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ABSTRACT

This paper is one of four related publications that are intended to identify and develop a set of indicators for monitoring educational activities in Florida from the state level. The central focus of this paper is on the specification of cost-finding concepts plus identification of a few cost indicators. Various sections of the paper discuss the use of cost indicators for interstate educational comparisons, examine the use of cost indicators for comparing education with other state governmental services in Florida, consider the main issues and concerns in developing and using a costing system for education, offer suggestions for classifying and costing Florida's educational goals, and discuss some fundamental concern and problems related to a uniform costing system and to some of the financial management problems facing educational administrators. The appendix contains examples of suggested data presentation formats and data requirements for use in a statewide educational costing system. (JG)

INDICATORS AND COSTING OF FLORIDA'S EDUCATION GOALS

Dr. John S. Waggaman*

This paper was prepared (at the invitation of the Florida Commissioner of Education) as one of four efforts at identifying indicators for public education in Florida. The four kinds of indicators are to be combined at the end of this phase (II) in the development of the Education Element of the State Comprehensive Plan. This particular paper on indicators of cost and the costing of Florida's education goals should be read in conjunction with the paper of Dr. Kern Alexander; he wrote on the effect of education on the wealth of the State (and for the individual) and the ability of the State to support education. The other writers and their topics are Dr. Arthur Lewis on student achievement and the level of competence of the Florida citizenry, and Dr. Charles Grigg on target populations for education, services provided Floridians and citizen satisfaction**

The purpose of identifying and developing a set of indicators is to monitor educational activities from the state level. Educational indicators will help identify policy concerns, point to changes in the

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** For additional information about this project, contact Dr. Fred Daniel, Florida Department of Education, Tallahassee.

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system, suggest areas where in-depth investigation is warranted and enable more specific projections to be attempted about the future. Development of educational indicators leads to identification of what is both common and unique about educational activities; however, their development does lean heavily on social and economic indicators already in use (e.g., for the study of the quality of life). This overlap in conceptualization points to the inter-relatedness of education with most other functions of society.

The initial phase (I) in the development of the Education Element terminated with a March, 1975 statement titled "Education Policy for the State of Florida." One of its sections contained a list of Goals of Education, seven in all, which are used in this paper. The goals were developed after an extensive series of meetings involving education experts, interested citizens and government officials. The goals and the statement of education policy were subsequently given official status through the top channels of Florida state government. A similar series of events are planned for the development and completion of phase II, meaning that the important issues and indicators from this and the other three papers will be eventually distilled into a policy document. (See Epilogue to this paper.)

The central focus of this paper is on the specification of cost finding concepts plus identification of a few cost indicators. There appears to be strong feelings about the need for development of a uniform costing system across the entire spectrum of education and especially across the entire Kindergarten-University levels of public education in

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*Because this is a State of Florida public education project, only passing attention will be given to private education. It is assumed that the same set of concepts would apply to both public and private education.

Florida. Concepts for development of such a system will be examined below; however, it should be apparent that this paper represents only a beginning effort for such a vast and complex task. The testing of the concepts, their feasibility as to data collection and their use in policy analysis are tasks for the future.

The reader should be aware that Florida public education is comprised of four sub-systems: K-12, adult-vocational-technical, community colleges and state universities. All systems function as part of the Department of Education, although the state universities have a separate Board of Regents. Even though the systems of public education among the several states in the U.S. may be organized and financed differently, many interstate comparisons are made among them. Because these comparisons are often used as indicators of a state's commitment to education and its need for federal aid, a few comments about such comparisons are presented in the next section of the paper. Following the interstate comparison section appears a brief discussion on Florida intergovernmental cost comparisons for and with education. This subject is of particular interest to state officials concerned with funding all government programs. The main issues and concepts about the costing of education is presented prior to the suggestions for classifying and costing Florida's educational goals. Brief mention is made at the end of the paper about some of the fundamental concerns with a uniform costing system and about some of the important financial management problems facing education administrators.

Interstate Comparisons. Given the widespread concern about the rising cost of government, and education in particular, it is important to compare Florida's financing efforts with those of other state governments. Using

a standard source, such as the Statistical Abstract of the United States (1974 edition), one finds that Florida ranks 21st in current average expenditures per pupil in average daily attendance for 1974. This position was several ranks better than 28th which Florida held for per capita personal income in 1973*. From this data (indicator) it appears that Florida is (or has) made a serious effort in the financial support of education. Whether the effort is (or was) sufficient to meet the educational needs of the Florida population is another question. Futhermore, because of the lack of any normative data which might provide a yardstick for comparing the actual per capita expenditures, it is probably going to be necessary to continue using the rank order data.

It seems important to use per capita education expenditures for interstate comparisons so that some idea of financial effort can be obtained about each state relative to Florida. If it was desired to relate per capita education expenditures to any of the achievement levels (e.g., cost per high school graduate per 1,000 population) as an attempt to cost "output", then such data should be compiled for all states. However, the use of population data from retirement states such as Florida can be a hazardous undertaking because of the various methods for counting the "temporary" resident who is a retiree. Similarly, the data on personal income needs to be examined to determine the extent to which transfer payments (retirement income) are excluded. Clarifications of this kind are needed to insure that Florida is correctly ranked and compared.

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*Florida's neighbors ranked much lower overall: Alabama 47 and 48, respectively; Georgia 37 and 36.

Inter-departmental comparisons for Florida State Government. With education taking over 60 percent of the Florida general state appropriation, it is of interest to compare the population served by education with those being served by other government functions. Comparisons of this type may be made on a per capita basis for three different populations:

a. total population
b. target population
c. client population

For each of these three groups the per capita is determined by dividing the functional state appropriation (e.g., education) by each of the three population groups. From such per capita data it is possible to compare the state financial contributions for such services as education, youth services, corrections, welfare and so on.

If per capita data are tabulated for each year, a time series analysis can be performed which will detect whether there has in fact been an increase in appropriations. For example, total appropriations may have increased but the appropriation per student (c. above) actually decreased, due to an unexpected increase in enrollment. Such fact is not obvious by examining only the education appropriation from year to year. Incidentally, this kind of analysis would also reveal the appropriation per student which was greater than intended when enrollment declined unexpectedly.

In this time of inflation it is extremely important to adjust all appropriations (i.e., deflate them) to constant dollars so that the real purchasing power of the funds is clearly shown. It is possible to have an increase in appropriations, but have the increase too small to recover lost purchasing power, leading to an actual reduction of input resources. It may be useful for Florida education officials (with support from the Department of Administration) to develop a cost index for education

analogous to the consumer price index. Such an index for higher education is proposed by D. Kent-Halstead, Statewide Planning for Higher Education. A cost of education index for all of education would provide a ready means for assessing the impact of rising prices for oil, gasoline and other volatile iters.

