EDUCATIONAL PLANNING, POWER, AND IMPLEMENTATION: THE CONCEPT OF DEGREES OF FREEDOM¹

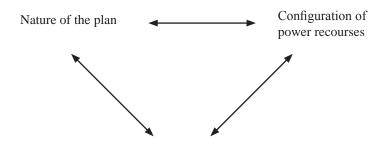
DAN E. INBAR

There is a huge gap between the formulation of a plan and its implication. Often it is intensely difficult to bridge. Implementation is the Achilles' heel of educational planning. Even when a plan is rational, comprehensive, coherent and consistent, its implementation may well be partial, slow and inefficient. And the end result may even be inferior to what would have been expected in the absence of any plan (Waterson, 1965). This article attempts to establish a conceptual frame of reference which might serve as the basis for analysis, resulting in a series of systematic propositions about interconnections between the scope and content of plans, the power required for implementation and the implementation process itself.

The article rests on three basic assumptions about planning. The first is that it is a process. In the words of Dror (1963), a process for preparing a set of decisions on which future action is to be based. Since decisions effectively determine policy (Lasswell & Kaplan, 1965), planning involves the entire process of bringing about a particular course of action, and may be defined as the process consciously oriented toward future change of the present situation.

The second is that planning always implies change. Since it can be viewed as a process of authoritative reallocation of priorities, the opposition of some groups will be inevitable, as long as the decisions inherent in the plans involve changes perceived as affecting vested interests

The third is that social power may be defined as a system's ability to carry out a proposed change. Therefore the process of translating plans into action is conceived as a series of implementing decisions based on the exercise of social power. In other words, the concept social power will be used to provide the link between planning and implementation. The resulting operation concepts will assist in the implementation of the plan, in assessing the institutional capacity for its implementation, and finally in relating these variables to one another. The theoretical frame of reference is expressed in the following diagram:



Implementational Patterns

The arrows are two-way because planning and implementation are perceived as a continuous process, with feedback allowing for constant interplay among the different components. In such a situation the interesting questions, to which this paper is addressed, are: How will power affect, and be affected by, the implementation process? How is the concept of power translated into operational terms? How does the concept of power help increase our understanding of the implementational process?

¹ This article originally appeared in the May, 1975 edition of the journal and is reprinted as part of the celebration of the Society's 40th anniversary year.

PLANNING DEGREES OF FREEDOM

The concept of educational planning can be misleading if distinction is not made between its different forms. It is a generalized concept, which comprises different planning processes, and different tactical aims based on different forms of knowledge, all leading to the differential use of social power.

There is a common denominator underlying a structural reform of the education system, location of school sites, rezoning, curriculum-planning, educational innovation, and the introduction of educational technology. All are included within the provision of educational services and have the same general aim: improved education for the benefit of man and society. However, quite different planning processes are involved. One principal difference is the interrelationship of uncertainty, flexibility, plan-duration and scope.² Different types of plans have different degrees of uncertainty, and such implicit differences in uncertainty will influence plan flexibility. The degree of flexibility *explicitly* introduced into a plan must be proportionate to the degree of uncertainty about future events. The degree of *implicit* flexibility of the plan can be defined as the degree to which its nature and content (i.e., the characteristic of its unique set of decisions) are interrelated, so that reaching a decision determines the direction in which later decisions go.

As such interdependence increases, implicit flexibility determining the implementation process will decrease. We define the degree of explicit flexibility introduced into a plan as the degree to which feedback mechanisms are built into it, enabling choice to be made between alternative courses of decision and action during the implementation process. Obviously, explicit flexibility is limited. And, equally, it is related to the flexibility inherent in the nature of the plan. Consequently, different educational planning exercises imply enforcement through different implementation processes.

We shall distinguish among plans by utilizing the concept of degrees of freedom. A plan's degrees of freedom indicate its implicit possibilities (and their explicit working out) for choice and change of direction in implementation. It follows that the determination of the course of implementation will be a function of the degree of freedom of the plan. The selection of the time span and scope of planning activities is not arbitrary. It depends upon at least three major factors: The first is *volition*, the desire to accomplish certain aims in a determined time. One example would be accomplishing an educational reform in, say, ten years, based on some specific political and social desires. Another example would be increasing compulsory free education from eight to ten years within a desired number of years. The second is *conformity to realistic constraints*. There is the need for certain scope within given time-span boundaries, which are based on the implicit requirement of the plan content, or the natural cycle of the subject matter. For example, the schooling cycle will determine the minimum time-span limits of formal manpower development. Similarly, the learning process, and its evaluations will impose their own limits on the preparation of new tested instruction books. The third is the *ability to actualize objectives and requirements*. This will depend upon the economic and political power of the decision-maker.

