January 2006

Why does policy fail? understanding the problems of policy implementation in Pakistan - a neuro-cognitive perspective

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Recommended Citation

POLICY STUDIES

Why Does Policy Fail? Understanding the Problems of Policy Implementation in Pakistan – a Neuro-cognitive Perspective

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Abstract: *Education policy in Pakistan, as in other developing countries, faces the challenge of poor implementation. The article explores the history of education policy in Pakistan and describes the conventional accounts of policy failures. It particularly highlights the issues of unclear goals, political commitment, governance, centralisation, resources and foreign aid. Generally, it is assumed that overcoming these conventional challenges will result in better policy outcomes. Although this is partially true, Spillane, Reiser and Reimer (2002) direct our attention to the cognitive factors that play a critical role in policy implementation. They argued that implementing agents try to make sense of policy provisions before acting on them. This article extends their views to emphasise that a more deepened understanding the process of sense-making requires incorporation of insights from the neuro-cognitive sciences. Based on the neuro-cognitive understanding of learning that is developed in this article, some cognitive constraints on learning and sense-making are proposed. It is argued that both conventional and neuro-cognitive constraints need to be optimally satisfied to avoid serious policy failures.*

Introduction

Since its inception, more than half a century ago, the government of Pakistan has been trying to improve its educational profile. According to Economic Survey 2000-2001 Government of Pakistan and UNICEF, the present adult literacy rate in Pakistan is 49% (male 61.3%; female 36.8%); gross primary school enrolment ratio for male and female is 84 and 62 respectively; and gross secondary school enrolment ratio for male and female is 29 and 19 respectively. Several commissions, national conferences and official policies have made proposals to redress the ongoing shortcomings of the education sector. However, most of these policy initiatives have failed to achieve their desired objectives. The objectives that were set out some 30 years ago still seem unattainable in the near future. This article seeks to investigate the reasons for such poor policy outcomes. In doing so, the author traces the history of education policy making and implementation in Pakistan to explore the reasons for policy failures. The article proposes that in addition to the assessment of conventional reasons for policy failures, policy makers must also consider the constraints posed by human cognition and behavioural change. Since policy aims to bring about behavioural change at local and

more specifically at individual level it is required that the cognitive dimension should also be understood and considered for improving policy implementation. The article goes further and suggests that to determine the constraints on human learning and resultant behavioural change we need to seek help from the neurological sciences which deal directly with the working of brain and learning. In the light of this understanding, the article identifies some policy constraints and proposes that for better policy outcomes, policy makers should formulate policies that better address these constraints in addition to aiming at overcoming more conventional factors.

History of Education Policy Making in Pakistan

In Pakistan the task of policy making and planning in all spheres of development including education is mostly carried out by the Planning Commission (PC), which has been responsible for developing five-year development plans since its inception in the 1950s. Since the first five year plan 1955-60 the PC has produced eight five year development plans so far including: the second plan (1960-65); the third plan (1965-70); the fourth (1970-75)[1]; the fifth (1978-83); the sixth (1983-88); the seventh (1988-93) and the eighth (1993-98) (Pakistan. National Planning Board, 1957; Pakistan. Planning Commission, 1960, 1970, 1983, 1994, 1998; Qureshi, 1965). Although the ninth plan was to be launched in 1998, it was not prepared mainly due to regional political and economic instability. In 2001 the government announced a three-year (2001-04) 'poverty reduction strategy', which was prepared mainly to foster economic development (see Pakistan. Policy Wing, Finance Division, Poverty Reduction Cell, & Planning Commission, 2001).

It is interesting to note that besides each five year plan there have been parallel education policies particularly focusing on educational improvement[2]. These policies have mainly been prepared by the Ministry of Education (MoE). The first such policy effort was the establishment of a Commission on National Education in 1959 to make recommendations for an educational system appropriate for the needs and values of Pakistani citizens (Pakistan. Ministry of Education, 1959). Since then subsequent governments have introduced education policies during their tenures viz. the New Education Policy, 1979; the Education Policy 1972-80; the National Education Policy and Implementation Programme, 1979; the National Education Policy, 1992; and the National Education Policy: Iqra, 1998-2010. Recently there have been some policies that have complemented the existing education policy, namely: the Education Sector Reforms: Action Plan 2001-2004; the National Plan of Action on Education for All, 2001-2015; and the Report of the Task Force on Higher Education in Pakistan: Challenges and Opportunities (see Pakistan. Ministry of Education, 1970, 1972, 1979, 1992, 1998, 2002a, 2003).

The key elements that drive education policy in Pakistan are the attainment of overall literacy including adult literacy; universal primary education for school age children;

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[1]Although the plan was prepared for 1970-75, the government could only manage to work out yearly plans until 1978. The reason for this was troublesome political situation as a result of which the East Pakistan (current Bangladesh) separated from West Pakistan (current Pakistan). 1970-78 is therefore considered as non-plan period.

[2] The five-year plans mainly focus on economic growth of the country. In that perspective plans consider education as an essential part of providing human resources for a healthy and progressive economy. On the other hand, education policies appear to have treated education as a matter that, while it may have implications for economic growth, is primarily considered as an essential factor in the social development. Hence, there is a sharp difference between the focuses of the five-year plans and education policies.

improvement in school completion rates and reduction in student dropouts; improving quality, equity and access of education. However, most of the policies, plans and programmes so far have failed, to varying degrees, to fully achieve their desired objectives. The targets that should have been achieved within twenty years of formulating the first five-year plans in 1955 have not been attained yet. For example the goal of achieving universal primary education by 1967 is one that still looks unattainable in the near future (Ahsan, 2003, pp. 260-61; Haq & Haq, 1998, pp. 15, 55; Staff reporter, 2004).

The continuing failure to achieve different aspects of educational improvement has caused concern among educationists. Recently the Aga Khan University Institute for Educational Development, Karachi (AKU-IED) organised a series of *Policy Dialogues on Key Issues in Education*, among which the policy making process was a central issue. The participants of the dialogues from government, non-governmental organisations (NGOs) and the private sector concluded that the process of policy making in Pakistan was unclear and that it was likely that this contributed to policy failure (Aga Khan University Institute for Educational Development & Department for International Development, 2003, p. i). This observation calls for an analysis of the reasons for failures of policy.

This article summarises the conventional accounts of policy failures in Pakistan and then adds a neuro-cognitive dimension to understand the reasons for poor policy implementation. It is argued that because policy provisions intend to bring change in individuals' practices, it is important for policy makers to know how individuals' learn and change their behaviour. This understanding helps us identify the cognitive constraints on human learning and sense making. Hence, a policy that takes account of both conventional and cognitive constraints on implementation stands a better chance of producing desirable outcomes. Throughout the discussion the examples from Pakistani policy contexts will be used in support of the arguments put forward in this writing. It would be useful that before exploring the reasons for policy failures, a brief overview of the policy implementation literature is considered so as to place our understanding in the broader field.