Another kind of comparison among Florida government departments should focus on cost of all education programs. First, it would be necessary to determine cost of education as it relates to Florida's goals, which will be discussed in detail below. Second, the education and training programs throughout Florida state government would have to be identified. It would seem appropriate to include only such (tertiary) education activities and programs which clearly relate to one of the seven Florida education goals. Programs or activities which train individuals to perform a job, or parts of a job, peculiarly related to a function of state government would be excluded. Third, the costs for the goal-related education programs would then be determined using the identical costing concepts used for determining regular education costs.*

To be meaningful in the comparison with regular education costs, these tertiary goal-related education costs must follow the same set of cost-finding principles. Because there is almost a complete absence of state policy for tertiary education, it would not be suprising to find great variations in costs among their programs (if it is possible to compile such data). In any event, the purpose of these regular and tertiary program costs would be to assess the prospect for substitutability of resources,

*Should it later become appropriate to compare the costs of goal-related education in non-state government organizations, then the same procedures should be followed. For example, it would be informative to compare the costs of basic skills (goal #1) taught in churches, YMCA's, county and municipal governments, big and small businesses, hospitals, military units and so on, with those in the Kindergarten-University systems.

e.g., it might be more effecient (and effective?) to use local school teachers at prisons rather than the prisons fund a special education staff. Note that this kind of policy analysis rests on the assumption that regular school teachers would want to work in prisons and would require little special training for such work. These and other characteristics define the questionable assumption of substitutability which itself must be subjected to policy analysis. This particular example should serve to indicate that appropriate cost data may begin a policy analysis, but, in education at least, should not force a decision about use of resources without extensive investigation. Finally, it should be noted that a comparison of programs between two difference forms of organization* (i.e., regular education versus tertiary education) can be valid only if the inputs, processes and outcomes are similar (or identical), otherwise one would be comparing apples, oranges, and bowling balls.

Cost comparisons among various government departments and regular education units does appear to be a necessary first step before examining common and unique course objectives, teaching methods, instructional media and methods, student characteristics, learning outcomes (knowledge added) and other such variables which influence or determine costs (unless, of course, one wants to focus first on final outcomes which relate to competencies and other such performances based evaluation systems). In other words, it seems practical to use cost data as indicators of program uniqueness, i.e., costs falling in the plus or minus third standard deviation almost assuredly indicate some special

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*The writer has been told of a preliminary finding that the student/teacher ratio for education programs in youth services is quite large, a result which gives low unit costs but raises questions about the quality of education for the many special students involved,

set of resources or program characteristics are involved. Third, or even second, standard deviation costs can be used as decision data for determining when a full program review may be in order. In other words cost data are surrogates for program differences; they should not be viewed as real things existing apart from the programs they represent. In fact, cost data are the artifacts or consequences of hundreds of program decisions and have no meaning unto themselves except in relation to some standard of judgment which in the extreme may be arbitrary and capricious, as well as unrelated to desirable educational outcomes (should they be known and specified).

To verify the relationship between program resource characteristics and costs it is only necessary to know that instructional costs can be explained with two kinds of data*: salary level and student-faculty ratio**. Thus, costs will be high where salary levels are high and the student-faculty ratio is low; this would follow, for example when comparing school districts with the state median or departmental costs with an average college cost. Education, as a labor intensive enterprise, has program costs which are composed mainly of salary costs. There have been many attempts to use education cost data as simple surrogate measures of quality, which can, as indicated above, lead to misinterpretations, either good or bad. However, problems with cost analysis do not negate

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* For indicators one might use: for salary level-median salary by common rank, pay grade or years of seniority; for student-faculty ratio-full time equivalents, student's and faculty, with FTE conventionally defined and based on three and four quarter averages.

**This is not to ignore the very high cost of vocational, technical and scientific equipment and supplies, which must be included in any realistic costing procedure; however, the two variables mentioned are common across all of education, K-University.

its basic value; support of cost analysis represents a basic commitment to the rational use and allocation of resources. Cost analysis involves a commitment which seems inescapable in a world of finite (and shrinking) educational resources and infinite need/demand for them. This commitment will be complete when we resort to the analysis of opportunity costs (using this and other such economic concepts) before deciding on the most socially efficient resource allocation patterns.

Costing Concepts and Issues. A concern with costs as inputs in the educational system of Florida is a first step toward understanding the relationship between resource costs and educational output. Although it is important to identify output costs, it is first necessary to clarify input and process costs and specify a set of costing procedures. Even then, much remains to be done: data must be found or created, classified, compiled and tabulated, analyzed and then evaluated. In other words, it is first necessary to specify a set of cost finding principles, perform historical cost studies, evaluate these and then consider their future use, i.e., forecast future costs.

The discussion here (and elsewhere) about cost finding principles assumes a particular and rather conventional set of meanings for the concept of cost. In a general sense, cost data reveal patterns of resource usage in organizations. (In the jargon of the cost expert, one can speak/write about the resource absorption patterns - costs - and their variations over time.) The effects of law, custom and regularized accounting procedures largely determine how cost data are identified. Using economic concepts one may ignore most of the previously mentioned constraints, but the results may prove little better if every analyst may change the

economic assumptions, since one would not be operating under the ordinary constraints. Although it is possible that regular procedures for cost effectiveness analysis might be specified, at present it is a highly artful process with little more to guide it than the heuristics of previous studies, few of which have been broad enough in scope to warrant usage on a state education system in the United States.

Nonetheless, the cost effectiveness and human capital investment studies deserve careful attention. They can provide indicators of the economic value of education and even if produced in many non-standard forms, can suggest where policy makers might be most able to earn society (and the individual, hopefully) a high return on public education expenditures*. In some fields, according to a variety of professional and populist sources, a young person could earn more life-time income by investing his educational expenditures and reaping the return. The big cost factor to the young person is not necessarily the tuition and fees paid to a college, but the income lost while not working. Even though such an assumption may appear ludicrous because we currently have 10 million unemployed and another 20 million under-employed, this sacrifice is very important to a person who wants to take an educational leave from a permanent job, e.g., to finish work for a bachelor's degree or for retraining.