The three main characteristics of the concept degrees of freedom might be summarized, then, as follows:

- The more complex the plan's issues, the wider the scope and time-span, the greater the change envisaged, the greater the degree of freedom.
- The more parameters and coefficients are determined (derived from knowledge about inner constraints or from concomitant policy constraints), the more the degree of freedom decreases.

In other words it is possible to define degrees of freedom as the function of the number of determined parameters, ratio-coefficients, and constraints inherent or attached to the plan, relative to the number of components comprising a source of variation. In mathematical presentation:

$$d \times f = f\left(\sum^{n} X_{i} / \sum^{n} Y_{j}\right)$$

$$i=1$$

where: X_i = number of known parameters (the sum of X can be seen as the "state of constraints and knowledge").

 Y_j = number of components (the sum of Y can be seen as the "state of variation").

The concept of degrees of freedom offered here provides a common denominator for educational plans and at the same time reflects their content and scope. It is true that it is difficult empirically to measure the degree of freedom, but the concept enables us to categorize plans according to the range of alternative decisions available during the process of implementation. The concept of degrees of freedom refers more to a characterization of a plan than to a definition of measurement. When proper account is taken of the stage of knowledge embodied in the plan, the range of alternative decisions that can be taken becomes clearer precisely because of the knowledge acquired about the types of choices possible during implementation.

In order to reach basic conclusions about the values to be attached to the degrees of freedom of different plans, we shall describe and illustrate a classificatory model which is based on the distinction between two principal categories of "technological" or "social" plans, and their formal and informal aspects. Obviously, none of the concepts is exclusive; often they are determined simultaneously.

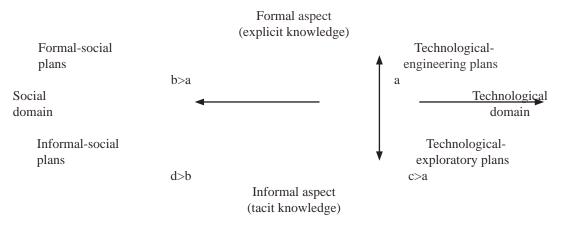
CLASSIFICATIONAL COORDINATES: SOCIAL AND TECHNOLOGICAL, FORMAL AND INFORMAL

The concept "technology" is used in its broadest sense to indicate a rational approach, i.e. it utilizes means to achieve tangible objectives. Plans will be considered technological when they are governed mainly by technological, not behavioristic or social, constraints. In this context, the prepared set of decisions is the product of a logical process, based on scientific laws that derive from the specific subject matter (content) treated in the plan. Such plans will be appraised mainly from the point of view of their technological soundness.³ Technological plans include such items as the construction of educational television or planning the physical plant of schools. Socially-oriented plans differ from technological ones in that they deal with human rather than inanimate "materials." This distinction is often used in discussions on organization. Organizations are viewed as being of two major types: production and service. The latter are "confronted with problems of establishing social relations with the 'object' of their endeavors and of having to motivate them in various ways" (Blau & Scott, 1962, p. 41-42). Thus the plans deal with social reciprocal relations either at an individual or group level.

The second coordinate deals with the formal and informal aspects of the plan's content. The formal aspects may consist of well-formulated sets of decisions which can be translated into operational terms. However, any activity has its informal and unformulated aspect. Furthermore, planning exercises will themselves encourage the creation of informal organizations. The effects of plans on the informal activities are far less predictable than the effects on formal activities. Knowledge is always fragmentary of consequences of social activities so that, in terms of Simon's treatment of the principle of bounded rationality, imagination must supply the lack of experience. "Personal knowledge" or "tacit knowledge" expands the treatment of planning beyond the purely rational limits. As Polanyi (1958) put it, personal knowledge is a mental effort with a heuristic effect, an unconscious process of trial and error through which the way to success is found; a continuous improvement process might be developed without it being specifically known how it was done.

