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ABSTRACT

The Report of the International Commission for the Development of Education reinforces the advances that are occurring in education and in overall development policy. At this turning point in education, planning must contribute to needed mutation and reform. Vector planning seems likely to supplement target planning as a means of identifying and programing needed reorientations and as a means of helping to learn experientially through feedback. Target planning is programing of activities to meet specified quantitative levels at specified times. Vector planning is the art of designing educational programs and innovations oriented toward desired directions of improvement and of incorporating feedback for correcting activities and, if necessary, goal structures. Planners have to accept responsibility for their potential political role; they must help in the formation of coalitions of clients, implementers, and beneficiaries to adopt and propagate innovations along desirable vectors. The technique of simulation may assist in vector planning and in broadening participation in it. (Author/DN)

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The Faure Report

A Turning Point in Educational Planning

by

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(The author's views expressed here
do not necessarily represent the position of Unesco)

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1. In the title for this paper I refer to the Report of the International Commission for the Development of Education^{1/} primarily because its publication seems to coincide with, and to have helped influence, what the Director-General of Unesco called "a turning point in the development of education" (Maheu, 1973, p52). Since the turning point there is a new perspective for viewing education as an organized, partially organized, and even an unorganized human activity. By no means were all of the new insights revealed by the International Commission Report. But the Commission's work seems to have been synchronized with advances in the evolution of educational policy and overall development policy in many parts of the world - in developing countries and in technologically advanced ones as well. More than synchronized, its follow-up is putting new energy into the complex machinery by which individuals, families, groups, communities, nations and communities of nations realize their potentials through education.

2. This is not the place to summarize the International Commission Report. Some unusual attributes should be mentioned, however. Commissioned by Unesco, it is a statement of the broad areas of agreement of its seven independent members, each a distinguished educational leader who undertook only to speak for himself, but in doing so to try to take into account the concerns of his region of the world - Africa (Henri Lopez of People's Republic of the Congo), Latin America (Felipe Herrera of Chile), North America (Champion Ward of the U.S.A.), Asia (Majid Rahnema of Iran), the Arab World (Abdul-Razzak Kaddoura of Syria), Eastern European countries (Arthur Petrovsky of the USSR), and Western Europe (Chairman Edgar Faure of France). Except for minor reservations indicated in the text, these members reached a consensus. And they reached this consensus after a very systematic critical assessment which drew on (1) Unesco's experience in serving as the United Nation's instrument for international cooperation in education, (2) the opinions expressed in 75 specially prepared reports by advanced and often controversial observers^{2/}, and (3) hearings and discussions which the seven commissioners held in 23 countries in the course of preparing their report.

3. It might be expected that the International Commission's assessments, conclusions and recommendations, being a consensus, would be bland. They are not. The Commission deals at

^{1/} Faure, et al Learning to Be, Unesco Harrap, 1972, hereafter called the International Commission Report.

^{2/} Including Janne, Myrdal, Freire, Goodman, Piaget, Illich, etc.

length with the "dead ends" and inequalities of much existing educational practice, such as its preoccupation with hierarchies and authoritarianism; its excessive obeisance to rigid examinations; its tendency to mirror and in some cases, to magnify the elitism found in the societies which it serves; its international inequalities (e.g. developing countries, with 3/4 of the children of the world, in 1968 spent only 8.6% of the world's educational budget - down from 9% in 1960); and its intra-national inequalities (e.g. the absence of literacy courses in developing countries which offer "free" higher education, or rural-urban inequalities); etc.

4. But the International Commission Report by no means stops at diagnosing the pathology of education. Instead it calls for reform, and it sketches broad outlines of that reform, rejecting "half-measures". By offering many teasing glimpses into discoveries and arrangements which hold promise for the future of education, it gives hope and stimulation for national and local efforts in the quest for what it terms the "learning society". The Commission did not undertake to propose strategies for the educational systems of the world: it recognized that cultures vary widely from country to country and that the choice of the education a people wants is for each State to decide for itself. But the International Commission does suggest guidelines that can help in the evolution of such strategies.

5. Representatives of Unesco's 130 Member Governments meeting in their biennial General Conference in the fall of 1972, received the International Commission Report and devoted serious attention to its findings. In a carefully worded and passionately debated Resolution, the General Conference recommended follow-up of the Report by Member Governments, by Unesco, and by other interested agencies. The General Conference, while expressing satisfaction that the International Commission had carried out the major tasks entrusted to it, did identify problems with which the International Commission was unable to deal adequately, including differentiation of strategies for differing social-economic and cultural systems; the role of teachers in the reform and regeneration of education; and education's potential for promoting international understanding and peace.