Should we ever learn enough about institutional costs, manpower forecasting and how to project the political philosophy in the White House which will be shaping the economy in 20-40 years, we may want to consider a wider use of the economic concepts of costs for determining resource

*Incidentally, one should be aware that legislators guard jealously their sovereign prerogative to make and act on assumptions. The cost analyst using the artful concepts of economic analyses of costs may find him/herself having to make assumptions which the average legislator may feel is a usurpation of his/her authority.

allocation patterns, e.g. it may be important to consider rate of return studies on education investment as indicators of differences in the status reward system in the United States. (The basic policy question whether any particular vocation should be paid more than any other seems mostly settled by the wealth of the industry and the social stratification system of the country.)

Another policy issue, somewhat less in its global dimensions, with strong financial overtones, centers on the programs in industry and higher education for re-training of persons in the basic skills (goal #1). This clearly is an output issue for the public school system and an input matter for the other two systems. The business man or corporate official who must organize a retraining program in the basic skills may complain that he is paying twice for a trained labor pool: first, through property taxes, then through reduced profits from having to fund the program.

This issue has come before the Georgia Education Board. The Board is now questioning the cost of colleges providing remedial courses for high school graduates. One board member wondered out loud about the possibility of deducting the college cost of remedial courses from state appropriations allocated to the high schools. The Board also considered the awarding of attendance certificates to students who, apparently, sat through 12 years of public education, having received many social promotions. One wonders if unit costs (per student costs) might be relatively low because of students earning attendance certificates. Finally, one wonders if more consideration should not be given to the development of negative indicators, e.g., the percent of students who are what the Carnegie Commission on Higher Education called the reluctant attenders - those students in college for no good reason other than that it is the thing to do.

Another important output issue involving costing problems concerns the use of achievement levels. It is absolutely necessary that achievement norms be specified and made known to every school. Because such norms are used as averages there will always be 50 percent above and below a standard or norm. If the age-grade achievement levels are used, then results may be skewed high or low depending on the promotion policy of the school and the general ability level of the students (in relation to the demographic and social characteristics of the population using the school).

Using the costing concepts below will enable the cost per grade level to be determined. However, the costing of achievement focuses on the gains from one year to the next. The assumption is that skill levels in evidence at the end of the year resulted from the education activities during the year; however, that assumption can be verified only if the student was deficient in the desired skills at the beginning of the school year (semester, quarter, or some time period). Thus, it is necessary to test the student at the beginning of the school year, note the increase in skills at the end of the year, then cost the increments or decrements (or zero) of change. Most of this kind of testing requires standardized tests and if applied to the development of basic skills, then only one basic set of tests would need to be made available. There are other general achievement tests such as the Florida 12th grade test and the nationally normed tests for college admission (such as the SAT and ACT versions). However, the measurement of achievement for specific skills would involve the use of particular tests, at the varying grade levels, and be necessary for the costing of achievement by grade level.

In other words, a cost benefit analysis would need to be conducted on this matter to determine whether the benefits from determining the cost of achievement changes by grade level would be worth the cost of such activity.

Finally, it is important to note that much has been done in Florida education these last few years to define and identify institutional and school costs. These efforts may provide much data from which cost indicators can be developed; a wide circulation of the documents which describe the various costing procedures should facilitate the development of a better understanding about the costs of Florida education.

Almost two years of work by the staff of the Division of Community Colleges and the State University System has resulted in costing efforts that will culminate in new funding formulas, perhaps prior to the 1976 session of the Florida Legislature, which mandated a completion of this effort. A new Florida Post-secondary Education Commission has as one of its tasks a determination of education costs by March 1976. There should be no mistaking the fact that the Legislature is ready to change funding arrangements for education even though the existing formulas have been in existence for only a few years. Here then is a use of costing systems, at present without output data, which raises many more questions than can be asked and answered in this short paper.

Another costing development in Florida education is that of the K-12 system. Its data are now being published with special tables of educational expenditures shown (classified) as direct or indirect costs-see the 1973-1974 annual report of the Commissioner of Education. All of these costing efforts will enable publication of new kinds of data in a variety of new formats, Kindergarten through University.

The result for the post-high school institutions will be a comparable set of costs per full-time equivalent student for each discipline/department by level of education. For example, the cost of history departments at the lower level (freshman and sophmore combined) per FTE student (one who takes 15 student credit hours of courses) will become available for all community colleges and universities which have such a level and program. As the data collection and processing techniques are perfected, the FTE student cost for each student academic program (i.e., student major for a degree or certificate) will also become available. The student academic program costs indicate the cost of all courses taken by a student; thus, a history major would include the costs not only of history courses, but the costs from such other courses as English, political science, biology and so on. The final cost data will include direct instructional costs and indirect support costs, including the cost for the year of facilities and equipment.

The new compilation of K-12 direct and indirect costs are proving very informative. Although we may recognize that education is a labor intensive activity, it is important to note that a large portion of indirect costs also result from salary expenditures. What has become apparent* is that classroom salary costs may be in some districts less than 50 percent of total costs. As a result of this cost classification system, it is now possible to begin an analysis of the costs and services of the indirect segment to determine their contribution to the primary purposes of the schools.

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*According to Mr. Julian Roberts, district planning, Florida Department of Education.

Educational Goals and Costs. One of the main purposes of this paper is to identify concepts for development of costs for Florida's seven educational goals. The goals are listed below, followed by a classification of educational levels according to the goals.

GOAL 1. Basic Skills. All Floridians must have the opportunity to master the basic skills for communication and computation (listening, speaking, reading, writing and arithmetic). Basic skills are fundamental to success.

GOAL 2. General Education. All Floridians shall have the opportunity to acquire the general education fundamental to career and personal development and necessary for participation in a democratic society. This includes skills, attitudes and knowledge for general problem-solving and survival, human relations and citizenship, moral and ethical conduct, mental and physical health, aesthetic, scientific and cultural appreciation, and environmental and economic understanding.

GOAL 3. Vocational Competencies. All Floridians shall have the opportunity to master vocational competencies necessary for entry level employment by the time they leave full time education. For persons who continue formal education through advanced or professional programs, vocation competencies will be in areas of professional employment. Vocational education shall be continuously reviewed to assure that Florida's need for workers are met and that individuals can secure further training needed for career advancement.

GOAL 4. Professional Competencies. Floridians with demonstrated interest, academic background and aptitude shall have the opportunity to acquire professional competencies necessary for employment in a profession and to update their competencies periodically. Programs of professional studies shall be organized to assure that Florida's and society's needs for professionals are met.

GOAL 5. Advanced Knowledge and Skills. Floridians with demonstrated interest, academic background and aptitude shall have the opportunity to acquire advanced knowledge and skills in the academic disciplines or other specialized fields of study and to update their knowledge and skills periodically. Programs of advanced academic training shall be organized to meet Florida's and society's needs for highly trained specialists.