Any system of symbols and operations can be functional only with its informal complementaries which are based on personal characteristics, accumulations of personal experience and proficiency. By definition, 'personal knowledge' is idiosyncratic and therefore difficult to analyze, and to determine its exact place and weight in the process of planning. However, as Dror (1968) has pointed out, the importance of extra-rational processes in either actual or optimal-decision-making and policy-making should not be underestimated.

Combining the four coordinates yields the following classification (through strict maintenance of the plan's scope, an ordinal scale of degrees of freedom can be attached):



where: a, b, c, and d represent values of degrees of freedom; a = relative low degrees of freedom.

Technological-Engineering Plans are of an essentially technological nature, based on past experience and scientific knowledge. There is a relatively high degree of certainty about the various parameters and the relationship between them. The plan's objectives tend to be well defined in operational terms, and in many cases are supported by mathematical models and calculations. The degrees of freedom of such plans are relatively low.

Technological-Exploratory Plans are essentially technological, but based upon further needed research and exploration. Consequently, their future horizon involves relatively high uncertainty, depending upon the degree of scientific exploration. Plans for the creation of new technological research centers, plans to develop new teaching machines, plans for effective utilization of technology in education, are examples of this type.

Formal-Social Category Plans occupy a social domain; basically they connect with the social structure. Their objectives tend to be quite formalized, and often depend upon mathematical and econometric models (Correa, 1969). Manpower plans, based on a mathematical equation linking manpower to various variables, exemplify them. One instance would be Tinbergen's regression equation linking second-and third-level manpower to GNP.⁴ A recent study of skilled-man power-demand projection for an irrigation project in Mexico was based on a regression equation linking the various levels of agricultural-professional manpower to the development of the irrigated area measured by hectares (Haissman, 1970). However, Haissman was dealing with a social-production process, so the uncertainties are relatively high. For example, the problem of forecasting the productivity of labor is a difficult one which has yet to be solved. Future technology changes as well as various social and economic changes might effect the basic assumptions about productivity. Consequently, such uncertainties have to be matched by flexibility explicitly built into the plan. R.G. Hollister, in his evaluation of the Mediterranean Regional Project, remarked, "Educational strategy should be formulated with the uncertainties engendered by technological change clearly in mind" (Hollister, 1966, p. 62).

Other plans in this category are oriented primarily toward the formal aspects of the social system, that is, toward structural reform. An example is the recent educational reform in Israel, where the plan's objective is to change the structure of the educational system from an 8:4 grade structure to a 6:6 structure (Inbar, 1974). In most of such plans the explicit planned changes are quantitative in nature, but they are undoubtedly made with the hope that they will have a qualitative impact.

Informal-Social Plans also occupy a social domain but they connect with its informal structure. Generally they are set out rather vaguely. The effectiveness of new instructional methods or the introduction of new technology depends upon appropriate behavioral changes in its users. Plans for effecting such a behavioral change in teachers' attitudes, or for creating the right conditions for social change to occur, fall in the informal-social category. An increase in the number of teachers, a change in the teacher-pupil ratio

- these are formal objectives. However, the increase depends upon the recruitment of teachers which in turn involves a number of informal-social variables. One, for example, might be that if large numbers of qualified persons are to be attracted into the teaching profession then teachers should be awarded higher status.

An overall development plan with the aim of "nation building" offers an example of a more comprehensive informal-social plan. The objectives of the Tanganyika Five-year Development Plan are (a) to build a sense of national identity, (b) establish a base of consensus among the different nations of a possible future Tanzania, and (c) define the best means of achieving this. The three-year development plan and the five-year plan both reflect a systematic attempt to keep campaign promises concerning independence. However, they cannot be realized without important changes in human behavioral, loyalties, and beliefs (Burke, 1965).

The radio clubs in Niger also exemplify such "nation building". Their general aim was to "cultivate democratic practices in the villages, to create a body of well-trained leaders . . . to contribute to the educational improvement and the culture of radio listeners" (UNESCO IIEP, 1967a, 1967b). In this case, the rather vague general aims of the plan were translated into a unique and well-defined procedure; the plan thereby acquired a much-increased feasibility. However, the relatively high degree of freedom inherent in such informal-social plans is reflected in the flexible organization and management of the radio clubs.