Policy Implementation

Policy implementation is generally held to be the step that follows policy formulation and is viewed as 'the process of carrying out a basic policy decision' (Sabatier & Mazmanian, 1983, p. 143). Bhola (2004) suggests that policy implementation is a process 'to actualise, apply and utilize it [policy] in the world of practice' (p. 296). Similarly, Hope (2002, p. 40) sees implementation as a process of 'transforming educational policy into practice'.

There is a debate among scholars, so far unresolved, about whether policy making and policy implementation should be considered as distinct steps, with the latter following the former, or both being part of the policy making process. The synoptic[3] view of policy emphasises distinct phases of policy development, proposing that policy is first formulated by experts and elected public officials, and then executed by administrative officials (Sabatier & Mazmanian, 1983, p. 146). This view is often more prevalent in government bureaucracy as it promotes the view that policy making is usually done painstakingly by legislators and than fails at implementation because of the issues related to bureaucracy. The contrary anti-

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[3] 'the pure synoptic cluster was marked by identification with systems analysis as a metatheory, statistical empiricism as methodology, and optimisation of values as a decision criterion' (Garson, 1981, p. 538).

synoptic[4] view however emphasises that there is no clear distinction between policy formulation and implementation, as real policy is formulated not only at the legislative or judiciary level, but continues to be reformulated at the administrative level (Lindblom, 1980, pp. 64-70; Trowler, 1998); and also at school level (Hope, 2002). Fitz, Halpin and Power (1994, p. 66) also concluded, while reviewing implementation research, that 'formulation' and 'implementation' cannot easily be distinguished in education policy. Therefore, it might be useful to separate policy and implementation as different theoretical constructs for purposes of analysis, however, the distinction becomes blurred in actual practice.

Thus synoptic approaches do not adequately address these problematic of policy implementation, particularly the reality that implementation is an extension of policy formulation (Bunker, 1975, p. 174), and that there is lack of agreement on what actually constitutes implementation (Fitz et al., 1994) or formulation. Due to these complexities of policy development, commentators on the history of education policy analysis, such as Boyd (1988), consider the effects of education policy making as '… something less than an unqualified success' (p. 501). Failure to implement properly is the reason most cited for policy failure, and this is generally attributed to the inability of policy makers to formulate clear policy outcomes, inadequate governance mechanisms, and the failure of implementing agents because of limited capacity and vested interests (Spillane, Reiser, & Reimer, 2002, pp. 390-391).

Likewise, the failure of educational policy in developing countries is largely attributed to the issues of poor implementation; for example Singh and Rajakutty (1998) report the failure of a mass literacy programme in India, which was seriously affected due to improper implementation. Pakistan is no exception to this; there have been many occasions when educational programmes failed to be properly implemented and to achieve desired objectives. Some examples are the failure of such mega projects as the Social Action Programme (SAP I & II), the Sindh Primary Education Development Project (SPEDP), the Girls Primary Education Development Project I & II (GPEDP), the Primary Education Curriculum Reform Project (PECRP) etc. (Mustafa, 2004; SPDC, 1997, pp. vii-xii). Many teacher education programmes carried out by the government were found not to correspond with the stated goals of policy, and thus compromised the impact that such education policies could otherwise had had (Aga Khan University Institute for Educational Development & Department for International Development, 2003, p. 3). Various five-year plans have also acknowledged that on most occasions the policies fail at implementation level. The fourth five-year plan (1970-75) raises the criticism, particularly referring to education, that often 'the priority accorded to education in the drafting of plans, however, has not always been reflected in the implementation of plans' (Pakistan. Planning Commission, 1970, p. 143). This inconsistency results in plans failing to meet their desired objectives.

The problem of implementation of education policy in Pakistan strengthens the views expressed in previous paragraphs that policy making extends beyond its formulation, and this may help to explain many of the problems of implementation. In addition Wildavsky (1975, pp. 257-260) suggests that since policy is made on the basis of our present knowledge

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[4] 'the pure anti-synoptic cluster was marked by identification with pluralism as a metatheory, contextual and case analysis as methodology, and social rationality (integration of interests) as a decision criterion' (Garson, 1981, p. 538).

of an uncertain future, it is bound to fall short in some or many aspects depending on the accuracy of our knowledge and estimated predictions.

It seems appropriate now to look at the more conventional accounts that have been put forward to explain the reasons for policy failures in Pakistan.

Conventional Accounts of Policy Failures In Pakistan

Unclear or Ambitious Policy Goals

It has been observed that most policies and plans are inefficient in learning from past experiences. As a result they often devise ambitious targets which ultimately fall short of their desired outcomes (Ahsan, 2003; The World Bank, 1999). One of the main reasons for such a situation is the absence of reliable data for educational planning in Pakistan. It is very often the case that even official documents carry discrepancies. Ahsan (2003) has shown that great variation exists among many official and semi-official sources, including such basic educational statistics as the percentage of literacy. Tsang (1988) strongly suggested that there is a dire need in developing countries to strengthen the informational base to improve policy frameworks. Recently the government of Pakistan has acknowledged that there is a discrepancy in educational statistics and has provided assurances that it will be addressed (Jamil & Qureshi, 2002, p. 8). The lack of reliable data hampers policy makers' ability to devise clear policy goals with well defined implementation plans and evaluation mechanisms, and as Wildavsky (1975) suggests lack of reliable present knowledge results in poor policy outcomes.

Political Commitment

The problem related to politics and politicians sits at the root of the problems of implementation in Pakistan. Literature on implementation highlights the importance of political commitment by leadership as critical to policy success (Sabatier & Mazmanian, 1983, pp. 158-59). Sri Lankan reform experience suggests that successful implementation crucially depends on the consistent support of top political and bureaucratic leadership (Cummings, Gunawardena, & Williams, 1992, pp. 15-16). Citing the example of civil service reform in Swaziland, McCourt (2003) noticed that the lack of 'political commitment' of government was the principal reason for failure of reform programmes. In the case of Pakistan there have been many instances where governments have failed to provide the political support needed for implementing and sustaining policy initiatives. Each new government has discontinued most programmes of its predecessors soon after assuming power, for example, a literacy project titled *Nai Roshni* (new light) was launched in 1987 and was discontinued in 1989 with the change of government (Ahsan, 2003, p. 264). Other mass literacy programmes have also failed due to low political commitment both at federal and local levels (Akhtar, 2004, p. 176).