GOAL 6. Research and Development. The public education network shall seek solutions to local, regional, state and national problems through organized research and development. Research and development shall be organized to solve pressing problems and to expand the store of knowledge in all areas of human endeavor, including education.

GOAL 7. Recreation and Leisure Skills. Floridians shall have the opportunity to pursue recreation and leisure skills which satisfy the recreational and cultural needs of individuals in areas outside of general education.

The above set of goals defines the scope of Florida's commitment to public education. The order of presentation indicates the priority among the goals. However, the goals are mutually supportive and dependent upon each other. [Emphasis added.]

A preliminary examination of these goals indicates that most education expenditures can be sorted according to broad institutional categories, such as

GOAL 1.
- a. Kindergarten through Grade 3 (K-3)
- b. Adult basic education

GOAL 2.
- a. Grades 4-7
- b. Grades 8-12 (non-vocational)
- c. Adult high school
- d. Community-Junior college (transfer)
- e. University (lower level undergraduate)
- f. University (upper level undergraduate, e.g., humanities and pre-professional)

GOAL 3.
- a. Grades 8-12
- b. Vocational-technical Center
- c. Community-Junior College (Voc-Tech)
- d. University (lower level undergraduate, e.g., nursing)
- e. University (upper-level undergraduate, e.g., business, education)

GOAL 4.
- a. Masters degree programs (e.g., architecture, business, music, nursing, pharmacy)
- b. Professional degree programs (e.g., medicine, law, veterinary medicine)

GOAL 5.
- a. Masters degree programs (pre-doctoral)
- b. Ph.D. programs
- c. Specialized doctoral programs (DPA, EdD)

GOAL 6. a. K-12 and Adult Post-secondary
b. Community-Junior College
c. University*

GOAL 7. a. K-12 and Adult Post-secondary
b. Community-Junior College
c. University

The most desirable costing system conceivable at this time-building from current experience-would be a combination of the K-12 and two post-secondary systems.** Thus, the basic cost unit would be the ADA or FTE student. The instructional (direct) and support plus auxiliary (indirect) costs would be identifiable. The costs would be identified down to the school or department according to the educational level (K-3, 13-14, etc.). Finally, the costs would be aggregated according to the Goal categories. An example of some of the data presentation formats may be found in Appendix A.

A cost system of this kind rests on several presuppositions. First is the basic assumption that costs must relate specifically to the Goals. This idea rests on the twin premises that little planning for the future or evaluation of past activities is possible at the State level unless the costs of goal seeking activities are known. In other words, the focus is on cost of inputs and processes, not (at this time) outputs, outcomes or objectives (unless, of course, the Goals are accepted as a final product of the Florida education system, in which case they have to be stated as performance objectives).

* It should be noted that one of the three primary functions of a University, public service, is not listed as a Florida educational goal. If this function is to be interpreted as being included, and it would be incredible if not, it would probably fit best in Goal #6.

**However, not all cost details would be generated for use at all levels of policy analysis.

Second, it is assumed that the focus should be on the entire Florida educational system (all levels) and not just some selected part of a sub-system, e.g., urban schools. Third, it is not necessary to be concerned with the broader form of economic cost analysis, i.e., cost benefit or cost effectiveness analysis.

Fourth, it is assumed that this kind of costing system will itself be cost effective, especially as to the cost of sorting out courses and degree programs to meet the classification criteria defined for the goals. This program classification system will have to be elaborated and documented so that a publication is produced like the Program Classification Structure of the National Center for Higher Education Management Systems (Boulder, Colorado).

Fifth, it is assumed at this time that all costs will be related somehow to the ADA or FTE student. This assumption is the one most likely to cause problems of interpretation, unless, for example, the universitites are willing to accept instruction as a primary function and research and public service as secondary (except when using Goal #6). The problem for the universities is that research may relate only to graduate students (if any students) and public service to external publics; thus, the issue is about the designation of an acceptable costing unit.

If we look again at the Florida goals we see that they do not include direct reference to the activities of transporting students (K-12), housing them (post-secondary) or providing them with health and counseling services. Also, there is no mention of the myriad functions of teachers and faculty such as curriculum development, student evaluation, governance, and so on; these are all professional educational activities which consume resources. It apparently can be assumed that most of these

student and faculty activities comprise supporting services and indirect costs. However, it should be recognized that the demand is building to cost separately each of these support services and then evaluate the use of alternatives, e.g., consider local government recreation departments taking over athletic programs. From this kind of (cost effectiveness) analysis it is quite possible that indirect costs may be sub-divided into two categories: support and auxiliary. (Incidentally, school and college accreditation associations may have requirements which limit the ability of Florida's educational officials to significantly alter many expenditure patterns, but this should not limit the kind of cost classification system used.)

By now it should be apparent that some uniform conventions would be necessary for the classification of expenditures at all levels of education; these should include a set of rules for allocating the indirect costs to obtain full and/or total costs. Similar decisions would be necessary for the accounting of capitol expenditures, depreciation or replacement costs. Not only is such information needed for a good costing system, but it is now the case that state officials do not want to make decisions about state aid to education without knowing total costs. The need for a uniform classification across all segments and levels of Florida education (K-University) is necessary in this instance if, and only if, all education expenditures must be classified according to the goals listed above. Again the suggestion is offered that wise planning by the educational planners would include an estimate of the probability of success in this endeavor and also include an estimate of the cost and time which development of such a system would require - another cost effectiveness study, if you will.

Although state officials are interested in total costs they also desire information about the sources of funds, so that the state share is identified. Local support, student tuition and fee income, federal assistance, endowment income and other appropriate categories of revenue need to be identified.

The institutional level of the cost-of-goals data needs to be considered. Given the changing enrollment patterns resulting from decreased births, migration and economic conditions, it is more important than ever that costs be identified down to the school house or attendance area within the school district*. Similarly, it would seem appropriate to identify costs by campus and center for vocational-technical and all post-secondary programs. Planning for the expansion or closing of schools and campuses will benefit from this kind of data. Note that it would be appropriate to gather the same kind of data from private schools and campuses if complete cost comparisons for all of education in Florida is desired; however, this segment of education is not included here although few changes in the basic concepts would be needed to include them.

Clearly there is a need to identify costs by level, i.e., K-3, 4-7, 8-12, lower undergraduate, upper undergraduate, masters, doctoral and any other special levels. Within each level, each major program should also have its costs identified. The particular need here seems to be for the K-12 schools to identify their department and program costs, again down to the school level. At present the K-12 system uses the 26 funding categories as programs.