6. The Report of the International Commission is already available in French, English, Spanish and Italian editions; twelve other language editions are in preparation. In several countries seminars and symposia for reviewing national educational policy in the light of the International Commission's findings are being held, including Nigeria, Chile, Iran, Canada, the Netherlands, Peru, Lebanon, France, Syria, India, Yugoslavia, Malagasy Republic and Switzerland.

7. On the international scene before the International Commission Report there was the Williamsburg Conference of 1968

and its sobering message of The World Educational Crisis^{1/}; in 1970 there was the widespread reflection on the future of education in nearly every country of the world, stimulated by Unesco's General Conference having declared that year as the International Education Year.

8. At national and subnational levels during the last several years an unusual number of fundamental reviews of educational policy have been taking place, many of them leading to proposals for and adoption of fundamental reforms. Examples include Costa Rica, Pakistan, Indonesia, Korea, Tanzania, Peru, Rwanda, Canada, and Ethiopia among others.

9 The last two countries named illustrate an interesting relationship between national efforts and the international turning point referred to above. In Canada much of the attention has been given to policy for post-secondary education, which includes adult education. There, of course, the major activity is at the Provincial level, since education does not come under the jurisdiction of the national government. Several of the Provinces have convened Commissions to study and propose patterns for development of education for the 1980s and in general terms for the 1990s. The Ontario Commission has published its findings in The Learning Society, which makes 126 recommendations, all generally designed to implement and to finance what on examination turns out to be strikingly similar to the bold conception of life-long education advocated by the International Commission. The Ontario Commission's work proceeded in parallel with and independent of that of the International Commission. Yet the results of the Canadian and International Commissions show remarkable agreement both in diagnosis and prescription. Now that the Report of the International Commission is available, Canadians in Ontario and other parts of Canada are finding reinforcement and enrichment in discussing their own plans for reform against the backdrop of the International Commission's findings. This provincial-national-international review is taking place in a series of Canadian seminars and symposia.

10. Similarly, in 1971 Ethiopia embarked on a thoroughgoing review of its educational development in cooperation with external sources of development cooperation in that country. In July of 1972 the Ethiopian Government convened a meeting, to which its external development partners were invited, to discuss the findings of 15 Ethiopian task forces which had been examining aspects of educational policy and practice and to consider the three alternative strategies for the development of Ethiopian education which had been drawn from the work of the task forces. While these efforts also were contemporary with the work of the International Commission, the strategy adopted by the Government following the review meeting also has striking resemblance to the general orientation of the findings of the International

^{1/} Coombs, Philip H., The World Educational Crisis, New York Oxford University.

Commission. Thus, while the Ontario Commission helps spell out life-long education into practical measures, the Ethiopian Review translates into specific innovative patterns the International Commission's concepts for the reform of primary education (which in Ethiopia is to be called "basic formation" so as to distinguish it from conventional primary schooling) through combinations of formal and nonformal education linked by work-study practicums.

11. In neither Canada nor Ethiopia was the Report of the International Commission seminal (although two Commissioners had visited Ethiopia in the course of the International Commission's consultations). The point is that in education there is movement in new directions across a very broad front, and much of this movement seems vectored in similar directions. The availability of the International Commission's Report is nonetheless playing a key rôle in encouraging national and local educational policy-makers to take the many risks of departing from obsolescent practices. They are discovering in that Report that not only many of their problems, but also the general lines of solutions to these problems are part of a larger whole - the universality of the educational endeavour.

II

Education as Development

12. It is necessary to place the foregoing efforts toward educational reform in the larger context of development, of which education is an integral part. In economic and social development, as in education, new orientations are evolving. The strategy for the UN's Second Development Decade in part reflects the changing values. The essence of this change is a general acceptance of a redefinition that national development includes not only growth in Gross National Product, but also improvement in the distribution of income and employment, the alleviation of poverty, the provision of minimal social services, and the enhancement of cultural values and identity. A good discussion of this evolution is included in the ILO publication Employment Policy in the Second Development Decade - a United Nations Family Approach, 1973.