Ideally elected representatives are expected to improve mass education in their constituencies by facilitating proper implementation of education development programmes. Instead they indulge in rewarding their favourites by posting teachers to their desired locations, and allocating lucrative contracts to acquaintance. These predominantly feudal tendencies among the majority of elected representatives hinder educational improvement (Haq & Haq, 1998, p. 54). Parliamentarians are also unsure of their tenure, due to continuous political instability; hence many are mainly preoccupied with strengthening

their chances of getting re-elected. For these reasons parliamentarians use their political patronage ineffectively which causes serious harm to the goals of development projects such as the Social Action Programme (SPDC, 1997, p. xii). This lack of political will and sustained lack of interest amongst political leadership largely leaves the task of mass literacy to the civil services which has also been unable to improve the situation so far (Ahsan, 2003, p. 266).

Governance Structure

The issues of ineffective governance and corruption, particularly among politicians and civil servants, have also been described as a major obstacle to proper policy implementation in Pakistan (World Bank. Country Department I South Asia Region, 1997, p. 12). One of the major reasons for the ineffectiveness of governance is lack of coordination and trust among political representatives and government officials, and also the lack of cooperation among different government departments (Aga Khan University Institute for Educational Development & Department for International Development, 2003, p. 5; The World Bank, 1999). In the case of SAP, the lack of trust among finance and education departments has caused a shortage of finances for the project, which has seriously affected the envisaged outcomes (World Bank. Human Development Sector Unit, 2003, p. 16). This observation indicates towards the issues that are related to the joint action of multiple actors, and its inherent problems. The Sri Lankan experience suggests that a reform that involves fewer government agencies would experience more cooperation, and stand a better chance of successful implementation (Cummings et al., 1992, p. 16). The lack of cooperation among different organs of government and their mutual disrespect create several 'clearance points' that hamper the overall organisation and implementation of policy (Pressman & Wildavsky, 1973; Sabatier & Mazmanian, 1983, pp. 155-6). Eventually due to distrust among different agencies and due to the tendency of civil services to resist change, the policy is implemented only symbolically (Firestone & Corbett, 1988, p. 513).

This helps to explain the reasons for the ineffectiveness of such recognised policies as community participation in education in Pakistan. Under the SAP the public schools were required to organise parent-teacher associations with school managing powers. However, because many such associations were created hastily without proper training, the envisaged benefits to the schools did not materialise. Many community members were also hand-picked by head teachers, and this severely curtailed the effectiveness of community participation (SPDC, 1997, p. xii). Currently, under the devolved district system, the tension between provincial and district governments due to lack of role clarity has caused serious difficulty for authorities under the new political system (Aga Khan University Institute for Educational Development & Department for International Development, 2003, p. 5).

Lack of proper accountability mechanisms, excessive transfers and corruption are also mentioned as serious governance issues which affect proper implementation of development programmes (SPDC, 1997; The World Bank, 1999). Developing countries in general are criticised for their high level of corruption in the machinery of government, and Pakistan is no exception. According to World Bank research, Pakistan falls well below average on key governance indicators including corruption (Stern, 2001, p. 91). Frequent transfers of officials among education bureaucracies further aggravate the issue, for example the average tenure of an education secretary in Pakistan prior to May 2000 was 8 months at the federal level, which led Stern (2001, p. 105) to conclude that 'as soon as a reform program begins to take shape –which almost inevitably threatens the interests of some entrenched and powerful group– the secretary is dismissed and the reform once again loses momentum'.

Centralisation

One of the recurring criticisms of educational planning in Pakistan is its orientation towards centralisation. Usually the policies and plans are developed in the capital with little or controlled consultation with concerned stakeholders, particularly teachers and head teachers. Due to this centralisation, education policy often fails to capture the subtleties of educational initiatives at grassroots level, and therefore appears alien to the educational managers who have to implement the policy (Ahsan, 2003, p. 276; Memon & Wheeler, 2000, pp. 3-4; also SPDC, 1997, pp. x-xi). The distance of policy makers from practice not only causes problems for educational managers, but also creates a lack of harmony among different elements of the same policy, and among the different units of the machinery of education, such as curriculum development, assessment, teacher education and educational management (Aga Khan University Institute for Educational Development & Department for International Development, 2003, pp. 3, 12). Thailand's experience of primary education improvement suggests that involving those who are most affected by policy during the planning phase is strongly related to successful implementation (Wheeler, Stephen and Pasigna, 1989, pp.20-22).

Resources

Both financial and technical resources along with quality human resources are key factors that contribute to the proper implementation of any policy, particularly if a policy requires the creation of new structures and the hiring of new personnel (Sabatier & Mazmanian, 1983, pp. 156-7). Since 1950s there has been a rising trend in educational expenditure among developing countries, perhaps due to a perceived positive link between education and economic growth (Edwards, 1980, pp. 189-90; Simmons, 1980, pp. 27-31). The trend of public expenditure on education in Pakistan has also been growing since the *Fifth Five Year Plan* (1978-83), however this still does not seem sufficient to address the current situation, which is dismal compared to other developing countries (Haq & Haq, 1998, pp 51-52; Kardar, 1998, pp. 46-48). Low education funding is thus considered a major obstacle in realising the implementation targets of education policy in Pakistan. Furthermore, there is a gap between allocated and actual expenditures on education, as the education budget is allocated on an estimated rate of economic growth, and a shortfall in that estimation results in a reduction in actual expenditure (Ahsan, 2003, p. 271; Haq & Haq, 1998, p. 51). Although the resources allocated to education are meagre, it is interesting to note that on many occasions even the allocated amount to education is not fully utilised within the plan period, and the achievement of desired results against the spent amount are not encouraging either. The sixth (1983-88) and seventh (1988-93) five-year plans utilised more than the allocated resources. The sixth-plan allocated Rupees 750 million and the seventh-plan allocated Rupees 300 million; against this allocation, the sixth-plan actually utilised 107%, while seventh-plan utilised 240%. However the achievements in terms of numbers of targeted beneficiaries over actual beneficiaries were only 5.3% and 9.4% respectively (Ahsan, 2003, p. 266).

This observation raises the question of the effective management of resources. According to Kardar (1998, pp. 56-58) Pakistan spends, compared to other developing countries, almost twice as much on one student place in primary and secondary education. This highlights the problems of improper utilisation and waste which raises the amount of expenditure to educate a child. Wary of the same negative tendencies, and compounded by soaring debt burdens and low economic performance, Akhtar (2004, p. 189) speculates that 'government will once again fail to meet these ambitious targets' set out in National Education Policy 1998-2010.

Just as an estimated economic growth rate is required for allocation of resources for education, a modest population growth rate is required to estimate the beneficiaries of education allocation. With 2.9% annual population growth, Pakistan has the highest rate of growth in South Asia. The 1998 census conducted in Pakistan shows that the total population of the country is approximately 131 million. Although education indicators show an increase in absolute terms, they become less significant when compared with increased population.