*Current costing data show an extensive variation between and among school centers; because little difference in outputs desired has been expressed among the centers, no ready explanation is available for the cost differences. However, one would be remiss not to overlook the expectations of school parents and patrons.

Once costs are obtained by program across all of education, they can then be converted to an ADA or FTE student basis. Data would be then available which should allow estimates to be made about the consequences (outputs) of selecting one allocation pattern over another. Thus, if, for example, greater emphasis needs to be placed on vocational programs, the consequences of shifting funds from other programs, levels, schools or campuses should be readily identifiable. Similarly, an increase in education funds specifically addressed to Florida Goal #1 can later be related to changes (if any) in output measures.

Administrative Problems and Prospects. With this kind of cost data, district and institutional administrators will have a very sophisticated set of management tools. A variety of performance measures, such as the productivity indices developed by the Division of Community Colleges (e.g., student-faculty ratios by program, teaching load by credit hours, etc.) may be used as indicators to monitor costs, their changes and resource utilization patterns. Cost data which indicate input and activity patterns of resource usage are especially valuable as measures of capacity, growth and change; they do not have any intrinsic value as measures of educational outcomes. To protect against the misuse of input cost data as surrogates for outcomes it would be highly desirable to have a set of middle level performance objectives. These would be measurable outcomes and developed in addition to the Florida education goals so that the effectiveness of education programs could be assessed and costed thereafter. This would seem to be the ideal system by which state officials could rationally allocate resources to education. However, the widespread variance of costs and outputs between schools would seem to indicate the

need for much local input in the design of this ideal system.

One of the problems with installation of a uniform educational costing system is that it provides a means for greater centralization of control and decision-making throughout the Florida educational system. A costing system of the kind outlined here would make visible the extreme variation in cost which may be found throughout the system. To obtain the uniform data needed for the system an elaborate management information system would be necessary to process and make available the right data at the right time. These developments seem to push (or have the potential of pushing) decision making to the state level which may reduce the incentive of the local administrator(s) to more effectively manage the available resources*.

This concern can be faced by deciding about the different amounts and aggregations of data which would be necessary for effective planning. For example**, state planners for all levels of education might need only unit costs for each goal or added sub-goal, i.e., performance objective. State University System planners might need unit costs by level and aggregate discipline categories. Campus or district planners would probably need information by department whereas, administrators at these levels usually require specific data about individuals (students, staff and faculty). Defining the planning responsibility (especially under the new systems of delegated management) and the cost data necessary (and outcome data) would seem an appropriate method for protecting the decision domain of each set of education officials. Until such decisions are made it would seem to be the responsibility of state-level officials to resist the

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* Increased centralization leads inevitably, according to many faculty spokesmen, to a diminution of academic freedom.

**As suggested by Dr. Kent Caruthers, State University System.

trend to centralization. However, it behooves district and institutional leaders to accept the responsibility for building and using adequate costing and management systems.

Finally, as an ending note, it should be made clear that cost analysis is necessary because we have no market mechanism or system for bringing about cost competition among educational institutions. The voucher plans offer the possibility of creating a market-like situation but do little to effect the status (and quality level) hierarchy of educational institutions. And, close examination seems to reveal no rewards for increasing productivity, however defined, with disincentives for increasing productivity fairly evident. It also seems to be the usual case that educational needs always exceed existing resources, an item of some importance to those groups who want to represent professional educators in collective bargaining procedures.

As public disenchantment for education is expressed through no increase in state appropriations for salary increases, during a time of double digit inflation, one wonders if it will be only the most dedicated educator who will not see a concern with costs as a threat to future employment. From the earliest history of cost studies (1907) it has often occured that studying costs meant gathering evidence to cut costs, when in fact costs may need to rise to insure a greater possibility of educational goal attainment. Hopefully Florida's educational planners and administrators can approach uniform costing as the creation of an important management tool which can assist all of us in education to increase our effectiveness.

APPENDIX

Examples of Data Presentation Formats

and

Data Requirements*

*Suggested by Dr. William Odum, Division of Community Colleges

TABLE #1

COMPARISON OF COST BY PROGRAM CATEGORY

FOR ALL STATE SUPPORTED PROGRAMS

(EXPENDITURES PER CAPITA)

STATE PROGRAM STRUCTURE	FOR TOTAL POPULATION			FOR TARGET POPULATION			FOR CLIENT POPULATION		
	LOCAL	STATE	FEDERAL	LOCAL	STATE	FEDERAL	LOCAL	STATE	FEDERAL
DEPARTMENT									
DEPARTMENT									

Requirements:

1. State Program Structures
2. Accounting procedures for all expenditures by revenue source for a fiscal year for each agency in each program.
3. Identification of target and clientele groups for each program.
4. Definition of revenue sources.

TABLE #2

COMPARISON OF COST OF EDUCATION CONDUCTED

BY FLORIDA STATE DEPARTMENTS

STATE PROGRAM STRUCTURE	FOR TOTAL POPULATION			FOR TARGET POPULATION			FOR CLIENT POPULATION		
	LOCAL	STATE	FEDERAL	LOCAL	STATE	FEDERAL	LOCAL	STATE	FEDERAL
DEPARTMENT									
DEPARTMENT									

Requirements:

1. Florida education goals structure
2. Identify all agencies performing educational functions or activities.
3. Accounting procedures for all expenditures by revenue by goals for a fiscal year for each agency or costing principles and procedures to cost in this manner.
4. Definition of local, state and federal revenues.

TABLE #3

COMPARISON OF COSTS OF EDUCATION

CONDUCTED BY VARIOUS EDUCATIONAL DELIVERY SYSTEMS

TO ACHIEVE STATE EDUCATION GOALS

(Note: a separate table could be presented for each level)

GOALS/OUTCOME STRUCTURE

1. Goal...
   (outcome)...
   A....
   B....
   C....

2. Goal...
   (outcome)...
   A....
   B....
   C....

7. Goal...
   (outcome)...
   A....
   B....
   C....
   D....

COSTS BY EDUCATIONAL DELIVERY SYSTEM									
SYSTEM A						SYSTEM B			etc.
Input/Process Costs			Outcome Costs			Input/Process Costs			Outcome Costs
LOCAL	STATE	FEDERAL	L	S	F	L	S	F	LOCAL	STATE	FEDERAL

(Table #3 Continued)

Requirements:

1. An education goals structure with specific outcome objectives for each goal.
2. Standard procedures to crosswalk (classify) delivery system activities to the goals/outcomes structure.
3. Accounting and costing procedures to provide input/process and outcome costs by revenue source for system activities.*
4. Identification of other related data to explain costs.

