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## FUTURES RESEARCH METHODOLOGIES AND EDUCATION POLICY MAKING

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Future refers to tomorrow, and any time yet to come. We can only understand the meaning of the present after due consideration of the past and future. There is no opposite to 'the present'. Past and future create a dialogue to be interpreted and mediated. This dialogue can be used to inform the present. The process of mediation and change takes place in the present between the reference points from the past and in anticipation of the future. Slaughter (1988:22) extends this argument and states:

It follows to the extent that such mediation becomes increasingly conscious, and motivated by the highest (emancipatory) interest, then we may indeed aspire to an ethic of improvement and human fulfilment. Equally, by adhering uncritically to understandings, ideologies, and commitments of earlier periods and therefore failing to engage in this process, we may miss the chance to counteract the forces that lead to dystopia.

Humans are oriented toward the future and, as Radnitsky (1972) asserts, this implies a primacy of the future over the past.

The primary purpose of this paper is to highlight the need for the development of a longer-term perspective in policy making. The issues and difficulties associated with futures concepts will be briefly overviewed

and then discussed in relation to policy making and the consideration of alternative futures. Issues of epistemology will only receive brief reference though the writer acknowledges that this aspect, particularly in the area of critical futures, is seminal to any policy and futures work. Qualitative and quantitative futures methodologies will be evaluated in relation to their contribution to more informed decision making and planning.

Policy is prospective. It seeks its reward in the future. Policy making uses methodologies which are concerned ultimately with creating particular types of futures. It is therefore unmistakably a futures activity. There is a desperate need for policy makers to realise that, for better or worse, whether intended or not, their actions do contribute to the future and therefore they bear a responsibility in this regard. Many of today's most pressing problems are the long-term results of shortsighted policies or at least policies in which assumptions about the future went unexamined. Futures methodologies are not used to naively predict what will happen in the future but rather to develop our understanding of the possibilities of the future and our understanding of the present. The assumption that futures work is about predicting and forecasting is naive and limited. These are just two components in a process oriented field. It is a field which recognises that change and uncertainty are major constants.

An Overview of the Futures Field

Mannermaa (1986) outlines futures research as trying to identify development factors in the present, and on the basis of this knowledge, investigating what alternative developments are possible in the future and how probable and desirable they are. Future-oriented research makes use of present reality and historical knowledge to consider desirable features worth strengthening, faults or threats worth eliminating, and other (possible and probable) lines of development to be alert to in the future. Present reality is studied in relation to the future.

Futures research has attempted to assist policy makers and planners by developing methodologies that facilitate the identification, analysis and evaluation of alternative future states of a system's environment and the sources of change both internal and external to it. Cornish (1977) discusses the significance of futures research to policy making, below is a summary of his arguments. Studying the future can help in:

1. providing useful frameworks for decision making and planning especially in defining reasonable assumptions about what the future may be like;
2. identifying and timing future dangers and opportunities;
3. suggesting a variety of possible approaches in solving a problem;
4. assessing alternative policies and actions by analysing their possible impact on the future world;
5. enabling people to see the present, by studying the present from a future perspective valuable information can be provided about present reality; and
6. increasing the degree of choice by 'emancipating' people from the false belief that current trends manifest 'destiny'.

One of the primary functions of futures and policy planning is the identification and development of alternative images of the future

depicting longer term changes which may affect education. The capacities for foresight in policy making need to be developed so concerns will be considered and addressed before they become critical. The Australian talent for 'post hoc rationalisation' needs to be turned around so that we become skilled in forward thinking, planning and rationalising. We cannot act retrospectively and passively as in the past. The passive sequence of 'change-perception-adaption' must, at least for some issues, be replaced by a new anticipatory approach outlined by Tugwell (1973) of 'perception-adaption-change'.

Slaughter (1990a) suggests that two of the many reasons why we try to look ahead to the future are prudence and responsibility. Although we cannot know the future in any precise sense, prudence dictates that we prepare for contingencies. Responsibility encourages us to consider the wider context and consequences of our current actions and decisions. Further, through studying possible futures our understanding of the present is enriched and so too is our responsibility to act now. New insights into the present can be generated through past and future perspectives.

Slaughter (1990a) outlines four rationales for the use of futures concepts and methodologies which help to illuminate a response to the question: "Why bother to think ahead when there are so many pressing demands in the here-and-now?"

