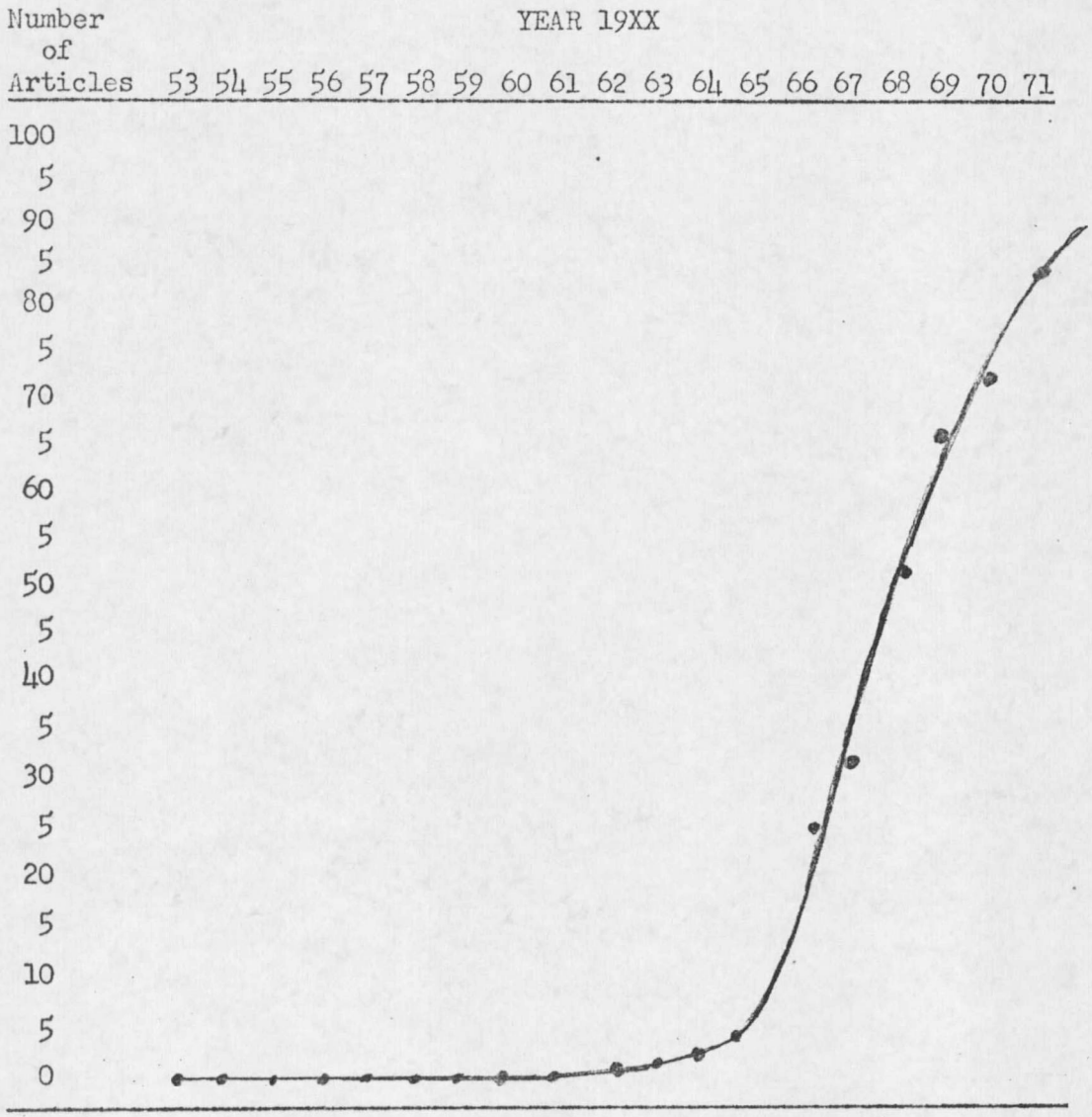

Figure 1. Number of Articles by Year in Education Index Categorized as Systems Analysis or PPBS