*Costs of Education:

1. Input/process costs:
   a. Expenditures per capita
   b. Expenditures per student
   c. Expendutures per student semester hour and FTE student

2. Outcome Costs:
   a. Cost per grade level of achievement, by area of study
   b. Cost per academic year completion
   c. Cost per diploma, degree certificate earned
   d. Other kinds of outcomes, etc.

TABLE #4

DETAILED COMPARISON OF COSTS

(EXPENDITURES) BY EDUCATIONAL DELIVERY

SYSTEMS

(Note: a separate table for input/process and outcome costs)

EDUCATIONAL PROGRAM STRUCTURE (ACTIVITIES)	DELIVERY SYSTEM A			DELIVERY SYSTEM B		
	DIRECT COST	INDIRECT COST	FULL COST	DIRECT COST	INDIRECT COST	FULL
	A B C D E F G H I (components)			A B C D E F G H I (components)		
Program A						
Sub-program 1						
Sub-program 2						
Program B						
Sub-program 1						
Sub-program 2						
Etc.						

Requirements:

1. Program structure for education (this is basically an activity structure).
2. Compatable accounting and costing principles and systems.
3. A crosswalk from organizational structures to the program structure.

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EPILOGUE: SUMMARIES, CONCLUSIONS AND RECOMMENDATIONS*

A paper, "Indicators and Costing of Florida's Education Goals," was distributed to a statewide audience of citizens, students, educators, administrators and policy makers, who subsequently appeared at one or more of three regional conferences held on succeeding days, September 16-18 in Tallahassee, Orlando and Miami. The writer of the paper, Dr. John S. Waggaman, served as moderator of a two and one-half to three hour session at each conference on the topic of the paper. The regional meetings included sessions on three other indicator topics also being researched for the development of phase II of the Education Element, Florida Comprehensive Plan (see page one of the original paper for names of other writers and their topics).

Each session of the regional conference was attended by 25-45 persons representing all conceivable viewpoints about education and its costs. This writer received these diverse, often conflicting, but sincere expressions of concern as a measure of importance about the issues raised in the paper (and of relevant issues not covered). The insights, information and opinions expressed at these conferences helped to clarify the foremost issues related to development of indicators of educational costs; that information was then used in the preparation of this Epilogue.** The recommendations from this study appear on the last page following the summaries and conclusions.

Summaries and Conclusions.

The order of topics presented below reflects their overall importance and not the order of presentation in the paper; conclusions follow each summary statement. It should be noted that a concern with costs per se rather than indicators exclusively should be interpreted as an indication of a lack of cost data. There is some feeling that reliable cost data is needed before indicators of costs can be identified; that assumption is largely incorrect because indicators may in fact be used to predict

* Epilogue and original paper (August 24, 1975) by Dr. John S. Waggaman, The Florida State University, Tallahassee, Florida.

** The writer believes strongly in the step-by-step process which was used for obtaining input from all of those persons concerned with education costing. Policy development in this fashion involves extensive logistical efforts, tight schedules for writers and reactors and a fine tolerance for diversity of opinion and uncertainty of outcome. However, the rewards of real citizen input, seriously given, in the development of education policy fits the highest ideal of participation in government. All who planned and participated in this project should be commended for the time and effort freely given.

approximate costs, an activity engaged in by those who build budgets or manage educational finances.

1. There is widespread concern that unit cost data may be mis-used or not used at all even if scarce educational resources are used to build outstanding cost systems. Very limited legitimacy is given to the process of conducting educational cost studies and the data resulting from such processes. These fears and concerns exist in spite of, or because of, the Florida laws which require that all segments and levels of education must conduct cost studies.

a. There is a fear that cost data will be used in making policy decisions without concern for the educational consequences. Historically, cost studies have been used to cut budgets rather than as a means to more effectively allocate scarce resources so that specified goals and objectives may be achieved. Currently the "shortage" of educational income has brought forth a variety of methods to cut expenditures.

b. Even if the desired cost data were available there is a very real possibility (based also on historical experience) that such data will not be used. Practically all budget requests are prepared or evaluated on some incremental basis, even when the very elaborate PPBS formalities are observed. Budget requests based on cost analyses and real program needs have generally been unsuccessful as strategies for increasing state dollars per student.

2. There is almost no evidence at this time that current cost studies are a useful and effective administrative/management tool. One of the reasons for such an outcome is that much of the educational costing activity in Florida has been underway for only a few years. Another problem is that most state-wide costing systems seem designed to move data up the educational hierarchy rather than designed (in addition) for the making of cost effective educational decisions at the local operating level.

a. It is important that some stability be provided state, district and institutional officials so that a set of cost concepts and procedures can be perfected and made reliable. Constant changes in education funding and accountability procedures these past few years have restricted the ability of educational officials to carefully examine the changing costs of education. A stable system for three years, with only minor changes, would enhance dramatically the development of educational costing systems.

b. There is growing concern among public representatives and policy makers that more rational data-based program decisions must be made from cost studies and other such analytical techniques. This point is of enormous importance during a time when educational needs always exceed resources available. Even more important is the fact that this point arises because educators have asked regularly for more funds, but the quality of education seems to have fallen (i.e., achievement test scores have declined in some areas). This inverse relationship has led policy makers and some administrators to suspect that resources were being wasted or mis-used.

3. The demand for cost data down to the program level from which inter-institutional comparisons can be made raises serious questions about the most appropriate financial analysis function to be performed at the state level.

a. The expectation for analysis of all program costs at the state level could result in an inefficient use of state resources; it also would seem to be contrary to the trend in current public policy. Two major Florida policies established greater responsibility at the local operating level: school house management in the K-12 system and lump sum funding in the State University System. Both of these policies place greater financial responsibility (and trust) at the local school and institutional level. To demand that program cost analysis be placed at the state level would seem to involve two steps backwards.

b. Early in this project program cost data were suggested as a substitute for indicators of cost, which itself is an indication of a lack of understanding about the character and purpose of cost indicators. If actual costs, from the accounting standpoint, were to be used, it is very important that they be determined using expenditure, not budget, data because actual spending may differ importantly from planned spending. Regardless which kind of data are used, cost indicators could enable estimates of expenditures and costs to be made before budgets are finalized. This would certainly be true if median professional and staff salaries were used as an indicator, because salaries are such a large proportion of educational budgets.*

