In this discussion of the systems approach to educational change, the author discusses the programing, planning, budgeting, and evaluation aspects of a system for the management of educational resources. Four common misconceptions about PPBES are considered: (1) that PPBES can make decisions, (2) that costs can be completely quantified, (3) that people will readily adapt to the systems approach, and (4) that objectives are easily quantified. The author argues that PPBES provides a framework for decisionmaking, is adaptive to change, provides flexibility within the system, and may give schools more say in the structuring and the allocation of budgets. (Author/DN)
Across the nation, the post-war period from 1945 through to the end of the 1960’s was one of rapid economic and population growth. Phenomenal pressures were placed upon school boards to cope with the streams of students which descended upon school systems. School construction soared and staff recruitment outstripped the supply. The move from a war economy to a peace economy was only the beginning of a generation of rapid change to a country that is registering clear indications of Toffler's oft quoted disease "Future Shock", and defined by Toffler as "too much change in too short a time".

Massive building programs were undertaken to house students and adults, and as the generation advanced, large doses of short term remedies were administered, like the Federal-Provincial vocational grants, and the Winter Works incentive programs. Education programs were extended and diversified and 'ad hoc' planning was resorted to in meeting society's demands as the economists tinkered with measures to stabilize inflation and unemployment.

As the generation wound down, school boards were left with sky-high school levies and insufficient resources to meet the continuing demands of a population expectant of quality results for the enormous expenditures being made on education.

In the five years preceding 1968, educational expenditures had doubled in our local system. At the predicted rate they would again double in the next five years, and if uncontrolled would escape control in the foreseeable future. The whole Metropolitan Toronto area was experiencing the same pattern, as were other Ontario Boards. In Metropolitan Toronto some $600,000,000. was spent on school construction from 1953 to 1969. The school population increased 115% — from 180,057 to 389,608. To date, in the first years of the seventies, enrolments have swollen by another 4%. The mill rate for education increased 200% over the same years, from a 1953 residential rate of 16.79 mills to 49.03 mills in 1969. In 1972, with great effort, the residential rate stands at 49.22 mills.

Successful as 'ad hoc' planning was during the post-war generation, the citizenry, in the face of increasing tax loads, high unemployment and rapid change, reacted to the shock administered, and demanded as their budgets were stretched, a re-examination of the path they were on. Thinking members of the community asked if the path should not have a new direction. Less acute, but nonetheless aware persons simply resisted further change and demanded retrenchment. Others asked that a defensive position be placed before them so that they could better understand, not only the increasing cost dilemma of their tax bills, but the nature of the changes they were expected to support and deal with. The Province of Ontario responded in 1970, by imposing ceilings on education expenditures.

PPBES is one answer in endeavouring to meet the question of accountability; accountability in a fiscal sense, but more
importantly, accountability in the sense of the educational system responding to the felt needs of the community as they may be communicated. Replacing 'ad hoc' approaches with a planned, systematic, rational approach for the direction education should take, has the potential of handling effectively the rate of change inherent in the 'future shock' syndrome.

Its hope is that it will enable the new direction to be maneuvered capably. Its hoax is that its demands of close order and reasoning may make many of us falter; that its simple concepts but complex implementation processes will be only half understood, ineptly administered and consequently cause us to lapse again into short term, immediate solutions for educational problems.

Any system is responsive to the questions of WHAT, WHY, HOW, WHO, WHERE and WHERE. What's and Why's, when answered, will express GOALS AND OBJECTIVES. A GOAL might be described as the broad purpose of a particular endeavour. A goal itself is responsive to a felt need. An OBJECTIVE might be described as a more specific aspect, or part, of a broad goal. One may have one or many specific objectives to express a goal more definitively.

Responding to the question HOW provides three additional elements of a system:

1. a PROGRAM - of how goals and objectives are to be achieved.
2. an EVALUATION - of how effective the program is, and
3. a BUDGET - to indicate how costly the system is.

In responding to the questions of WHO, WHEN and WHERE, one is merely extending the question of HOW.

Goals and Objectives emanate from PLANNING. Planning, linked with programs, budgets and evaluations are the elements of all cyclical systems and the initials of these elements produce the acronym PPBES -- by now a familiar, if vague term.

Other and more descriptive acronyms are about as well, like MERS -- Management of Educational Resources System; ERMS -- Educational Resources Management System; ERAS -- Educational Resources Allocation System, and EPDA -- the Edmonton Public School Board's proposed system.

There is nothing new in a systems approach. We have all been exposed to and practised the three concepts of PLANNING, ORGANIZATION and CONTROL.

Planning has always encompassed the setting of goals, considering how these goals may be achieved, and deciding on which of any available alternative means would be best suited to attain them under prevailing conditions.

Organizing has always encompassed putting together human and non-human resources to carry out the plans in a systematic way.
Controlling has always encompassed checking on the performance of any plan, noting deviations and taking corrective measures if things have gone awry. Corrective measures, as a result of controlling, involve taking into account feedback from any system's communications network, which constitutes an evaluation of what has occurred and re-planning to improve the operation and end product.