1. There are major dangers to avoid.
2. Goal-oriented behaviour does need goals. (Educators need to have an idea of what kind of society and future they are working toward).
3. The full effects of present actions and decisions cannot be assessed without thinking about their futures' implications.
4. In a world which is experiencing multidimensional change there is a structural need for futures thinking which transcends the narrower needs of individuals, groups and classes. A shift is needed away from a dominance of reflecting on the past toward the implementation of a range of futures scanning processes.

The reason for studying futures is not to predict futures but rather to explore and present possible development alternatives. It is a myth (which has unfortunately been perpetuated) that futures is centrally concerned with "foretelling the future". The key concept is not prediction but alternatives. Through the use of futures concepts and methods, policy alternatives can be explored and a context created which provides for informed choice. Is there a unique set of futures methodologies? Cornish (1977: 254) suggests an answer when he observes:

Futurists do not know what to call their subject. In fact, they are not even agreed on whether it is a science, an art, a philosophy, or something different from any of them.

Kauffman (1976) allies futuristics very closely to general systems theory. Useful methodologies include, contextual mapping, force analysis, relevance trees, the Delphi technique, the cross impact matrix, trend analysis, and different types of forecasting. These are all legitimate methodologies and when properly used, produce valuable information. They are however, not the unique preserve of those who call themselves futurists.

Issues, Values and Epistemology

The futures field deals with value-laden, uncertain and open-ended problems

and is at odds with subscribing to a single, unified, theoretical base. The point is, that in the writer's opinion, there is no separate identifiable set of futures methodologies. This is, for the most part, a trivial point. The question is whether policy makers dare to seek the information which causes policy decisions to be made to influence the attainment of a desired and perhaps

different future. Inayatullah (1990:127) asserts:

It should not be a surprise that administrators, bureaucrats and executive officers resist alternative futures except when constructed as minor deviations of the present; one might expect a greater openness to alternative futures thinking from groups less consolidated in various power structures.

Alternative futures can be explored not only with more sophisticated techniques but also through attention to issues of epistemology. Questions which need consideration include:

1. What can and cannot be known?
2. If the future can be created to some degree by expectations and self-fulfilling prophecies, who are the belief makers? For example, in constructing the reality of future educational systems, whose reality are we taking into account?
3. And what about the reality of those people who have never been well served by the educational system? (lower socio-economic groups, minorities, creative non-conformists, and people who shun the competitive ethic in an educational system which creates winners by also creating losers.

Issues such as the above can be raised in futures studies which, at times, can stand apart from the present to consider 'how the system works' in a more fundamental way than is possible when dealing with short term problems. Futures studies also involve probing the structural nature of behaviour in social systems. At this level of understanding policy makers can begin to ask not just why things presently happen the way they do, but what are the alternatives? From a critical theory perspective, drawing in part from the work of Habermas, Slaughter (1988) outlines an emancipatory interest in futures studies and the primacy of socio-political questions over technical-instrumental ones. In the pursuit of human autonomy this perspective uses reflexivity to criticise forms of human domination and repression. In order for the researcher to focus on the future one must also 'be alert to the ideological content of futures problems and the interests of dominant social groups' (Slaughter, 1988: 24).

When an element of change is developing the people affected by the change may be simply carried along sometimes unaware of its impact. In this sense people are not involved in the process of change and do not consciously choose the change but simply accept it. The process then continues and reinforces itself. The lack of conscious direction can become part of the change process. It is in the area of choice and direction of change that policy makers have the capacity to intervene.

In the literature referring to futures there is some reference to descriptive and normative forecasting. This distinction is perhaps justified in theory however in practice a line of demarcation proves fairly artificial. No descriptive forecast is value neutral, analysts make normative judgements (often implicit ones) about the choice of techniques

used, the selection of data points from which to extrapolate trends, the choice of variables to take into account, and even the choice of the problem itself. An interpretation does not exist independently of an observer and his or her epistemology. The descriptive analyst also makes value choices in considering alternative propositions posed by other analysts and in testing the sensitivity of results against a range of alternative assumptions. Slaughter's (1988: 10) work on critical futures also supports this view:

In the critical approach we need to recognize that language mediates the interpretation of experience and is constitutive of understanding. It follows that normative statements about what should, or should not be, inevitably reflect the preferences and interests of those who utter them. The possibility of objectivity and value-free knowledge is highly questionable. Similarly Bowers' (1973:328) statement that 'the situation is a function of the person ... (which) makes it impossible ever to completely separate the environment from the person observing it' supports this argument.