13. One of the lessons of the First Development Decade is that education by itself seldom provides the dynamic by which people get on the ladder of self-sustaining development. Instead, the conclusion must be drawn that education and training can perhaps only complement and reinforce other development efforts. This lesson, still largely unheeded, requires the fashioning of a new partnership between educational planners and other agents of change. In this partnership mutual adjustments in and outside educational arrangements are necessary.

14. Along with a greater prominence for social and cultural values there is beginning to be a healthy debate about the ethical basis of development. In this connection, Goulet (1971) says "Development is not a cluster of benefits given to people in need, but rather a process by which a populace acquires greater mastery over its own destiny." (p.155). This conception is quite harmonious with a growing realization that a principal raison d'être for education is the contribution it should make to the escape from dependency.

15. Before the acceptance of the concept of life-long education, education was co-terminous with part or most of maturation of the young into adulthood. It was not only co-terminous, it was too often confused with the maturation process, so much so that shortcomings in education could generally be ascribed to maturational syndromes rather than to inadequacies in the design of the educational process. But now life-long education can liberate us from this confusion. Of course maturation is one of the natural ways of movement from dependency to autonomy. But appropriate education of children and youth can speed this process; alternatively education can very conceivably inhibit it.

16. Dependency, alas, extends beyond puberty: it is not confined to the dependence of the immature child or youth on his parents or on his in loco parentis. As Freire points out, oppressed adults are dependent upon their oppressors. Life-long education for every age group can provide a means by which individuals and groups may transcend their dependency and by their own actions help reshape their environment and the societies in which they live. Education should thus be expected to make a positive contribution to the escape from dependency, and educators as well as learners ought to be held accountable for performance against this objective.

17. Not every kind of education, nor every kind of development "assistance" will necessarily serve the movement from dependency to autonomy. It is relatively easy to imagine some types of education which would programme students towards a continued dependence, just as some patterns of relationship between deprived groups and those better favoured (i.e. those in the establishment, oligarchy or other vested interests) tend to perpetuate vulnerability and dependency of the less favoured or disadvantaged.

18. The movement out of dependency into the complex interdependent world of today should not imply the goal of autarchy, of individualistic isolation. Even when he had unlimited territory into which to expand, man was a social being, needing social interaction with others for the full expression of his humanity. Various societies will by their mores and practices define differing values governing interdependency. Some patterns imply more autonomy for the individual than others do. No matter. The universal task of education is to provide an impetus for a favourable direction away from dependency towards autonomy in an interdependent and finite world: an absolute target of autonomy is not required. At a single point in time and in political space a specification may indeed be given. But a culture-specific or ideology-specific definition need not concern us here.

Education as Life-Long Learning

19. A principal recommendation in the International Commission's Report is the adoption of the concept of life-long education, extended not only in time but also beyond formal schooling into all activities which have a potential to contribute to learning. The implementation of this recommendation will mean linking education more closely to life, to work, to solving community problems. And this linkage is simply the rediscovery of powerful earlier precepts: Plutarch of ancient Greece said "The City is the best teacher;" Pestalozzi (1746-1827) said "Every part of the background, natural or man-made - the home, the school, the community - participates in the educative task."

20. To meet education's challenges after the turning point, to overcome its dead-ends and inequalities, and to link it more intimately with other development efforts, widespread innovation - indeed a veritable mutation - in education is required. This conclusion runs throughout the International Commission's findings. Needed are innovations which explore on a large-scale basis the vectors of change which hold promise of major improvements in equality of opportunity, relevance, and effectiveness to cost. Tinkering with existing highly wasteful systems will not be sufficient. Educational planning at the turning point becomes thus largely the planning and management of large-scale innovation. While this need not mean de-schooling as advocated by some, it will mean structural rearrangements in education. This implies new tasks for educational planning. The subject of change in education has been very usefully mapped and annotated by Huberman, 1973.

III

Planning as Vectors

21. Much of educational planning in the 1960s could be characterized as target planning - that is, the programming of educational activities and flows to meet quantitative levels at specified times in the future within projected resource constraints. One can speculate that given the exigencies developed above, target planning, while still necessary in guiding the allocation of scarce resources in education, may need to be subordinated to what I shall call vector planning. By this term I mean the designing, programming, the diffusing of educational innovations, giving particular attention to the direction of movement likely to result, and making provision for the use of feedback for self-correction.