4. Even though cost studies are required by law for all segments of education in Florida, the costing concepts and procedures are not comparable among the various segments. Even within the same segment the quality of the data used in the cost studies may be quite uneven; however, as the management information systems are perfected this quality problem is expected to become manageable.

a. There is a definite need for the establishment of uniform costing concepts across all of Florida education IF it is important and necessary to compare program costs across the various segments of education. For example, IF it were considered appropriate to allocate resources for programs on the basis of the lowest cost programs, then it would be necessary to have comparable cost data for similar programs throughout all of Florida education. The most obvious object of such analysis might be, for example, typing courses or all courses in a secretarial science program, for they are offered in the high schools, vocational-technical centers, community colleges and the universities. Again, the question must be faced whether analysis of this kind is so important that it warrants a very expensive effort which would be required to establish uniform costing concepts for all of education, AND whether such efforts are appropriate

* Median salaries could be multiplied times number of staff and faculty and the product divided by the average (historic) percentage which salaries constitute of the total budget.

at the state level.

b. One important step for all cost studies, even if they are not standard across all of Florida education, is the deflation of cost data to constant dollars. Simple rates of increase between years are insufficient to reveal whether the costs of inflation have been met with adequate revenue increases in earlier years. Constant dollars of cost from a fixed base year will show the extent to which educators have no choice but to absorb the cost of inflation if they wish to stay in their profession in Florida.

c. Changes in the appropriation and cost per FTE student need to be identified clearly. For example, declining unit costs may indicate the benefits from economies of scale OR declining appropriations and continued enrollment increases (forced productivity increases). While the first is desirable, the second is usually accompanied by some reduction in quality of education, especially in the lower grades where class size (enrollment) increases per teacher.

d. A strong case can be made for using the headcount student as well as the FTE student as a reporting unit of cost. The need for headcount costs is greatest in those segments of education where part-time students are an important fraction of the total enrollment. There are many administrative costs which arise on a per student basis, regardless how many class or credit hours each student may be taking.

5. Even if the vexing issues about costing concepts and procedures are not settled, the construction of a cost of education index can provide important information about cost indicators.

a. The development of components for such an index may be the best way to identify the common cost categories across all of Florida education. These components cum cost categories could become the cost indicators, e.g., square footage space to be heated and/or air conditioned applied times an appropriate utility rate.

b. The weighting of components in the index needs to be carefully studied because labor costs are such a large component. The number of components would need careful consideration because of the usual problems of developing adequate and timely data sources while controlling the quality of data to be used, both for the indicator measures and the unit costs.

c. Specific cost differences for urban areas should be incorporated in the index. Rather than use an all-Florida average it might be best to develop separate cost of education indexes for the various regions of the state, or at least differentiate between urban and non-urban areas.

6. One major cost of education category not easily identifiable is that for the new delivery systems. Whereas the usual cost analysis concepts and procedures relate specifically to institutional/school costs, it appears that few costing procedures have been developed for measuring costs of the new systems; perhaps the economic concepts of cost effectiveness or cost-benefit analysis should be applied here.

a. The new delivery systems involve such ideas as work-study and cooperative education in which the student earns credit for work experience. (It should be apparent that sending the student to an employer for an educational experience has the effect of shifting part of the cost of education from one sector of society to another, i.e. from education to business and industry.) The non-time bound systems in which a student may enter any time and leave any time may lead to greater reliance on group average characteristics wherein the group is a statistical cohort, but no longer a class or grade. Formula funding and costing by grade level may be unrealistic for financing education of such delivery systems.

b. Other of the new instructional and delivery systems involve such ideas as competency or performance based education and learning to mastery. These ideas also defy the normal calendar of educational accounting because a student may repeat a course or learning experience until successful performance is demonstrated. Of course, some students may enroll and demonstrate competency immediately, thereby allowing additional enrollment or other activity for that student, but still gaining FTE credit for the school. If this system appears to be similar to the old procedure of holding back students who don't learn, it can have that effect. The issue here though is (again) that formula funding may "reward" a school/campus which holds back the largest number of students, a procedure which would raise costs, should the students not drop out of school. OR, imagine teacher/faculty workload "adjusted" downward by the number of students who demonstrate competency on the first day of class; perhaps formula funding could become an incentive system for encouraging teachers to raise performance levels should such adjustments be permitted.

c. Perhaps the only way to adequately cost education where these new systems are used is to cost each individual educational experience and accumulate the total cost of all such experiences (courses, etc.) for each individual student. Nationally tested costing procedures are available for such analysis in community colleges and universities (from NCHEMS at WICHE).

7. The outputs of education which have the most importance, according to some policy makers, as they relate to the ability of the educational system to obtain government support (appropriations), are those which constitute performance measures, not such more general measures as quality of life.

a. Those output characteristics which seem exclusively in the domain of the schools (K-U) are those of achievement, literacy, completion of course work, transfer to another grade level, graduation, placement in available jobs and parent/student satisfaction. These come very close to the statement of goals for Florida's education system, and apply to all levels of education.

b. Costing outputs and Florida's education goals will be a difficult task because of the archaic viewpoint that much of what students learn is not measurable or that the outputs themselves are difficult to measure. The latter assertion is true for the higher grades, but that does not make measurement impossible.

c. Sorting current cost and finance data, by level of education, into the education goal categories is possible but will require expert estimation and a variety of other adjustments in the currently available data. Even if such adjustments are completed, the resulting data will be non-comparable between levels and could be dangerously misleading to those wanting to compare costs between systems and levels of education. (Incidentally, for Goals 6 and 7, page 17 of the August 24th paper, item a. K-12, should have added to it, "Adult post-secondary" because such courses are conducted in some school districts.)

d. Rather than attempting to redesign costing systems (especially in light of conclusion 2. a. above) for the entire Florida system, it would seem more realistic to focus on one of the goals, such as #1, Basic Skills, or even a part of it, such as mathematics. This goal is a high priority item for the Commissioner of Education and the State of Florida which makes it a logical choice. Uniform costing concepts for this goal could be built for all of Florida education, IF the idea is accepted that even colleges and universities perform remedial teaching in order to bring a student's basic skills up to acceptable levels for completion of current programs.

e. It should be noted that local employers (especially business and industry) can provide important information about the outputs of the educational system. Their opinions about the quality of basic skills of new employees is itself an indicator of educational output. Even more important are the opinions of business leaders concerning the educational level of the work force and the relationship of this quality to location of industry. Conceivably one might be able to assign benefits lost from not obtaining some industry to the relative cost of education in a community.