SOCIAL POWER AND IMPLEMENTATION

One can now formulate the main assumption underlying this paper: different plans, according to their differential degrees of freedom, will be translated variously into action, and will require varying degrees and types of social power for their implementation. The power required for implementation will be a function of the plan's degree of freedom.

Or: Power =
$$f$$
 (d.f.)

The concept of power is one of the most fundamental in political science. As Lasswell put it, "The political process is the shaping, distribution, and exercise of power" (1959, p. 75). Here the discussion of social power will be confined to its implications for planning implementation. We shall disregard the moral question of planning change, and the use and legitimization of power. Nor shall we provide a comprehensive analysis of the various conceptions of power developed through history.

The central place of power in the social arena has produced a huge literature on power and its role. Nevertheless, few concepts are more perplexing. Dahl (1957) notes that scientists have not yet formulated a concept of power rigorous enough to be used in systematic study. Russell (1938) treats power as a property which can belong to a person or group. Tawney (1931) defines it mainly as capacity; Parsons (1954) as the realistic capacity of a system-unit to actualize it's interests. Weber (as cited in Gerth & Mills, 1946), from a socio-political angle, treats it as the opportunity to realize actions even against the resistance of others. Lasswell and Kaplan (1965), by emphasizing ability and process, develop definitions which treat power as a special case of the exercise of influence, Bierstedt (1950) and Wolf (1959) view it as the ability, actual or potential, to direct, or influence, forces toward change in a given direction. Cartwright (1959), defining power from a psychological point of view, sees it as the ability to perform acts which activate forces in the life space of others.

All these definitions appear to refer to the same type of social phenomena - the process of influence or control over behavior. Power itself seems to be the predisposition which makes behavioral change possible, the ability to induce acceptance rather than the actual inducement. In terms of plan implementation, for all practical purposes, the relationship between the actual exercise of power (by whatever means) and the differential degrees of effectiveness, is one of the crucial problems in analyzing the process.

Social power is a property of social relationships. From this point of view, Emerson (1962) developed the theory of the power-dependence relationship, and analyzed social relations as a process which commonly entails ties of mutual dependence between the parties. Power interactions imply exchange relationships. As long ago as the 1930s, Harold D. Lasswell wrote that implicit in power is the notion of exchange of goods and services of peoples and communications, and the interaction between political symbols and practices. And later he wrote, more explicitly, "The power relation is give-and-take; or to give a more dynamic twist to the words, it is giving-and-taking. It is cue-giving and cue-taking in a continuing spiral of interaction"

(Lasswell, p.62, p. 10). In a similar vein, Mannheim (1950, p. 49) wrote, "Interaction in power relations is not based on fear alone but on mutual response, which is perhaps the more fundamental and general source of human control". In other words, since we defined power as the ability to *induce* acceptance, and the *amount* of power that creates this ability as the potential amount of resistance to be overcome, it is now possible to express the amount of power needed for implementation as the intensity and type of opposition potentially to be overcome. *That* is to say, the power for implementation is correlated positively to the potential intensity of the opposition to implementation.

Social power, as a property of social relationships, is essentially a reciprocal relationship of exchange of resources. Resources of power might be seen as capacities of a person, group, or organization which can be made available to others for the satisfaction of their needs or the attainment of their goals. From the power-holder's point of view, power resources are the means by which he can increase the probability of acceptance of his policies. Power resources may be tangible or intangible. In spite of the instrumental nature of resources, they will not be treated as though valued for themselves, but rather as means to achieve certain ends, in this context, to ensure plan implementation.

Here we make use of French and Raven's (1959) classification of power bases - reward, coercion, reference, legitimacy and expertise. We shall also use Bennis's (1966) classification of value power in the analysis of eight basic approaches to the use of power which is shown in Figure 1. There are, of course, many other approaches which might have served our purpose. For example, Gross's (1967) analysis of activation mix, Bicanic's (1967) classification of eight disciplinary elements of planning, or Parson's (1969) paradigm of social action.