Foreign Aid

A unique problem of education policy in developing countries like Pakistan is their dependence on foreign aid and loans to bridge the budget deficit and finance their development plans. As of 30th June 2000 the total public debt of the government of Pakistan stood at around US$ 38 billion, out of which 56% is foreign debt mainly owed to the World Bank and IMF (Hassan, 2001). Hence a large portion of its budget (about 56% in year 2000-2001) goes to debt servicing each year, which requires further borrowing. As a result, the country is snared in the debt trap, with a high degree of dependence on lenders. Financial dependence increases the political pressures that the lending agency or banks can exert on Pakistan and there have been instances when the development loans were clearly linked with some reform package (Haque, 2004). The marks of such pressures are visible in many recent policies. For example, instead of working out a ninth five-year development plan, the government introduced a three-year *Poverty Reduction Strategy*, which mainly focuses on economic revival, good governance, poverty alleviation and devolution, where education is considered a tool for poverty alleviation (Ahsan, 2003, p. 270). This appears to be closely in line with the current focus of the IMF and World Bank (see World Bank, 2000). In another instance, the recently introduced higher education reforms appear to be influenced by the report of the *International Task Force on Higher Education*, which was prepared under the auspices of the World Bank and UNESCO (see Pakistan. Ministry of Education, 2002b; The Task Force on Higher Education and Society, 2000). Likewise after a comparative analysis of education policies of four African countries viz. Ethiopia, Mozambique, Namibia and Zambia Takala (1998) concluded that these countries' education policies are significantly influenced by the World Bank agenda and Jomtien conference recommendations. Such influences hamper the government's efforts to develop its policies and plans free of external interference, and push for short term measures to fulfil the immediate requirements of lenders rather than concerted policies and plans to maximise the effects of meagre resources in line with domestic development priorities (Ali, 2005).

The discussion so far clearly shows that many of the developing countries generally and Pakistan particularly have been facing implementation problems for most of their policy history in education development.

Time and again the failure of policy implementation has been attributed to some or all of the earlier mentioned conventional factors. It is surprising to note that even after recognising these factors and their supposed incorporation into subsequent policies, there have not been any significant improvements in policy outcomes. This situation invites us to seriously revisit the factors that affect policy implementation and which have been overlooked by the mainstream policy literature. Hence the next section will introduce a cognitive explanation of the implementation process, followed by a deeper neuro-cognitive understanding of learning. In this regard roles of language, values and context in learning will also be discussed. This discussion will help us determine the cognitive constraints on human learning and sense-making in light of advanced neuro-cognitive understanding. It will be

argued that implementation of policies can be improved by addressing the cognitive factors along with conventional factors during the policy development process.

Cognitive Account of Policy Implementation

Spillane, Reiser and Reimer (2002, pp. 387-389) point out that mainstream implementation literature largely ignores the cognitive elements that play significant roles in policy implementation. Policy always faces the difficulty of 'local implementation' because it requires certain alterations in existing practices (also Timperly & Robinson, 1997, p. 335). Contrary to our general assumptions, local implementing agents do not simply act on policy provisions like docile bodies; rather, they interpret the policy and try to work out the practical demands that the policy puts on them before actually acting on it. Interpretation and understanding of policy provisions is a cognitive process, in which cognition precedes action and therefore the '…implementing agents must first understand what it is that the directive is asking them to do' before acting upon it (Spillane et al, 2002, p. 389). The actions of implementing agents depend significantly on their 'sense-making' of policy, which is 'not a simple decoding of the policy message; in general, the process of comprehension is an active process of interpretation that draws on the individual's rich knowledge base of understanding, beliefs, and attitudes' (p. 391). In the process of sense-making they 'not only construct 'mental maps' but also determine practices and behaviours' (Surel, 2000, p. 498). Hence, in addition to the conventional accounts of implementation failures we must also explore the sense-making processes of implementing agents and their implications for policy implementation. Understanding the cognitive processes that take place in an individual's mind are important as it is acknowledged that 'reform is local and ultimately controlled by individual teachers in the classroom' (Huffman, Thomas, & Lawrenz, 2003, p. 384).

To extend Spillane et. al.'s (2002) work this article tries to understand the process of sense-making by drawing upon the literature on neuro-cognitive sciences. The reason for doing so is to unpack the physical processes of learning that take place in our brains and to understand how individuals', or more appropriately individuals' minds, actually learn (for a discussion on relationship of brain and mind see Clark, 1998). Exploring the physical basis of learning would also expose the constraints that affect the human learning and sense-making processes. Exposure of these neuro-cognitive constraints will further enrich our understanding of the sense-making process, which in turn has implications for the policy implementation process as argued earlier by Spillane et al. (2002). The careful consideration of both conventional and neuro-cognitive constraints and their incorporation in policy development will lead towards better policy outcomes that would be more attuned to human learning constraints.

The Neuro-Cognitive Understanding of Learning

The classical perspective considered brain as separate from mind; it was thought of as a 'mind-producing engine' which processes information (Clark, 1998, p. 1). Thus sensory inputs are received as input to the brain, which processes such information and produces perception and action as an output (p. 1). The early logical empiricist view considered sensory observation as the prime source of knowledge. Since the inner cognition and working of the human brain could not be observed directly, logical explanations were devised to prove the irrelevance of mind for an explanation of behaviour. The behaviour of individuals was explained in three phases: input, process and output. It was argued that

processing (P) as an internal state is a function of input (I), and output (O) is also a function of internal state (or processing). Hence if P = f (I); and O = f (P) then O = f (I). In this way the need for an understanding of the internal workings of mind was avoided. However, the later versions of the classical cognitive perspective came to recognise the importance of understanding the function of mind and its processing, and on this view mind was then considered to be a processor of sententially or symbolically coded information, whereby the mind applies several rules already stored in its database to produce an output (Evers & Lakomski, 2000, pp. 8-11).

Under this model of mind, knowledge was considered to reside in the human head in sentential mode. Rationality was considered as set of rules for manipulating input statements (Bereiter, 2000; Evers & Lakomski, 2000); and 'cognitive acts are construed as the set of transformations that connect these inputs to their associated outputs' (Evers, 2000, p. 210). It was agreed that brain was only the 'physical medium of cognition' and all that matters are the 'information-processing strategies' that are taken up by mind. This was a reason why disciplines of inquiry, such as neuroscience, for example, were not considered important in understanding human intelligence (Clark, 1998, p. 1). However, this approach has faced myriad challenges which have prevented the scientists and the engineers working in the field of Artificial Intelligence (AI) from satisfactorily emulating human cognitive behaviour (Bereiter, 2000, pp. 227-229).