8. A few indicators of cost are widely agreed upon and readily available. A variety of other indicators have been suggested and deserve careful consideration.

a. The student-teacher ratio (and/or class size) is a clear indication of unit cost and workload, with the two being inversely related, according to many educators.

b. Median salary by grade, department or discipline, should be used in conjunction with the student-teacher ratio.

c. Enrollment is an important indicator, whether in student credit hours or full-time-equivalents. Headcount is also a useful indicator for certain kinds of administrative costs. CEU's, continuing education units, might become significant in the future as more non-credit but formal education expands its enrollments.

d. CLEP hours, those hours awarded students who successfully pass the college level examinations, are important indicators of savings to the State of Florida, the parents of students or to self-supporting students. GED completions may also be used as indicators of savings to Florida taxpayers because most persons who take the GED will not have remained in the public school system and thus not counted in the FTE appropriations or allocations. Note, however, that both sets of examinations may enable

a student to avoid obtaining a demanding and quality education, a suspicion of many teachers and faculty members. Note also that students may drop out of traditional high schools, when GED testing is readily available, to escape the institutional environment.

e. The number of drop outs (not stop outs) and "hold-backs" may serve to indicate the added costs of trying to bring all student up to some norm of standard of achievement.

f. There needs to be some way to identify precisely the genuinely duplicate programs and course offerings, i.e., those which the same students could take at any of several locations with little or no added non-educational student expenses (although there might be very different costs, tuition levels, fees and book charges). (Elimination of duplicate courses among different institutions could cause enrollment shifts which would require additional capital or equipment expenditures, in addition to the direct labor and related costs at the alternative campus, which, in turn, might quickly erase any previous cost advantages.) Perhaps Common Course Numbering will provide information about duplicate courses between and among the vo-tech centers, community colleges and universities; if so, perhaps Common Course Numbering should be extended down through the high school and include all adult education courses as well.

g. Number of teachers and faculty members on tenure could be an important indicator of long run costs. It has been suggested that student (and other) evaluations of teachers and faculty members needs to be related to their tenure status for the purpose of developing some kind of indicator of the cost of poor teaching among the more expensive group of teachers (i.e., those with seniority and tenure). The ultimate purpose of developing this indicator would be to subsequently relate student achievement to teacher competency, an important accountability issue involving great controversy.

9. Additional indicators of costs may be developed by performing secondary analyses on data already collected by the Florida Department of Education.

a. It is strongly urged that educational planners be given an inventory of, and full access to, the many state and federal reports submitted by educational institutions to and through the Department of Education. A careful review of these reports may reveal a variety of data elements which could be used as indicators.

b. Once the data elements already collected are identified and their potential usage as cost indicators determined, then the remaining need for indicators can be specified and systems for collecting such data evaluated. Evaluating these needs should indicate the extent to which the existing costing systems would have to be changed to make one uniform system, should that purpose be clearly agreed upon.

c. It is important to note that other departments of Florida government may collect survey data which also can be used for developing

indicators and monitoring education. Similarly, Florida's colleges and universities may conduct state or regional surveys which would be relevant. Educational planners should be given the opportunity to "piggy back" indicator items on all such surveys, provided the resources are available, of course. Although the benefit of "piggy backing" is the use of other's expertise, the additional items should reduce the unit cost of such surveys, thereby benefiting all concerned.

d. Rather than attempting complete costing systems for all of education and the indicators for them, it may be more cost effective to develop sampling procedures for obtaining data from the programs in the schools, districts, campuses, colleges, and universities. Something like this is already being done in the K-12 system.

10. Comparisons of state appropriations for educational activities in the Department of Education with the appropriations, costs and services of other departments of Florida government appears problematical at best. Many of the other departments and their human service activities have had very stable cost and budgetary concepts for many years; they have also freely provided such data with their requests for state appropriations. Education has been at a disadvantage because of the changes in the system, growth of population served and evolution of funding and costing concepts.

a. Dr. Kern Alexander's paper for this project, "Education as an Investment in State and Individual," covers some of the important issues about the benfits of education in relation to crime, welfare, family services and so on, which may be related to the human service programs of various departments of government. Performing cost benefit studies in Florida using Alexander's findings would seem more profitable (and less conflict generating among government departments) than trying to compare the cost of formal education through the Department of Education with the educational programs in other departments.

b. The use of per client (student) appropriations as a measure for comparing educational costs within Department of Education or with other departments reveals a significant distortion which demonstrates the need for cost data by program and function. The instance referred to is the appropriation difference cited by some law makers between community colleges and universities. The additional and different functions performed by universities (development of new knowledge, service to adults and governments) requires greater appropriations, but in terms of lower level undergraduate student budget requests, the amounts were approximately the same between community colleges and universities, according to Chancellor York of the State University System.

c. Interstate comparisons are also very important, but it would appear that Professor Alexander's second paper for this project and his other research should be used as a prototype to rank and rate Florida among the 50 United States. His research, using adjusted per capita data, shows Florida ranking 45th or worse for expenditures on post secondary education.

d. The concept of target populations is fully developed by Dr. Charles Grigg in his paper for this project. Taking his categories and conducting state-wide sample surveys might be the best way to determine the difference between target and client populations and the cost of education to the state, i.e., relate respondent's report of educational services consumed to costs of such particular services. Similarly, the satisfactions of the various cohorts should be included in any analysis of cost of services, to determine satisfaction with education services and with the costs of the services.

Recommendations.

Considering the range of topics covered and the original assignment for this paper, the recommendations will be limited to the following:

1. A cost of education index should be constructed for all of education (Summary #5).

2. As many of the suggested indicators as possible should be used IF the data are already collected and available (Summary #8).

3. DOE Division MIS data elements should be inventoried and sent to the Department of Education MIS. A careful study should be made of the data elements, including secondary analysis, to determine if additional cost indicators may be found in the already collected data (Summary #9).

4. A limited number of financial studies need to be conducted for the purpose of determining the costs and their indicators; such studies should be conducted selectively and use sample rather than universe data, beginning with these topics:

   a. Goal #1 Basic Skills (Summary #7 and #10);
   b. Adult programs and new delivery systems (Summary #6);
   c. External benefits of education (Summary #10).

5. No attempt at developing a uniform costing system for all of Florida education should be contemplated until it is determined that the results from carrying out recommendations 1-4 will not provide the cost indicators appropriate for educational planning purposes (Summary #'s 1-4).

6. Once a set of indicators have been identified, preliminary data collected and their relationship to actual costs defined, another round of regional conferences should be held with educational officials, teachers and others to assess the face validity of the indicators and their possible value for local planning efforts.

FINI