PATTERNS OF IMPLEMENTATION

None of the power resources is a sufficient condition to ensure the implementation of plans. The resources of social power are not mutually exclusive. Interaction of the resources will tend to function in ways not inherent in their composition. The objective is to configure the power resources in such a way as to match the type of plan and change dealt with under certain conditions, and consequently to increase the probability of success in implementation. The problem is how much, of what resources, and when they are to be used. Therefore an analysis must be made of some basic configurations of resource employment in which different resources dominate. Each configuration will suggest a unique pattern of implementation.

We define patterns of implementation as arrangements of social actions, in a given social space and time, directed at creating the appropriate circumstances to enable the plan to be put into action. Such patterns are based on a relatively uniform series of activities. While there may be variation within the series, so that the implementation pattern differs from the ideal type, some activity characteristics dominating the pattern can be expected. In treating problems of power employment, Mannheim coined the term "social techniques" to refer "to all methods of influencing human behavior so that it fits into the prevailing patterns of social interaction and organization" (1950, p 6).

Institutionalized discipline. Technological-engineering plans imply the interdependence of performance actions with a well-organized course of action. There is need for a defined role network and a developed control system that will ensure coordinated operation. Activation of people along a direct course of action rests implicitly or explicitly on contractual relationships backed by formal sanctions. Essentially, we are dealing with a wide range of institutionalized discipline. Well-formulized plans enable rewards and sanction to be attached to defined actions. To the degree that objectives are clear and operationally defined, it becomes easier to adjust specific rewards and sanctions to each operation (March and Simon, 1958). The use of pure force, the application of (or threat of) physical means are only the extremes of the various methods of coercive compliance. Although coercion is one of the power sources, other resources can be used coercively. Legislation to impose a plan, making its implementation compulsory, is the most common method of achieving desired behavior, as can be seen in educational planning (Inbar, 1973).

Viewing institutionalized discipline from a different angle, we might consider it a means of coping with uncertainty. It reduces uncertainty by minimizing the uncertainties that derive from unpredictable future behavior. Such reduction, however, is directly related to the degree of knowledge about the desired future course of action.

Figure 1. Analysis of eight basic approaches to the use of power

Angle exercise planning power cor Power (Manheim) exercises employment (Etz (Cohen) (Russell) (Cohen) (Grect ody (phy) commands) power) (direct body (phy) power) (direct body (phy) power) (commands) power) (commands) power) (commands) (commands) power) (commands) (comm	Forms of power	Types of	Influential	Means of	Control	Measure of	Types of	Psycholog-
ces (Manheim) exercises employment (Cohen) (Russell) "Domination" "Coercive" "Physical" (direct body power) threat) and commands) power) threat) "Manipulation" (enlightened punishment) (indirect self interest) influence) us indicative "Educative" "Propaganda" (opinion adult influence) education education		lanning	power	control	technique	performance	investment	ical correlates
"Domination" "Cohen) (Russell) "Domination" "Coercive" "Physical" (direct (direct body power) threat) "Manipulation" (enlightened punishment) (indirect self interest) influence) "Educative" "Propaganda" (opinion adult influence) education	_	xercises	employment	(Etzioni)	(Dahl and	(Churchman)	(Ilchman and	(Kelman)
"Domination" "Coercive" "Physical" (direct direct body power) threat) "Manipulation" (enlightened punishment) (indirect self interest) influence) "Educative" "Propaganda" (opinion adult influence)))	Cohen)	(Russell)		Lindblom)		Uphoff)	
(direct (direct body commands) power) threat) "Sanctions" (rewards and influence) self interest) influence) "Educative" "Propaganda" (opinion adult influence) education		oercive"	"Physical"	"Coercive"	"Command"		"Stability"	"Conformity"
commands) power) threat) "Sanctions" (rewards and influence) influence) influence) "Educative" "Propaganda" (opinion adult influence) education education "Gametinest) "Educative" "Propaganda" (opinion adult influence)		(direct	(direct body	(physical	(penalty		(coercion and	(hoping for
"Manipulation" (enlightened punishment) (indirect self interest) influence) influence) "Educative" "Propaganda" "Education adult influence) education "		ower)	threat)	means)	virtue)		(threat)	favorable and
"Manipulation" (enlightened punishment) (indirect self interest) influence) influence) "Educative" "Educative" (opinion adult influence) education	_		"Sanctions"	"Utilitarian"	Unilateral	"Persuasion"		avoiding
"Manipulation" (enlightened punishment) (indirect self interest) influence) influence) influence) *Educative* (opinion adult influence) education education	-		(rewards and	(material	•	(selling the		unfavorable
(indirect self interest) influence) influence) indicative indicative "Educative" (opinion adult influence) education			punishment)	means)	_	plan)		action)
influence) indicative "Educative" "Propaganda" (opinion adult influence) education " "" "" "" "" "" "" "" "" "" "" "" ""		interest)			"Manipulated	"Politics"	\"Legitimacy"	
indicative "Educative" "Propaganda" (opinion adult influence) education "	fluence)				control"	(redistribution	(legitimizing	
indicative "Educative" "Propaganda" (opinion adult influence) education					<u></u>	of power	the use of	
indicative "Educative" "Propaganda" (opinion adult influence)					Reciprocal	structure)	power)	
indicative "Educative" "Propaganda" (opinion adult influence) education			,		(manipulation			"Identifica-
indicative "Educative" "Propaganda" (opinion adult influence) education	<u> </u>				of means other			tion" (based
indicative "Educative" "Propaganda" (opinion adult influence) education "					than		_	uo \
"Educative" "Propaganda" (opinion adult influence) education "				`	command)			attractiveness
"Educative" "Propaganda" (opinion adult influence) education "		indicative						& self-
"Educative" "Propaganda" (opinion adult influence) education		K						satisfaction
adult influence) education	"Eq		"Propaganda"		"Spontaneous	"Mutual		
education		A admlt	(Opinion influence)		Contact (unintended	teaching the		
		education			influence)	plan)		_
				"Normative"			"Solidaritty	"Internal-
				(symbolic			(emotional	ization"
				means)			commitment)	(intrinsic
			,	/	/			l rewards)