Another major problem with such a conception of mind relates to the representation of knowledge of practice. If all that mind understands is language-like structures, how can such sentences be transformed into practice and how can reasoning in the mind lead to behaviour (Evers, 1990). The traditional view (called 'sense-think-act' cycle by roboticists) is now considered to be not true to the facts as it does not correspond to the natural and biological evolution of the human mind. Instead of distinct action in the cognitive cycle, the perceptual and action systems work jointly in the context of tasks to produce 'adaptive success' (Clark, 1998, pp. 2-3).

The 1980s saw the transformation of the field of AI with the emergence of computational models based on 'connectionist' or 'neural network' or 'parallel distributed processing' models of intelligence and cognition. Artificial neural networks (ANNs) are models of brain function which are better informed by the biological architecture of the brain. The research on mind and learning based on ANNs tells us that our brain is a vast confederation of interconnected neural networks. The basic units of the brain are neurons, which are linked in parallel by masses of wiring and junctions (axons and synapses). The neural networks are processing devices which process and pass information to neighbouring networks in the form of massively parallel patterns. Neural networks are also connected together with an array of different weights. The variation of weights between neural nets determines the plasticity of human behaviour (this is the reason why there is diversity in the behaviours of different humans). Based on the weights of neural nets, perceptions and responses to different stimuli and situations vary in different individuals (Clark, 1998, pp. 54-6; Evers, 1990, pp. 69-70).

How does learning occur, how is knowledge represented, and how are decisions made in such a system of neural networks? The system learns by 'adjusting the between-unit [neural networks] weights according to a systematic procedure or algorithm' (Clark, 1997, p. 56). One such procedure is known as the 'backpropagation algorithm' which can be described as a 'gradient-descent learning method'; in this method 'the system is pushed down the slope of

decreasing error until it can go no further' (pp. 56-57). At this point the network is considered to have learned, and started producing refined outputs, thus the problem is solved (for a detailed description see Clark, 1997, pp.56-7; Evers & Lakomski, 2000, pp. 14-17). Put simply, the network learns through feedback from experience in meeting a goal or target (Bereiter, 2000, pp. 232-233; Evers & Lakomski, 2000, p. 27).

It is clear from this discussion that our brain is not a logical processor of information, which stores rules to manipulate incoming sensory data. Where then does knowledge reside? Our knowledge does not reside at one point, rather it is distributed throughout the system of neural networks. It is the vast network of connections and their connecting weights that jointly represent our knowledge. This knowledge, however, can be offloaded to an external environment to reduce the cognitive burden of brain, for example to computer databases, notebooks or other storage media that can be recalled for future manipulation (Hutchins, 1995; Robinson, 2002).

This neuro-cognitive account informed by our advanced scientific knowledge suggests that there is a physical basis of knowledge as represented in the neural networks of brains. The mind is not a sentence-crunching machine, but rather a pattern recogniser and does not necessarily distinguish between theoretical and practical knowledge, or in other words, 'knowing that' and 'knowing how'. Hence, all 'knowing that' is 'knowing how'. The mind/brain learns through adjusting the weights between neural networks; and by minimising the gap between 'feedforward expectation and feedback from experience' (Evers & Lakomski, 2000, pp. 29-31). The brain retains the knowledge of theory and knowledge of skills in the form of particular neuronal network pattern of connections. A change in knowledge requires change in these networks and their connection weights. The networks and weights require substantial time and multiple episodes of trial and error to adjust to the new learning (Allix, 2003; Clark, 1998; Evers & Lakomski, 2000).

At this juncture it is also useful to understand the role of language, values and context in human cognition as they play significant roles in the sense-making process. This understanding will help us determine additional constraints on the learning and sense-making process, which will have implications for policy implementation as language, values and contexts are key elements for any policy framework.

Role of Language in Learning

Language serves a very crucial part in making joint and extended cognition possible. Language acts as a surface representation of the complex brain process; it serves as a compression algorithm which condenses vast information into symbolic expressions. Damasio and Damasio (1992, pp. 63-71) suggest that language serves the purpose of cognitive economy by 'pulling together many concepts under one symbol'. However, the language is represented in the brain like any other entity; the brain stores concepts which are mediated through different neural networks to produce either words or sentences. Language makes collective cognition possible through sharing and triggering thoughts in others. It also helps in triggering a more abstract brain thought process and monitors the 'output of trained up networks against normative standards' (Robinson, 2002, p. 790). More importantly language also serves as a medium of passing on collective memory of a culture to the next generation. In addition language makes knowledge available publicly which can be scrutinised and be acted upon by anyone. In this way people can at least learn an interpreted version of knowledge without necessarily experiencing it first hand (Allix, 2003).

Role of Values in Learning

It is also important to note that knowledge is value-laden and therefore the attempts of synoptic policy scientists to achieve value neutrality are futile. The biological concept of self assumes feelings and emotions as an integral part of cognition and reason. These feelings and emotions help individuals to make sense of the world and to develop unique perceptions[5] (Damasio, 1994a, 1994b; LeDoux, 1994). Since there is no valid division between theoretical and factual knowledge, all knowledge is value-laden based on our cognitive emotions and feelings. Value claims therefore enjoy the same empirical worth as factual claims, and 'they are learnt in much the same way, from infancy onwards, via a process of conjecture and refutation mediated by holistic considerations of theoretical virtue' (Evers & Lakomski, 1991, p. 205). Hence, our values can also shift when we are introduced with further knowledge, which shape our perceptions and subsequent action. After all, we do only those things that conform to our unique sense of righteousness and well-being, hence our actions are dependant on our values (For a discussion on how to choose among certain values based on the criteria of super-empirical virtues see Churchland, 1989, pp. 139-151; Evers & Lakomski, 1991).

Role of Context in Learning

Clark (1997, pp. 59-63; 1998, pp. 5-6) highlights the need to consider mind as extended cognitive system or 'wideware' that extends beyond the body to the environment. This is to account for usage of external items of cognitive support like calculators, computers and notebooks etc.; and also to play a functional role through joint action or mutually adaptive cognitive systems. Thus humans are capable of not only utilising bodily machinery to create and preserve knowledge, but also are good at scaffolding their knowledge through and into external structures by which knowledge is offloaded to reduce cognitive load. In this way humans are 'distributed cognitive engines' who can recall external sources and collaborate with the external world to perform computational tasks. Context is an integral part of cognition and sense-making.