#### Planning, Information and Uncertainty

Planning is by its nature future oriented. It is a process of human thought for the future and of action based on that thought. Chadwick (1978) argues planning is optimistic for it assumes that some control over future events is possible. According to Soderberg (cited in Hayman, 1981), planning is carried out in different time perspectives:

1. Operational or technical planning involves a day to day perspective and is not concerned with long-term consequences. Attention is directed toward achieving short term objectives, using existing resources and under existing constraints, and the inevitable short-comings of the situation are accepted.
2. Compound or middle-range planning involves a year by year perspective and thus is more long range in outlook. Policies are operationalised through a statement of objectives. There is some analysis and forecasting of future events and some attempts are made to develop new resources and remove constraints.
3. Complex or philosophical planning is at the broadest policy level. This planning, from Soderberg's perspective is longer range and involves a decade-by-decade approach. This level involves normative planning and is concerned with setting broad norms and standards.

The policy maker will never have the complete information about the future in which to test and evaluate intended policies and plans. Decisions regarding the selection of policy made in the present with the intent of affecting some form of desired outcome in the future must necessarily be made with incomplete information or, at best, partial information. In policy making there is a need for a shift from forecasting accuracy to responsiveness to change. As Slaughter (1990b:162) succinctly states: 'accuracy cannot be sustained in the face of uncertainty'.

In recent years a group of techniques has been developed which the educational policy maker can employ in establishing policy for an organisation. These techniques come under the broad category of futures research methodologies. One purpose of these methodologies is to assist policy makers in reducing the level of uncertainty associated with decision

making and, at the very least, provide them with a systematic and at times rational approach to the development, analysis and the evaluation of those strategies intended to bring about possible future conditions which are beneficial, considered and hopefully desired.

A sense of uncertainty is not new. The policy making process in education is pervaded by an aura of uncertainty that narrows the context of policy interventions considered and that intensifies the perceived risk of implementing a particular set of policies. Futures research is concerned with flexible responses to uncertainty and change.

A study by Leblibici and Salancik (1981) suggested that the uncertainty experienced by a decision maker arises from one's inability to predict the outcomes of some actions taken. The inability to predict decision outcomes is derived from two sources of uncertainty. The first is the decision maker's lack of knowledge enabling one to infer cause-effect relationships. The second source of uncertainty, is the probabilistic conditions in the environment within which the outcomes are to occur. In essence, the more one is able to anticipate the probability of a decision's outcomes, the less uncertainty posed. This is one area in which futures methodologies may assist policy makers in making more informed decisions. In approaching uncertainty Radnitsky (1972:122) states:

Without risk-taking there is no illuminating interpretation of the present situation. This interpretation is necessary precisely because we never stand at the end of history.

Slaughter (1988:22) while asserting that we never stand at the end of history summarises by stating:

... it is crucial to the entire futures enterprise to appreciate that there is simply no neutral standpoint outside history upon which the futurist can stand. Thus, to say anything of substance about the future requires not merely a deep appreciation of history, but also of the inescapability of historicity.

Futures problems are loaded with political and ideological dimensions. Context-free and value-free knowledge appears impossible, meanings cannot be independent of the interpretations of them (Peters, 1974). Researchers in the area of futures need to acknowledge that meanings are dependent on the context and the presuppositions which shape our knowledge and understanding of the world. These inherited and interpreted meanings function to provide the framework in which to reflect upon understanding and to make articulated propositions. Identification of historical patterns is a matter of qualitative rather than quantitative analysis. As Peters (1974:220 cited in Slaughter 1988) states:

The problem ... is not to discard prejudgements in order to arrive at an absolutely objective starting point, but rather to determine what distinguishes legitimate prejudices from (those) which obstruct understanding.

Slaughter (1988) continues the argument and asserts that the observer cannot neutralise oneself and stand apart from what is being studied. Rather that there is a need to work from a reflexive appreciation of one's historicity and to raise the level of one's conscious understanding of it. Forecasting serves a variety of functions in educational planning. Some planning takes the form of quantitative analysis, for example, long range

projections of economic trends. Other types of forecasting call for more exploratory and qualitative analysis of educational requirements, for example, constructing future scenarios of social conditions which could serve as a normative guide to educational policy making.