22. Perhaps a useful analogy to help explain vector planning is the art of aerial navigation. In a flight plan one knows the general orientation - the vector - for his destination, but will depend upon subsequent positional fixes and the changing conditions of wind and weather aloft and en route air traffic in order to correct one's progress along the way. So too in education we need vectors for getting started in the right direction and en route feedback for making course corrections. But this analogy is too simple in that the educational navigator must simultaneously give attention to many vectors at once to make sure, for example, that progress toward diversifying educational offerings doesn't bring with it an unfavourable effect upon student mobility, or upon unit cost. And the analogy is too simple also in that ultimate destinations of educational progress are less known than the general direction in which we want to move.

23. The concept of vector planning is useful because it puts primary emphasis on the direction of change, without presuming yet to specify absolute target levels to be achieved at destination. This is also realistic in view of the uncertainties of predicting specific educational outcomes for particular learners through the employment of particular educational resources. Education is not that much of a science. But it is a quest.

24. A job of planning, then, is to select from among the repertoire of possible arrangements and experimental evidence those programmes which, *prima facie*, offer reasonable prospect of helping to transform education in desirable directions.

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25. As a means of illustrating vector planning, some of the frequently observed orientations of educational reforms consistent with the recommendations of the Report of the International Commission and with the emerging development ethics are listed below. It should be cautioned that the vectors to be selected in a particular case would need to be uniquely tailored to the values and objectives being sought in a society and to a diagnosis of how existing and possible learning arrangements contribute to or impede in the achievement of such values and objectives. The following listing, of necessity, is expressed in highly condensed language.

<u>Vector</u>	<u>Planning Implications</u>
a. Toward lifelong education	- redefine education's system boundaries in time and space, ultimately to include the learning society.
b. Toward diversification of learning opportunities	- revise admission arrangements to encourage multiple entry and re-entry into educational activities. - provide plural offerings in school and out of school to serve a variety of learning wants and styles.
c. Toward mobility of learners from one educational experience to others	- design ladders, bridges, linkages from nonformal education to formal, across disciplines, among courses, from one level to another, inter-region and inter-country.
d. Toward education as an integral part of other development efforts	- identify education ^{and} /training dimensions of development programmes and projects in other sectors. - plan mutual adjustments so that education and other efforts reinforce each other. - stress through education the preparation for performance in the world outside the classroom, not just preparation for more schooling.

Vector

Planning Implications

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| e. Toward equality of educational opportunity | - prepare school maps with view to equalizing spatially the access to relevant education. |
| | - organize "second chance" arrangements to serve drop-outs and push-outs. |
| | - remove obstacles to full participation in education by girls and women. |
| | - identify causes of educational inequality. |
| f. Toward relating the world of work to education | - organize work-study programmes, school-connected apprenticeships, simulations which introduce world of work problems and materials into the curricula. |
| | - co-opt employing establishments, farming cooperatives, etc. to offer education and training activities. |
| g. Toward enhancement of the quality of life, artistic expression and cultural development | - include indigenous creative arts in school and community activities - music, drama, artistic expression. |
| | - encourage students to find and record traditional indigenous folk-lore and art, as was done in preparing the <u>Foxfire Book</u> (1972). |
| h. Toward a scientific point of view | - include simple do-it-yourself science experiments in primary and secondary school curricula. |
| | - teach powers of observation. |
| | - foster drawing of inferences from observations. |
| | - use local environment to understand ecological balance. |

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<u>Vector</u>	<u>Planning Implications</u>
i. Toward solving educational problems by harnessing new technologies and the findings of behavioural sciences	<ul style="list-style-type: none"> - establish cooperation between education and communication media of TV, radio, newspapers. - examine possibilities of self-service education centres in libraries and community centres. - apply the concept of "education as liberation" (see International Commission Report)
j. Toward mobilizing resources not now employed in education	<ul style="list-style-type: none"> - inventory skills and facilities in the community having learning potential. - enlist volunteers as aides, animateurs. - institute systems of student fees and loans so that beneficiary shares in the cost of his education
k. Toward serving the remarkable learning capacity which characterizes the early childhood years	<ul style="list-style-type: none"> - undertake research and development to find feasible combinations of parent education and community efforts. - harness informal education potentials such as TV and radio. - recognize the intimate connection between early childhood education and the further liberation of women
l. Toward democracy in educational content and learning processes	<ul style="list-style-type: none"> - suppress hierarchical distinctions among teachers, between teacher and student - foster participation in educational governance by representatives of education's major stakeholders. - make school attendance voluntary.