Cognitive Constraints on Learning and Sense-Making & Suggestions for Better Policy

The discussion leading to this section suggests that failures of policy implementation cannot simply be explained through conventional policy constraints. Although they are important, we need to go beyond these and look towards cognitive constraints, because the success of implementation ultimately depends on the way people perceive, make sense and act on policy provisions. It was argued that to understand the sense making process we need to understand the working of brain, how it learns, and how it produces outcomes (or action). Therefore, we discussed the brain's learning processes along with roles of language, values and context in learning process. It is appropriate now to develop understanding of neuro-cognitive constraints on policy implementation with the proposition that by addressing these constraints along with

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[5] Damasio (1994a, 1994b) considers that emotion and reason cannot be separated. He referred to the split between the two as 'Descartes' error', who is considered as the most influential philosopher behind the separation of reason with emotion and facts with values.

conventional constraints we will be able to address the implementation issues in a better way and can expect a more successful policy outcome as a result.

Problems are Solved through Repetitive Trial and Error

Neuro-cognitive understanding suggests that learning is a process of creating new neuronic connections and strengthening the links (or weights) between connections. The development of connections takes time; these connections adjust and are strengthened through repetitive experience and feedback from experience. Policy development needs to be cognizant of this learning constraint and allow spaces for repetitive trial and error. Lakomski (1995) highlights an interesting matter regarding common resistance of employees during any change process. She argues that human mental structures are the main cause of resistance to change. Organisational members may resist change absolutely un-intentionally as a result of the sheer weights of their developed mental models (Spillane et al., 2002). This is an enlightening understanding which is of great significance to policy-makers. It also invites for reconceptualisation of the notion of resistance to change. Traditionally it is considered that a transformational leader can overcome the resistance of members by inspiring and motivating them. Our new understanding however, suggests that this strategy for educational reform may not be able to work as mental models do not change through verbal inputs. The neuronal nets need experience of the changed situation, and need time to develop different configurations. Hence, it should be acknowledged at policy level that learning new ways of doing things requires time, and several episodes of trial and error, before being fully adjusted to the envisioned state of affairs. From policy implementation perspective, a policy that allows for learning from experience, provides mechanisms for in-built feedback and accepts errors as an essential ingredient stands a better chance of achieving improved outcomes. Borrowing from Argyris and Schon (1984), a policy framework that ensures single-loop, double-loop and deutero-learning, or learning how to learn, would be able to overcome implementation challenges more effectively (for a detailed understanding on organisational learning see Chris Argyris, 1990, 1992; Chris Argyris & Schon, 1996).

Cognition is Value-laden

The theory of the value-ladedness of cognition highlights the fact that agents only act on those policies that match or reconcile easily with their existing value structure. For radical changes, the value structures need to be addressed appropriately. Policy cannot remain neutral, therefore rationalists' attempts to seek value-neutrality does not appear to be in conformity with the neural net account of cognition as discussed earlier. Policies, therefore, cannot be formulated neutrally; they all have value stances preferring some alternatives to the others. They are the products of negotiation and bargaining among different interest groups (Braybrooke & Lindblom, 1963; Lindblom, 1959, 1965).

Because of the centrality of values, those who are most directly affected by problems need to be most directly involved in the search for solutions to their problems (Allix, 2003). Humans construct value judgements about the perception of a particular problem. Hence to change the value structure they need to experience the change process more directly. Much learning happens in an implicit form, however, this implicit learning becomes very significant in overcoming the so-called 'implementation gap' through not only informing people how to change, but in providing them the opportunity to experience the change.

Learning is Situated and Collaborative

As discussed earlier, learning is context bound and ideally it should occur in the environment where it is to be applied. Alternatively, a simulated version of the context is

necessary (Allix, 2003). Many of the educational development projects in developing countries fail due to a lack of appreciation of this very fact. Often, teacher development programmes require teachers to receive training at a place removed from their context, and with different teaching resources. The result is half-hearted learning and no significant improvement in their teaching practices when they return to the context. It should also be noted that due to the situatedness of learning, the straight-jacket approach towards policy solutions will not work, as people will tailor-make their own learning based on their unique contextual features. Hence, a better policy needs to accommodate such implementation variations in practice.

Learning and knowledge are also distributed across social organisational and institutional systems; therefore decision making concerning any policy solutions should also be distributed (Lakomski, 1995). Allix (2003) adds that learning best occurs collaboratively due to the socially distributed nature of knowledge. The collaboration of stakeholders in solving policy issues helps agents not only to reach a more workable solution but also increase the acceptance of policy outcomes. Such collaboration will positively impact on reducing the policy implementation gap, as it provides the opportunity for agents to develop their sense-making closer to policy intentions.

Sentential or Written Policies cannot Simply Change Behaviour

Humans change their behaviour in light of experience; this change in behaviour is also referred to as 'learning' (Levitan & Kaczmarek, 1991, p. 395). The importance of experience for learning suggests that mere policy statements cannot result in behavioural changes, rather policy provisions may trigger some actions based on agents' sense-making which may not be close to the intended policy. As discussed earlier, change in behaviour requires development of new connections and several episodes of trial and error. Expecting a sudden shift in practices at local level by mere policy statements is a mistaken policy view. We have also seen that language (verbal or written) is a surface representation of deep mental processes (Robinson, 2002), which cannot itself produce actions, rather it helps in triggering some mental processes and facilitates joint cognition. Therefore, policy statements should not be seen as the agents of change, rather they help in facilitating a process which may or may not produce the intended outcome.

Hence, a better policy would encourage more practical learning and flexibility of policy outcomes in light of that experience. This understanding also suggests that the general distinction between policy formation and implementation cannot be sustained. The problems of implementation have their roots in formulation.

Conclusion

The article tries to understand the reasons for poor policy outcome generally in developing countries and more particularly in the context of Pakistan. In doing so, it reviewed the implementation literature that diagnoses the reasons for policy failures in Pakistan. Several conventional factors are considered responsible for policy failures, for example: clarity of policy goals, political commitment of leadership, governance structures, centralisation, resource constraints, and influence of donors. In addition, it has been increasingly realised that educational reform is a local process and policy often faces the problem of local implementation (Huffman et al., 2003; Timperley & Robinson, 1997). Hence it is equally important for us to understand how agents perceive policy and act on it. Spillane, Reiser and Reimer (2002) argue that before acting, agents make sense of policy signals. The more this

sense-making is aligned with the policy intention the more the policy would achieve envisaged outcomes. The article extends this argument and highlights the importance of the neuro-cognitive perspective in determining the neuro-cognitive constraints on learning. The neuro-cognitive perspective highlights that there is no clear distinction between 'knowing that' and 'knowing how', knowledge is represented as neuronic connections in our brain and weights between these connections. The roles of language, values, and context in relation to learning were also discussed. Based on neuro-cognitive understanding four learning constraints in relation to policy are developed: a) problems are solved through repetitive trial and error; b) cognition is value-laden; iii) learning is situated and value-laden; and iv) sentential policies cannot simply change behaviour. It is suggested that together the conventional constraints and neuro-cognitive constraints present a holistic set of constraints on policy implementation. Following Timperley and Robinson's (1997) model of policy-making as problem-solving or constraint satisfaction process, we can propose that a better policy would be the one that optimally satisfied this composite set of constraints which will help policy makers to reduce incidents of implementation failures.