#### Qualitative and Quantitative Methodologies

Slaughter (1990b) describes a map of the futures field which outlines a broad spectrum ranging from quantitative and analytic work at one end, to more intuitive, qualitative, participatory approaches of visionaries and social innovators at the other. The distinction between quantitative and qualitative methods reflects two basic differences in methodology and data requirements. In practice however the two approaches can be complementary if used as such. Policy problems could be approached by a balanced application of rigorously analysing data on one hand, and unconstrained imagination, intuition and judgement on the other. The simultaneous application of complementary ways of thinking can be found in many fields, not just in futures.

The tension between the dichotomous styles of inquiry can be beneficial if the opposing methods are simultaneously operating in the search for solutions. Hudson and Bruno (1978) reviewed the literature on the dichotomies of approach to scientific investigation and concluded that there was a convergence of similar ideas about such approaches. Two of their major findings are relevant to this paper.

1. The tension between opposing ways of approaching a problem makes it difficult to keep the two sides in balance. It is not an easy dialectic to sustain. One approach usually ends up dominating over another, and special attention is needed to prevent this from happening.

2. Despite the antagonisms between polar ways of understanding reality, each approach needs the other in order to compensate for its own inherent weaknesses and blindspots. The simultaneous use of different methodological perspectives can produce a richer vision of reality than one which is created using one method alone.

Finally they suggest that it probably pays off to maintain the balance between quantitative and qualitative methodologies in the field of educational forecasting. In a more recent study Salomon (1991) argues that the two dichotomous approaches address different issues and yield different kinds of knowledge. He also concludes that quantitative and qualitative approaches complement and enrich each other rather than rule each other out.

Qualitative methods encourage more imaginative modes of thinking about the future than usually permitted within the quantitative frame of reference. Similarly Arthur C. Clarke has pointed out, quantitative based forecasts have failed less from errors of calculation than from "failures of imagination" (Clarke, cited in Toffler, 1972:134). Quantitative methods start with the assumption of continuity between the past and future. This posits an assumption that the same variables which were driving events in the past will continue to do likewise into the future. Yet, the notion of social development revolves around the notion of change in the structure and quality of social processes. Qualitative methods help give the added dimensions to analysis by going beyond the cautious mentality of statistical "number-crunching". This also helps specify the environment

which may affect forecast outcomes.

#### Qualitative Correlation Methods

This class of methodology deals with interrelationships among a variety of factors having a joint affect on future outcomes. Patterns are explained within a system of correlated relationships. Examples of such methods include: precursor analysis, surprise free scenarios and cross impact analysis.

Precursor analysis investigates sequences of events and attempts to discern early warning signs of future events. In education such analysis has its main use in anticipating problems. In business it is analogous to 'leading indicators'.

Scenario construction is essentially a narrative of developments leading to a future state of affairs; a writing of future history. Scenarios can be written in the past tense looking retrospectively at the present from a presumed vantage point of an imagined future. Scenarios may highlight crises to be avoided or a relatively utopian solution to present problems which can only be solved by long range policies. These policies require powerful images to gain appropriate action and commitment in the present. Some educational policies have been designed in response to a specific event or crises. These are then portrayed as a warning of need for better preparedness of the future generation. For example, the launching of Sputnik in 1957 had a major effect on American science education.

Policies can be developed on the basis of making projections from specific events to scenarios of future social needs which in turn outline implications for educational policy priorities. Problems and opportunities are presented by crises, and through leaps of the imagination, major new policy departures occur. This approach assumes a basic discontinuity between the present and future. In contrast another form of scenario building, surprise free projections, begins with the premise of basic continuity in social processes. A single most probable scenario is developed after looking at trends and interactions among such things as politics, material and energy resources, demography, national morale, economic growth and stability, social values, and so on. It is paradoxical however that the most probable scenario is unlikely to ever come about because history does not follow surprise free paths. Therefore there is a need to look at scenario clusters which depart from projected trends.