Vector

Planning Implications

- m. Toward teaching by inquiry and problem-solving methods
- train teachers in inquiry processes such as the use of convergent and divergent questioning.
 - encourage student to student interaction as distinguished from only student to teacher interaction (see Postman and Weingartner, 1969)
- n. Toward Higher Education's responsibility for leadership in national & community development (see Leys, 1971)
- involve universities in solving development problems.
 - explore national service arrangements by which university students can reimburse the state for part of their educational benefits.
 - link universities with the reform of other levels of education and of nonformal education
- o. Toward education for international understanding
- apply materials developed in Unesco's network of Associated Schools.
 - convene multinational committees to examine curriculum materials for fairness and tolerance.
 - simulate international problem-solving in classroom.
 - encourage international exchanges of students and teachers
- p. Toward international cooperation in solving educational problems
- draw on multilateral agencies for advice and documentation regarding experience in educational innovations.
 - join networks which share information and risks in particular types of educational innovations.
 - participate in regional and international seminars and conferences on education.

26. A number of principles can help guide the application of Vector Planning in the necessary restructuring of educational efforts. A first one is to take a good deal of care in selecting points of entry - those points in the formal and nonformal education system which offer interesting potential for experimentation, where there is a climate of readiness to take risks along one or more desired vectors of change, and where there may be leverage for propagating and diffusing more widely the benefits realized in the innovation.

27. Since points of entry are specific to a given situation, it is hazardous to give illustrations. In one case it may be the wide-spread perception of a need for in-service updating and re-orientation of teachers. In another it may be the beginning of reform of an obsolescent examination system. Again it may be a pioneering effort in a hult education well adapted to certain felt needs. Alternatively it might be experimentation with shorter cycles by which learners can acquire mastery of a set of needed understandings or proficiencies. The point of entry might well be even external to the formal education system for example a staff development programme in an employing establishment - but at the same time have the potential to be usefully linked in a workstudy arrangement to some level of formal schooling.

28. In looking for points of entry, special attention should be given to indigenous micro innovations. These are the too often neglected local departures from conventional educational practice in which a pioneering teacher, principal, district supervisor, or even group of students, is using an approach which offers progress along one or more desirable vectors. Indigenous innovations with learning potential may have developed outside the formal education system - in an employing establishment, in a club or association such as a cooperative.

29. While in nearly all indigenous innovations there is an important ingredient of personal and sometimes charismatic leadership, there are generally other essential elements which can be combined to favour more systematic experimentation and which can facilitate propagation of successful results. The trick is in first having sufficient sensitivity to identify such spontaneous innovations. After identification there is a need to see in what way the mobilization of additional resources would help movement toward desired vectors. The resources to be mobilized are not only those of finances and expertise, but also the organizational resources for the experiment itself and for the subsequent propagation. It is psychologically important for future adopters elsewhere to become involved early in the experiment so as to build a sense of commitment and to start thinking of the modifications which might be required for transfer.

30. Mr. Philip Coombs, in assessing experiments in nonformal education for rural development, says that too often there existed no "contingency plan for success." By this he means that countless educational innovations, even though locally useful, have remained small-scale pilot projects. No one bothered to ask "What if we win - what if the scheme really works?" Propagation elsewhere in the district, region, nation or beyond seldom happens automatically. While there does not need to be a large scale master plan at an early stage, at least there should be contingency planning for the next stage of diffusion.

31. In planning for propagation of successful innovations, careful attention must be given to possible scale changes. These are the discontinuities which might occur in going from pilot operations to substantially larger implementation. If, for example, the pilot operation depends on the free time of people otherwise employed (say community health or agricultural agents), one has to ask about the availability of these resources under larger scale conditions. The same must apply to the joint use of facilities. Often such harnessing of under-employed resources can be arranged for under larger scale operations, but only by means of significantly different political arrangements. These need to be anticipated so that cooptation can evolve naturally to aid the propagation and diffusion process.

32. Included in my definition of vector planning was the provision for feedback. This is in conformity with the cybernetic concept that decision makers and planners can learn experientially when feedback loops have been designed into an operation and when provision has been made for iterative corrections in the light of such feedback. And it must be appreciated that corrections can apply not only to activities themselves, but also to the goal structures which gave rise to the experiment in the first place. In short, vector planning is itself a learning process.