References

Aga Khan University Institute for Educational Development, & Department for International Development (2003) *Policy Dialogues on Key Issues in Education*. Karachi.

Ahsan, M. (2003) An analytical review of Pakistan's educational policies and plans. *Research Papers in Education*, 18(3), 259-280.

Akhtar, S. (2004) An econometric evaluation of Pakistan's National Education Policy 1998-2010. *Journal of Educational Planning and Administration*, 18(2), 175-197.

Ali, S. (2005) The influence of globalisation on the national education policies of underdeveloped countries. *Journal of Educational Research*, 8(1), 14-21.

Allix, N. M. (2003) Epistemology and knowledge management concepts and practices. *Journal of Knowledge Management Practice*, 4(2).

Argyris, C. (1990) *Overcoming Organizational Defenses: Facilitating organizational learning*. Sydney: Allyn and Bacon.

Argyris, C. (1992) *On Organizational Learning*. Oxford: Blackwell Publishers.

Argyris, C., & Schon, D. (1984) *Organizations: cases, issues, concepts*: Harper and Row.

Argyris, C., & Schon, D. A. (1996) *Organizational Learning II: Theory, method, and practice*. Sydney: Addison-Wesley Publishing Company.

Bereiter, C. (2000) Keeping the brain in mind. *Australian Journal of Education*, 44(3), 226-239.

Bhola, H. S. (2004) Policy implementation: planning and actualization. *Journal of Educational Planning and Administration*, 18(3), 295-312.

Boyd, W. L. (1988) Policy analysis, educational policy, and management: Through a glass darkly? In N. J. Boyan (Ed.), *Handbook of Research on Educational Administration: A project of the American Educational Research Association* (pp. 501-522). New York: Longman.

Braybrooke, D., & Lindblom, C. E. (1963) *A Strategy of Decision: Policy evaluation as a social process*. New York: The Free Press.

Bunker, D. R. (1975) Policy sciences perspectives on implementation processes. In A. P. Johnston & J. F. McNamara (Eds.), *Planning Perspectives for Education* (pp. 174-183). New York: MSS Information Corporation.

Churchland, P. M. (1989) *A Neurocomputational Perspective*. Massachusetts: The MIT Press.

Clark, A. (1997) *Being there: putting brain, body, and world together again*. MA: Cambridge: The MIT Press.

Clark, A. (1998) Where brain, body, and world collide. Daedalus, 127(2), 1-11.

Cummings, W. K., Gunawardena, G. B., & Williams, J. H. (1992) *The Implementation of Management Reforms: the case of Sri Lanka* (No. 11): Basic Research and implementation in Developing Education Systems (BRIDGES).

Damasio, A. R. (1994a) Descartes' error and the future of human life. *Scientific American, 271*(4), 116.

Damasio, A. R. (1994b) *Descartes' Error: emotion, reason, and the human brain*. New York: A Grosset / Putnam Book.

Damasio, A. R., & Damasio, H. (1992) Brain and language. *Scientific American*, 267(3), 63-71.

Edwards, E. O. (1980) Investment in education in developing nations: policy responses when private and social signals conflict. In J. Simmons (Ed.), *The Education Dilemma: policy issues for developing countries in the 1980s* (pp. 189-198). New York: Pergamon.

Evers, C. W. (1990) Educating the brain. *Educational Philosophy and Theory*, 22(2), 65-80.

Evers, C. W. (2000) Connectionist modelling and education. *Australian Journal of Education, 44*(3), 209-225.

Evers, C. W., & Lakomski, G. (1991) *Knowing Educational Administration: contemporary methodological controversies in educational administration research.* Sydney: Pergamon.

Evers, C. W., & Lakomski, G. (2000) *Doing Educational Administration: a theory of administrative practice*. Oxford: Pergamon.

Firestone, W. A., & Corbett, H. D. (1988) Planned organizational change. In N. J. Boyan (Ed.), *Handbook of Research on Educational Administration: A project of the American Educational Research Association* (pp. 321-340). New York: Longman.

Fitz, J., Halpin, D., & Power, S. (1994) Implementation research and education policy: practice and prospects. *British Journal of Educational Studies*, 42(1), 53-69.

Garson, G. D. (1981) From policy science to policy analysis: A quarter century of progress? *Policy Studies Journal*, 9(4), 535-544.

Haq, M., & Haq, K. (1998) *Human Development in South Asia 1998*. Karachi: Oxford University Press.

Haque, I. (2004, 28 October) World Bank links aid with reforms. *Daily Dawn*.

Hassan, T. (2001, 5 & 12 May) Reflections on transition to *Riba*-free financial system. *Business Recorder*.

Hope, W. C. (2002) Implementing educational policy: some considerations for principals. *The Clearing House*, 76(1), 40-43.

Huffman, D., Thomas, K., & Lawrenz, F. (2003) Relationship between professional development, teachers' instructional practices, and the achievement of students in science and mathematics. *School Science and Mathematics, 103*(8), 378-386.

Hutchins, E. (1995) How a cockpit remembers its speeds. *Cognitive Science*, 19, 265-288.

Jamil, B. R., & Qureshi, T. M. (2002) *Policy Dialogue on Decentralization*. Paper presented at the Research and Policy Dialogues on Key Issues in Education: Decentralisation in Education, Karachi.

Kardar, S. (1998) The economics of education. In P. Hoodbhoy (Ed.), *Education and the State: fifty years of Pakistan*. Karachi: Oxford.

Lakomski, G. (1995) Leadership and learning: From transformational leadership to organisational learning. *Leading & Managing, 1*(3), 211-225.

LeDoux, J. E. (1994) Emotion, memory and the brain. *Scientific American, 270*(6), 32-39.

Levitan, I. B., & Kaczmarek, L. K. (1991) *The Neuron: cell and molecular biology*. Oxford: Oxford University Press.

Lindblom, C. E. (1959) The Science of "muddling through". *Public Administration Review*, *19*(2), 79-88.

Lindblom, C. E. (1965) *The Intelligence of Democracy: Decision Making through Mutual Adjustment*. New York: Collier-Macmillan Ltd.

Lindblom, C. E. (1980) *The Policy-making Process* (2nd ed.). Sydney: Prentice-Hall.

McCourt, W. (2003) Political commitment to reform: civil service reform in Swaziland. *World Development, 31*(6), 1015-1031.