Professional authority. The implementation of explorative-technology plans, which depend on a high degree of professionalization for exploring new fields and coping with complicated operations, requires expertise and responsibility. Such professionally responsible decisions are based on the recognition, or acceptance, of the fact that the expert possesses the superior knowledge needed to cope with uncertainties inherent in their domain. In other words professional authority is the base for implemental compliance. This expertise is based on experience, training, knowledge, intuition, creativity, and related attributes. It is characterized by personal or tacit knowledge. The

Figure 1. Analysis of eight basic approaches to the use of power

application of such knowledge is an individual act that cannot be transferred from one person to another by decree.

Manipulative persuasion. Formal-social plans are oriented toward organizational, structural, or quantifiable social changes. They have a definite basis and a clear outline; they have definite objectives, and their implementation guidelines have been determined beforehand. But since we are operating within the social sphere, where the process of plan implementation relies heavily upon continuous application of human judgment, the behavioral changes needed to

match desired structural changes are far less determinable. Consequently, we might expect increasing uncertainties deriving from the low predictability of success in changing complex human behavior. Hence the need to develop in individuals and groups the awareness that their own self-interest is involved in the implementation of the plan. As long as the formulated objects of the plans are taken for granted, other implementation measures are needed in order to follow the predetermined implementation steps. Such implementation measures might be termed manipulative persuasion.

Manipulation essentially is the substitution of judgment in such a manner that those being influenced are not aware that it is happening - at least not while it is taking place. Persuasion is the display of judgment in such a way that those exposed to it have the opportunity to become aware of the potential value of accepting the judgment in place of their own opinion (Gilman, 1962). Manipulative persuasion can be defined as an intentional process of increasing awareness of selective values and sanctions inherent (or implied) in the process of planning, which parallel or overlap the vested interests of those exposed to it and upon whom implementation depends. Undoubtedly, the power configuration of this pattern will consist of all types of power resources, but the dominant ones include authority, the manipulation of goods, services and the flow of information, all of them playing a persuasive role with authority as the regulative balance.

Re-Education. Goals and objectives of informal-social plans are mainly defined in qualitative terms. Since the main concern is with informal and behavioral aspects, implementation is highly affected by attitudes, norms and values. Furthermore, in considering the relationship of internal values to external behavior, the main problem in social planning is to relate changes of behavior to changes of values in order to avoid change which is merely symbolic or ritual (Ashford, 1965). The main component of re-education is participation and involvement. Since educational planning requires the participation of an ever-increasing number of key individuals and organizations (teachers unions, parents, principals, superintendents and students) the plan's re-education framework must be based on the requirements of participation as a necessary condition for implementation.⁵ Usually, the various patterns of implementation can be generated on a continuum from coercion to consensus, with the power variable. The level of degrees of freedom in planning, the configuration of power resources is summarized in Figure 2.