33. In many cases where the vector selected is designed for a long term benefit - say improved international understanding and tolerance - one will have to settle for short-run proxies to measure feedback in the attainment of the longer term objective. Thus in the example cited, one might measure pre and post attitudes reflecting tolerance and intolerance toward members of another local group, and then, with some reason, extrapolate these findings to the longer term vector of international understanding.

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34. A purpose of all planning is to get as far as possible within the area of manoeuvre defined by resource constraints and knowledge constraints, and to explore means of widening this area of manoeuvre. Fortunately, the boundaries of both kinds of constraints in education change with time. Therefore part of the feedback design should be that of learning from probes into the boundaries of resources and of existing knowledge. In the case of resources this might be illustrated by an educational financing arrangement which instituted user fees and scholarships covering part of education previously state-supplied, to see whether in so doing truly additional resources might be harnessed, while still moving toward equity. With respect to probes of the boundary of knowledge, presumably the innovation itself is plowing new ground locally, if not for some other locations; responses and outcomes from such probes should be monitored in the feedback system. But in addition every experiment should try to incorporate probes that would increase the area of manoeuvre for this and other experiments.

35. A final principle to be observed in applying vector planning is to watch for the indirect and side-effects of a programme undertaken for selected vectors upon other desired vectors. Trade-offs and opportunity costs are perhaps the very essence of planning. An excessive pre-occupation with goal-interdependencies could of course stifle decision-making. But it would be hoped that programmes and innovations can be found which offer positive benefits for several desired vectors. A reform of the examination system, for example, might at the same time aid in democratizing education, increasing its environmental relevance, provide incentives for inquiry learning, etc.

36. Space does not permit dealing here with other aspects of the theoretical framework of educational planning after the turning point. Fortunately much that is compatible with the emphasis I place on Vector Planning has been well developed by Hüfner and Van Gendt (1971) in what they term Second Generation Educational Planning.

IV

Planning as Process

37. Up to this point I have dealt primarily with the substance of educational planning after the turning point -- the need to help orient the directions of the quest for a fundamental restructuring of learning arrangements. But the substance cannot stand alone : equally important is the process of planning. As Ralph Waldo Emerson said "What you do speaks so loudly, I cannot hear what you say". Educational planners must be aware of the silent language of their practice. If their style of planning is participatory and openly responsive to learners' wants and concerns as well as to overall constraints, planning can reinforce educational vectors toward democracy and equality of opportunity. If the style is technocratic and hierarchical, that silent message will drown out whatever effort is intended toward favourable vectors.

38. The inquiry into planning as process in education is greatly aided by the work of Huberman, 1973. He identifies three models illustrating how changes take place : the "theory-into-practice" model, which is the rational sequence from discovery through implementation; the "social interaction" model, which emphasizes person-to-person awareness and adoption; and the "problem-solving" model in which the user diagnoses his need and collaborates with others in trials and adoption. All three processes are at work to some degree in any innovation, but one model may need to dominate in fitting local administrative style. It seems likely, however, that the direction of educational reform and of development ethics mentioned earlier will require increasing reliance on the problem-solving model.

39. In The Politics of Expertise (1972) Benveniste has contributed importantly to our understanding of the relationship between planning on the one hand and policy-making and implementation on the other. He disposes of any false innocence the planner may have harboured by demonstrating throughout his book "the planning process is both politics and technique and the role of the planner involves both dimensions." (p.17)

40. Benveniste shows how the process of planning can affect the substance of policy by virtue of the expert altering the expectations of decision-makers. He shows that for planning which can make a difference -- what he calls "intentional planning" to distinguish it from "trivial planning" or "utopian planning", -- planners must work with decision-makers in forming working coalitions of clients, implementers and beneficiaries. This is a start into the broader territory, much of it unknown, of participatory planning.

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41. The Organization for Economic Cooperation and Development (OECD) held a meeting in early 1973 on Participatory Planning in Education, the papers for which began to define and map this very interesting area. Eide (1973) cautioned that centralized and hierarchical decision-making in education is not a favourable precondition for the development of true participatory planning, nor indeed for innovation other than that imposed from above. Yet he shows that even where the pre-conditions for participation are met -- principally some local autonomy -- decision-making power still cannot be a free good and has to be rationed. Eide reminds us that its distribution among groups and individuals is the essence of politics.