Memon, M., & Wheeler, A. E. (2000, January 4-8, 2000) *Improving Schools through Educational Leadership Programmes in Pakistan*. Paper presented at the 13th International Congress for School Effectiveness and Improvement: Global Networking for Quality Education, Hong Kong.

Mustafa, S. (2004, 21 November) Learning something from past mistakes. *Daily Dawn*.

Pakistan. Ministry of Education (1959) *Report of the Commission on National Education*. Karachi: Ministry of Education, Government of Pakistan.

Pakistan. Ministry of Education (1970) *The New Education Policy of the Government of Pakistan*. Islamabad: Government of Pakistan.

Pakistan. Ministry of Education (1972) *The Education Policy 1972-1980*. Islamabad: Government of Pakistan.

Pakistan. Ministry of Education (1979) *National Education Policy and Implementation Programme*. Islamabad: Government of Pakistan.

Pakistan. Ministry of Education (1992) *National Education Policy 1992*. Islamabad: Government of Pakistan.

Pakistan. Ministry of Education (1998) *National Education Policy: Iqra 1998-2010,*. Islamabad: Government of Pakistan.

Pakistan. Ministry of Education (2002a) *Education Sector Reforms: Action Plan 2001 - 2004*. Islamabad: Government of Pakistan.

Pakistan. Ministry of Education (2002b) *Task Force on the Improvement of Higher Education in Pakistan: Challenges and Opportunities*. Islamabad: Ministry of Education, Government of Pakistan.

Pakistan. Ministry of Education (2003) *National Plan of Action on Education for All (2001-2015) Pakistan*. Islamabad: Government of Pakistan.

Pakistan. National Planning Board (1957) *The First Five Year Plan 1955-60* (Policy document). Karachi: Government of Pakistan.

Pakistan. Planning Commission (1960) *The Second Five Year Plan (1960-65)* (Plan). Karachi: Government of Pakistan.

Pakistan. Planning Commission (1970) *The Fourth Five Year Plan 1970-75* (Policy document). Karachi: Government of Pakistan.

Pakistan. Planning Commission (1983) *The Sixth Five Year Plan 1983-88* (Plan). Islamabad: Government of Pakistan.

Pakistan. Planning Commission (1994) *Eighth Five Year Plan (1993-98)* (Plan). Islamabad: Government of Pakistan.

Pakistan. Planning Commission (1998) *Seventh Five Year Plan 1988-93 & Perspective Plan 1988-2003.* Unpublished manuscript, Islamabad.

Pakistan. Policy Wing, Finance Division, Poverty Reduction Cell, & Planning Commission (2001) *Interim Poverty Reduction Strategy Paper (I-PRSP)*. Islamabad: Government of Pakistan.

Pressman, J. L., & Wildavsky, A. (1973) *Implementation*. Berkeley: University of California Press.

Qureshi, M. L. (1965) An analysis of Pakistan's third Five Year Plan. In A. I. Qureshi (Ed.), *The Third Five Year Plan and Other Papers* (pp. 36-40). Peshawar: The Pakistan Economic Association and Ferozsons Ltd.

Robinson, V. M. J. (2002) Organizational learning: Organizational problem solving and models of mind. In K. Leithwood & P. Hallinger (Eds.), *Second International Handbook of Educational Leadership and Administration* (pp. 775-812). Dordecht: Kluwer Academic Publishers.

Sabatier, P. A., & Mazmanian, D. A. (1983) Policy implementation. In S. S. Nagel (Ed.), *Encyclopedia of Policy Studies* (pp. 143-169). New York: Marcel Dekker.

Simmons, J. (Ed.). (1980) *The Education Dilemma: Policy Issues for Developing Countries in the 1980s*. Sydney: Pergamon Press.

Singh, S. K., & Rajakutty, S. (1998) Implementation of education policy in India: the case of Operation Blackboard Scheme in Madhya Pradesh. *Journal of Educational Planning and Administration*, 12(2), 155-172.

SPDC. (1997) *Review of Social Action Program* (Summary report). Karachi: Social Policy Development Centre.

Spillane, J. P., Reiser, B. J., & Reimer, T. (2002) Policy implementation and cognition: reframing and refocusing implementation research. *Review of Educational Research*, 72(3), 387-431.

Staff reporter. (2004, 06 December) UNICEF says Pakistan lags education targets. *Reuters.*

Stern, N. (2001, March 29) *Investing in Education and Institutions: the path to growth and poverty reduction in Pakistan*. Paper presented at the National Workshop on Pakistan's Poverty Reduction Programme, Islamabad.

Surel, Y. (2000) The role of cognitive and normative frames in policy-making. *Journal of European Public Policy*, 7(4), 495-512.

Takala, T. (1998) Making educational policy under influence of external assistance and national politics - a comparative analysis of the education sector policy documents of Ethiopia, Mozambique, Namibia and Zambia. *International Journal of Educational Development*, 18(4), 319-335.

The Task Force on Higher Education and Society (2000) *Higher Education in Developing Countries: Peril and Promise*. Washington: World Bank The United Nations Educational, Scientific and Cultural Organization (UNESCO).

The World Bank (1999) *Implementation Completion Report (Core ICR) on a credit in the amount of US$112.5 million to the Islamic Republic of Pakistan for a Sindh Primary Education Development Program (IDA Credit 2102-PAK)* (unpublished): Education Sector Unit south Asia Region.

Timperley, H. S., & Robinson, V. M. J. (1997) The problem of policy implementation: the case of performance appraisal. *School Leadership & Management*, 17(3), 333-345.

Trowler, P. (1998) *Education Policy: A Policy Sociology Approach*. East Sussex: Gildredge Press.

Tsang, M. C. (1988) *Cost analysis for educational policymaking: a review of cost studies in education in developing countries* (No. 3): Basic Research and implementation in Developing Education Systems (BRIDGES).

Wheeler, C. W., Raudenbush, S., & Pasigna, A. (1989) *Policy initiatives to improve primary school quality in Thailand: an essay on implementation, constraints, and opportunities for education improvement* (No. 5): Basic Research and implementation in Developing Education Systems (BRIDGES).

Wildavsky, A. (1975) If planning is everything, maybe it's nothing. In A. P. Johnston & J. F. McNamara (Eds.), *Planning Perspectives for Education* (pp. 267-287). New York: MSS Information Corporation.

World Bank. (2000) *World Development Report 2000/2001: attacking poverty*. New York: World Bank.

World Bank. Country Department I South Asia Region. (1997) *Pakistan: recent developments, policy issues, and agenda for change* (No. 19013). Islamabad: World Bank, Country Department I South Asia Region.

World Bank. Human Development Sector Unit. (2003) *Implementation Completion Report on a Credit in the Amount of US$250 million to the Islamic Republic of Pakistan for a Second Social Action Program Project* (No. 26216). South Asia region: World Bank.

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