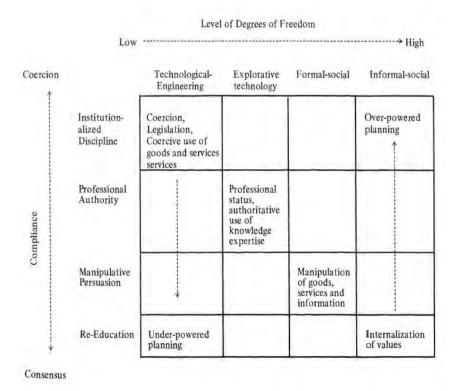


Figure 2. Educational Planning, Degrees of Freedom and Implementation Patterns

It is obvious that there is no *one right way* for the execution of planning exercises. But, equally, there is not unlimited space for maneuvering. The very nature of a plan assumes certain limits to the implementational patterns. Since any planning exercise incorporates all types of domains, knowledge and degrees of formality, the questions which must be answered are "What are the plan's dominant aspects? What is its basic profile?" Furthermore, if the success of the whole planning-implementation process depends upon the realization of all of its parts, then those parts characterized by greater degrees of freedom will tend to be the "critical path" of the whole plan. In this case "critical path" is not mainly determined by time but by levels of uncertainty.

ENDNOTES

¹ D. W. Ewing (1969), points out that, from a psychological point of view, "Probably the most universal difficulty arises from people's fears of planned change ... they resist being changed by other people, e.g., planners". *The Human Side of Planning*. New York: Macmillan Co., p. 44. See also the bearing of educational planning on social tension discussed in our article "The Educational Planning System: Change and Tension", *Futures*, April 1975, pp. 119-128.

² Friedman in his introduction to Vol. XI no. 3, 1959, of the *International Social Science Journal* (pp. 327-329), lists five principles that result from the unalterable basic planning condition of uncertainty about the future: time limitation on projections, the necessity of continuing planning, the use of expectation calculus about the future, the adoption of a framework for planning, and the necessity for careful consideration of flexibility in planning. Future uncertainty is also treated by Herbert Simon (1957), as a major element in his principle of "bounded rationality". See *Models of Man.* New York: John Wiley, pp. 80-83 and also J. G. March and H.A. Simon (1958), *Organization*. New York: John Wiley & Sons, pp. 203-210.

- ³ See for example "The Technical Aspects of Project Appraisal" in J. A. King (1967), *Economic Development Projects and Their Appraisal: Cases and Principles from the Experience of the World Bank*. Baltimore: Johns Hopkins Press, p. 8.
- ⁴ Netherlands Economic Institute (1966). For a manpower plan based on this equation, see *Report* of the Indian Education Commission (1964-66): Education and National Development, (1966). Delhi: Ministry of Education.
- ⁵ See R. W. Smith (1973), "A Theoretical Basis for Participatory Planning," *Policy Science*, 4 (3), 275-296.

REFERENCES

Adams, D., & Bjork, R. M. (1969). *Education in development areas*. New York, NY: David McKay. Ashford, D.E. (1965). *Morocco-Tunisia: Politics and planning*. National Planning Series. Syracuse, NY: Syracuse University Press.

Bennis, G.W. (1966). Changing organizations. New York, NY: McGraw Hill.

Bicanic, R. (1967). Problems of planning, east and west. The Hague, Netherlands: Mouton.

Bierstedt, R. (1950). An analysis of social power. American sociological review, 15(6), 730-738.

Blau, P.M., & Scott, R.W. (1962) Formal organization: A comparative approach. San Francisco, CA: Chandler Publishing.

Burke, F. G. (1965). Tanganyika preplanning. Syracuse, NY: Syracuse University Press.

Cartwright, D. (1959). A field theoretical conception of power. In D. Cartwright (Ed.), *Studies in social power* (Ch. 11). Research Center for Group Dynamics, Institute for Social Research, Ann Arbor, MI: University of Michigan.

Correa, H. (1969). Quantitative methods of educational planning. Scranton, PA: International Textbook.