In cross impact matrices events are arranged in a matrix with a set of probabilities which will enhance or retard the development of an outcome. There are clear advantages in going beyond pure extrapolation in order to examine substantive factors influencing outcomes, particularly in making long term projections. In most cases the methodologies consist of systematically laying out the parts in order to compile evidence and make judgements about the strength and future directions of relationships.

Qualitative analysis serves quantitative analysis in several ways.

Qualitative analysis can help validate (or at first critically evaluate) underlying methods and models used in quantitative analysis. Qualitative methods can be used to take the practical step from numerical analysis to the implications for policy designs. For example, new program options rarely come directly from quantitative analysis but from conceptual explorations before and after the numerical calculations. Qualitative

analysis can be used to shape and define goals prior to quantitative analysis. In general qualitative methods tend to begin with the present and work toward understanding future options. However, goal directed analysis begins with the future and works back toward the present as a result of selecting desirable outcomes which, in turn, guide planning and implementation efforts.

A common feature of most quantitative forecasting methods is the assumption that the past is the best indicator of the future. Patterns of relationships holding true in the past, structured by mathematical models, are taken to hold true when predicted ahead. For example, in forecasting enrolments, future revenues or needs for graduates, basic patterns of relationships are treated as stable over time and subject to a determinable margin of error. Extrapolations or trend analysis, correlations and modelling are examples of such methods. The quantitative forecasting methods can be further subdivided into deterministic and probabilistic methods. Deterministic models provide a set value for the forecast, while probabilistic (stochastic) models describe outcomes in terms of a probability distribution.

Extrapolation is a simplistic forecasting technique and it assumes that whatever happened in the past will continue into the future provided there are no disturbances (Cetron & Monahan, 1968). Statistical extrapolation assumes the future will be like the past. It serves a purpose of replicating or simulating a pattern though its weakness is that it does not explain the behaviour underlying the pattern. This is where qualitative methods have a significant role to play.

Political, not solely technical assumptions underlie even the most sophisticated quantitative analysis (Miles, 1979). Slaughter (1988) cautions on the over use of reductionism in futures work. He highlights the distortion which occurs when concepts of the social reality are taken out of their context and translated into quantifiable terms through the use of systems analysis. Similarly Hoos (1977) has outlined some of the limitations of an overemphasis on reductionist techniques. A major element which she suggests as a problem is the narrow focus on the quantifiable which excludes the human elements including researcher bias.

Quantification should be seen as merely one approach among many. Hudson and Bruno (1978) summarise some of the special features of qualitative analysis by stating that the best measure of such forecasting is not always accuracy, nor consensus, nor the objectivity of the procedure. A measure of good qualitative forecasting involves a confrontation of rival hypotheses about the future. Even the selection of methodology contains its own unique set of assumptions about the problem of investigation and the questions to be answered. Whether it be a qualitative or quantitative methodology both examine the world differently and the results are derived from within the boundaries of two separate approaches. The results should not be judged from a vantage point outside the approach. The differing approaches need to be seen as complementing each other because they both employ different strategies and ask different questions. A basic role of such methods is to get people to examine underlying assumptions and to illuminate the scope of policy options needed to deal with long range outcomes beyond the horizons of normal decision

making. The keys to creating future oriented policy are not found exclusively in the realm of techniques but rather in a range of processes and attitudes.

#### Conclusion

Techniques of social science can only be as good as their user. The validity and fruitfulness of the outlined techniques for use in policy making depend on the checks and balances between the tendencies toward rigorous but narrow techniques on one hand and the imaginative but sometimes careless speculation about alternative futures on the other. Returning to an earlier point, the dialectic between quantitative and qualitative methodologies is one way to help sustain both rigour and imagination in forecasting while accommodating inherent weaknesses in each of those two approaches. The integration of quantitative rigour and qualitative sensitivity is an important task confronting policy makers and futures researchers. Unfortunately Western culture has not promoted much thinking about the long range future. Our education system, until recent years, has not encouraged much thinking about the future. Schools teach history but not future histories. They teach philosophy which is a discipline derived from ages past. Social Sciences are taught but rarely in the context of projecting reality far beyond the present. Art is almost never used as a means of creating clearer images of alternative futures. In sum, futures methodologies already exist, and are being used, but not in the context of extension to the longer term process of exploring alternative futures and their policy implications. It is a future-oriented attitude that needs to be developed, not a particular set of techniques.

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