42. There is not space here to elaborate adequately on this critically important aspect of educational planning after the turning point. The following two suggestions on participation must, however, be mentioned. The first is derived from a small book of lectures Margaret Mead delivered on the generation gap. In Culture and Commitment (1970) she sees mankind arriving as pioneer-immigrants on the shores of an era made new by the pace of technological advance and by the recent awareness of the finiteness of Planet Earth's resources. But curiously, the young among these pioneers are more familiar with these new shores and with the language used there than the adults, since the young, unlike their parents, have been reared only in a finite and interdependent world of instantaneous communication. Miss Mead's insight that children's prevision is in some respect superior to that of adults reared to values less appropriate to the new era, suggests that educational planners, dealing as they do with helping to design the future, must find a way to involve representatives of the young as well as all of those who have a stake in the educational enterprise.

43. Second, the technique of simulation and gaming would seem to offer potential for both enriching the quality of vector planning and for broadening participation in the process. Simulation is the modeling of a real activity or system, in which one or more players act as independent decision-makers seeking to achieve their objectives in some limiting context. The principles of developing games or simulations and applying them to education and decision-making are well described in Clark Abt's Serious Games (1970). While some game structures are complex and need computers to show the consequences of

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successive rounds of play, what I have in mind are much simpler "manual" games such as were developed in the Ecuador^{1/} project.

44. The features which would appear to recommend the gaming technique to participative vector planning include :

(a) it is a way of experimenting with alternative educational innovations and alternative points of entry under conditions of a changing environment and under various degrees of uncertainty (the latter can be introduced into the game simply by the throw of dice or by spinning a pointer)

(b) The experimentation can be undertaken by either representatives of those involved in educational innovations, or by the real actors themselves, but without the risk of irreversible and costly consequences of real operations

(c) Simulation relaxes the constraint of real time, permitting the playing out of several years of interaction during a few hours of simulation.

(d) As suggested by Benveniste above, the planning job must include the formation of working coalitions of clients, implementers, and beneficiaries, various of whom have both common and competitive interests

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1/ An interesting application of simulation in education in a developing country is to be found in the cooperation between the Ministry of Education in Ecuador and the University of Massachusetts Center for International Education. The project is funded under the auspices of the United States Agency for International Development. (Evans and Hoxeng, 1973)

The Ecuador project was undertaken to explore some of the potential of nonformal education in Ecuador. It was found that nonformal educational materials in the form of games which could be developed by Ecuadorians drew considerable interest and seemed to be effective in increasing participants' understanding of the social and physical environment and how they might exercise some influence over their own development.

An interesting application of simulation techniques in training for cross-cultural work is described by M. Schnapper in "Culture Simulation as a Training Tool" in Focus, International Development Review 1973/1 p. 3-5.

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in relation to vectors and to particular proposed educational innovations.

45. For the foregoing reasons it would appear useful to employ simulation and gaming as a means of developing consensus on desirable vectors of educational change, as a means of identifying interesting options among innovations, as a means of exploring points of entry, and as a means of learning about propagation and implementation of successful local innovations. Because games are participative and have been found to be motivating they could be a way of involving those on whom successful educational innovation will ultimately depend.

Summary

46. The Report of the International Commission for the Development of Education reinforces the advances that are occurring in education and in overall development policy. At this turning point in education, planning must contribute to needed mutation and reform. Vector planning seems likely to supplement target planning as a means of identifying and programming needed reorientations and as a means of helping to learn experientially through feedback.

47. In the new situation the process of planning itself can be as important as the substance. Planners have to accept responsibility for their potential political role; they must help in the formation of coalitions of clients, implementers and beneficiaries (Benveniste, 1972) to adopt and propagate innovations along desirable vectors. Experimentation must include new patterns of participation by representatives of all those who hold a stake in education. Young learners, through a phenomenon described by Margaret Mead (1970), may have uniquely important contributions to make to participatory planning. The technique of simulation may assist in vector planning and in broadening participation in it.

GLOSSARY

1. Educational Innovation : a change in education - in aims, content, structures, and methods - tried out for the first time in a particular environment.
2. Point of Entry : points in the formal and nonformal education system which offer readiness for innovation toward desired vectors and which have potential leverage for diffusion of successful experiments.
3. Simulation : the modeling of a real activity or system in which one or more players act as independent decision-makers seeking to achieve their objectives in some limiting context.
4. Target Planning : programming of activities to meet specified quantitative levels at specified times.
5. Vector Planning : the art of designing educational programmes and innovations oriented toward desired directions of improvement, and incorporating feedback for correcting activities and, if necessary, goal structures.

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