Dahl, R.A. (1957). The concept of power. Behavioural Science, 2(3), 201-215.

Dror, Y. (1963). The planning process: A facet of design. *International Review of Administrative Science*, 29(1), 46-56.

Dror, Y. (1968). Public policy making re-examined. San Francisco, CA: Chandler Publishing.

Emerson, M.R. (1962). Power-dependence relations. American sociological review, 27, 31-41.

Ewing, D. W. (1969). The human side of planning. New York, NY: Macmillan.

Ewing, D. W. (1975). The educational planning system: Change and tension. Futures, 7(12),119-128.

French, J. R. P., & Raven, B. (1966). The bases of social power. In D. Cartwright (Ed.), *Studies in social power* (pp.150-167). Research Center for Group Dynamics, Institute for Social Research, Ann Arbor, MI: University of Michigan.

Friedman, J. (1959). Introduction. International Social Science Journal, 11(3), 327-329.

Gilman, G. (1962). An inquiry into the nature and use of authority. In M. Haire (Ed.), *Organizational theory in industrial practice*, (pp. 105-142). New York, NY: John Wiley and Sons.

Gross, B.M. Activating national plans. In B.M. Gross (Ed.), *Action under planning: Guidance for economic development* (Ch. 7). New York, NY: McGraw Hill.

Haissman, I. (1970). *Skilled-manpower planning for irrigation projects in developing countries*. (Unpublished doctoral dissertation). University of California, Berkeley, CA.

Hollister, R.G. (1966). A technical evaluation of the first stage of the Mediterranean Regional Project. Paris, France: OECD.

Inbar, D. E. (1973). Organizational patterns of educational planning. *Comparative education*, 9 (2), 73-79.

Inbar, D. E. (1974). *The paradox of feasible planning*. Unpublished manuscript, School of Education, Hebrew University of Jerusalem, Israel.

King, J.A. (1967). Economic development projects and their appraisal: Cases and principles from the experience of the World Bank. Baltimore, MD: Johns Hopkins Press.

Lasswell, H. D. (1959). A study of power. Glencoe, IL: The Free Press.

Lasswell, H. D. (1962). Power and personality. New York, NY: The Viking Press.

Lasswell, H. D., & Kaplan, A. (1965). *Power and society: A framework for political inquiry* (6th ed.). New Haven, CT: Yale University Press.

Manheim, K. (1950). Freedom, power, and democratic planning. London, England: Routledge and Kegan Paul.

March, J. G. & Simon, H.A. (1958). Organization. New York, NY: John Wiley & Sons.

Ministry of Education (1966). *Report of the Indian Education Commission* (1964-66): *Education and National Development*. Delhi, India: Author.

Parsons, T. (1954). Essays in sociological theory, (Rev ed.). Glencoe, IL: The Free Press.

Parsons, T. (1969). Politics and social structure. Glencoe, IL: The Free Press.

Polanyi, M. (1958). Personal knowledge. Chicago: University of Chicago Press.

Russell, B. (1938). Power: A new social analysis. London, England: George Allen & Unwin.

Simon, H. (1957). Models of Man. New York, NY: John Wiley.

Smith, R. W. (1973). A theoretical basis for participatory planning. *Policy science*, 4(3), 275-296.

Tawney, R. H. (1931). Equality. New York, NY: Hartcourt, Brace.

United Nations Educational, Scientific and Cultural Organization International Institute for Educational Planning (UNESCO IIEP) (1967). *New Educational media in action: Case studies for planners, I, II, III.* Paris, France: UNESCO.

United Nations Educational, Scientific and Cultural Organization International Institute for Educational Planning (UNESCO IIEP) (1967). *The new media: Memo to educational planners*. Paris, France: UNESCO.

Waterston, A. (1965). *Development planning: Lessons of experience*. Baltimore, MD: Johns Hopkins Press.

Weber, M. (1946). Part II: Power. From Max Weber: Essays in sociology. H.H. Gerth & C.W. Mills (Eds.). New York, NY: Oxford University Press.

Wolf, D. M. (1959). Power and authority in the family. In D. Cartwright (Ed.), *Studies in social power* (Ch. 7). Research Center for Group Dynamics, Institute for Social Research, Ann Arbor, MI: University of Michigan.