Planning, Organizing and Controlling all have one thing in common. Each requires that decisions be made. Decisions motivate every system. Informed decisions are the basis of good management.

Decisions are made at all levels of any system, and at every level they involve two things:

1) They involve choosing from available alternatives.
2) They result in action -- or a deliberate non-action.

Decision makers therefore seek out the best possible information concerning goals, objectives, programs, budgets and the consequences of their decisions. The consequence of a decision is termed its evaluation.

The other term associated with and synonymous to this is accountability. We are all accountable for our decisions -- and the educational system is held accountable for the collective decisions of us all.
We note again that there is nothing new in these concepts. What may be new is the reminder of the sequencing, the logical ordering, the inter-relation and the interaction of all the elements present in making a decision.

Personnel in school boards are concerned that the educational mix is the best that can be purchased for the dollars spent. This involves short and long term planning. The total financial aspect of a Board's operation has to be examined. It must be done on an integrated basis, involving each level of the system, so that the overall goals of the system, and the particular objectives of the system, are achieved systematically, within the resources available at any given time.

Educational and financial management have to be achieved for a Board just as in the private sector, within the conceptual framework of the goals of a Board. And the application of the decision making tools of analysis, planning, organization and control, are important in maximizing all available resources for the benefit of the ultimate purpose of any school system -- that of the education of the students in the classroom.

PPBES is simply an information based tool utilized to facilitate the management of resources. This is why, in the Borough of York, the tool which is being developed is called the
Management of Educational Resources System. MERS, ERAS, EPSA, PPBES or whatever acronym is attached to the systems approach utilized are management tools, and they can all vary according to emphasis or need. But because each of them is a management tool, frequently the tool is expected to do more than it is capable of shaping.

It is a hoax to believe that any management tool will make decisions for you. No system is a panacea. Any involvement in a systems approach can only assist in making better decisions. The management tool of a systems approach can array a myriad of information. It can hold in its computer data banks, ready for instant recall, massive amounts of information describing any school system, and the computer can manipulate this information and simulate any configuration you might wish to program, but the system cannot, repeat, cannot, make any decision for you. Decision making is and must remain a uniquely human endeavour.

It is an even greater hoax to believe that quantified cost figures are the ultimate comparisons to be used in evaluating alternatives. The exclusive use of the-cheapest-is-best theory has to be abandoned at the outset. All things being equal, the least cost principle should be used, but qualitative analysis still must play an important part in the choosing of alternatives. A slightly higher cost alternative may have additional educational benefits far in excess of the cost differential. If the performance requirements of a program change cannot be evaluated in a quantifiable manner, then subjective evaluation will need to
be made together with an evaluation of the trade-off in costs.
If one lets it, costs can become the overriding dictator of
events. Cool heads must prevail in the decision making process.
The chosen alternative must best meet the stated goals and objectives
within the resources available, but relying on costs alone is not
effective management, when an inferior alternative is chosen.

Another hoax is that people will readily adapt to a
systems approach. Nothing is farther from the truth. The hurdle
that has to be climbed in implementing a systems approach is that
of 'resistance to change'. Resistance to change is the antidote
which men and women rush to administer in dealing with rapid
rates of change. Toffler's 'future shock' disease is the disease
of change. It makes some of us uncomfortable and insecure.
Change makes us feel threatened if it occurs too quickly and in
too great proportions for us to cope with easily. Resistance
to change is a normal human reaction and overcoming it requires
careful, patient and positive human relations in preparing,
explaining and leading.

A further hoax which should be mentioned is that
objectives are easy to quantify. Quantifiable data is the mode
which the computer uses. It is a yes-no, on-off, black and
white manipulation. We can account for some grey areas by
providing ranges for the on-off tabulation, and this is suitable
for choosing alternatives respecting payroll, budgetary control,
examination results, population projections, students' enrolments,
and costs, to name only a few. But what about measuring
understanding, or the performance level of say the language arts
program, or the music program. How is comprehension evaluated? How do you measure the value of a computer assisted instruction program against a teacher instructed program? What value does one place on the human contact needs of students? Until more sophisticated means of evaluating alternatives are available to us in reliable quantitative forms, then qualitative analysis together with quantitative analysis must be used in decision making.

Mention has been made of only a few of the hoaxes, four to be exact, in connection with PPBES. There are others, like the fear teachers and others have that writing down their program goals and objectives will somehow result in job jeopardy; that the Peter Principle will display itself; or that performance indicators will be deficient.

A hoax is a deception. Indeed the dictionary calls it a sportive deception and if a systems approach is properly used, serious consideration cannot be given to the types of hoaxes mentioned.

PPBES has stronger offsetting attributes.

First, a systems approach provides a better framework for decision making. It provides this framework at the classroom level, the facilitator level, the Board level and at the community level. Objective analysis of benefits and costs of any proposed change in a school system requires a systematic rational evaluation of alternatives. Priorities can be ranked by a teacher in meeting the needs of students, by facilitators in providing for...
educational growth and direction, by the Board in establishing the emphasis the system should display at any given time, and by the community in evaluating and deciding how well the educational system meets its felt needs. When multi-year planning and decision making by objective evaluation replaces 'ad hoc' spur-of-the-moment planning and decision making, then creative, productive and maximum performance can be expected and achieved.

If we see a need to evaluate objectively what education is doing; if we see a need to cope with the ever increasing demands on curriculum time; if we see that the educational dollar is in short supply and the principle of supply and demand needs to be brought to equilibrium; if we dare to plan for tomorrow, then PPBE is a hope.

Secondly, a systems approach emphasizes the outcomes of a school system. If the end product of the school system is inappropriate to the needs of students in adapting to today's society, or tomorrow's, then it is obvious that changes have to occur so that a better end product is achieved. When a systems approach is utilized in an educational organization the means are available to simulate programs, facilities, equipment, human resources and costs, so that students can be educated to deal with the changing requirements of today, and for tomorrow.

We will never be able to predict or simulate future requirements precisely, but a utilization of a systems approach enables variables to be reckoned with as they arise and new predictions and changes to be made. A PPBE system is not a static system.
it is a cyclical one -- one in which all the elements of planning, programming, budgeting and evaluation interact one with another and from which the outcome of anticipated change can be evaluated.

Thirdly, one of the great hopes of a PPE system is that teachers and support staff will experiment with alternative programs. Once resistance to change is overcome and the utility and flexibility which a systems approach provides is discovered, the means are at hand for programs to be shaped which really meet the needs of the students under instruction. Rather than being confined to a rigid program format to which all grade levels conform, the program method of meeting objectives can and will be altered as necessary as long as the objectives of the classroom or student program are coincidental to the goals and objectives of the system. Flexibility will exist such that the needs of one district in a municipality will be able to be met in a very different manner than the needs of a neighbouring district, if such need is evident.

The fourth offsetting hope is that schools will have more say in the building and allocation of the budget. Program budgets are built on the assumption that schools identify their priorities in providing the educational package they offer. This package may well be very different if the local community served by the school is very different from others in the system. A school will package its programs to meet the needs of its community, and the resources required to meet these needs will vary accordingly. When a school identifies its resource needs and is charged with meeting its objectives effectively within such resources, when it is indeed held
accountable for providing appropriate education for its students, then the ultimate hope of a systems approach in education will be realized. If we, as managers in school systems, refuse to delegate this responsibility and continue to centralize all procedures; if we impose uniform or universal programs which are required to be followed by rote, then the ultimate hope of PPBES is dashed. PPBES is shared decision making, and it requires commitment to that principle. It is a mixture of bottom-up and top-down meeting of the minds to effect the best utilization of all resources, human and material.

The development of the Management of Educational Resources System in the Borough of York has experienced all the hoaxes and hopes referred to and a few frustrations as well. Nonetheless it has reaffirmed that change in an educational system must be supported to a very large degree from within. Change cannot be imposed successfully. The organization structure which deals with a systems approach in an educational situation must actively involve all levels of the system, teaching and non-teaching. A large body of expert opinion exists in a school system which directly relates to real life problems, and this body of expertise must be utilized in developing successfully conditions for examining and simulating programs for change.

We are developing in the Borough of York a very encouraging state of understanding by the staff of the potential capabilities of the Management of Educational Resources System.
But this understanding is not being achieved without resistance to change; not without the fear that costs will dominate decision making, and not without the fear of professional or job jeopardy on the part of persons not yet fully conversant with systems approach concepts.

But giant steps have been achieved.

System goals, objectives, and programs have been identified. School goals, objectives, and programs are currently being written with assistance from the Main Planning Committee, the Learner Characteristics Committee, the Implementation and Support Committee, the Communications Committee, and the Budget Committee. Sub-program objectives are being prepared and the screening and evaluation processes are being made ready. Program budgets are being prepared in eight pilot schools. The learning curve generally is rising more sharply as the utility of the system is more and more appreciated. We see in MERS a real hope for the improvement of the opportunities for learning in the schools of York.

The real hoax of PPBES is that we continue to linger on the merits of its potential and worry about the difficulty of implementation and the immense work involved in its application.

The real hope for PPBES is that school boards in Canada are now developing working applications of system models like the Management of Educational Resources in the Borough of York, and that very soon such implementation models will be effectively
demonstrating how accountability can be achieved, and how the
'future shock' syndrome can be averted.

The final word must be Plato's, for he said
"it is only if we can pursue all these situations until we
see their kinship and common ground, and can work out their
relationship, that they contribute to our purpose and are worth
the trouble we spend on them." (3)

Presentations

1. O.A.E.A.O. Conference
   Hespeler, Ontario
   September 16, 1972.

2. C.E.A. Convention
   Winnipeg, Manitoba
   September 20, 1972.

3. Lincoln County Board of Education
   October 12, 1972.

4. A.S.B.U. Convention
   Chicago, Illinois
   October 26, 1972.

September 20, 1972

W.L.G. James
Canadian Education Conference
Winnipeg, Manitoba.

(3) Plato, *The Republic*, VII, Translation - H.D.P. Lee, P.300,