



Taylor & Francis
Taylor & Francis Group

Researching the Implementation of Educational Policy: A Backward Mapping Approach

Author(s): Caroline Dyer

Reviewed work(s):

Source: *Comparative Education*, Vol. 35, No. 1 (Mar., 1999), pp. 45-61

Published by: [Taylor & Francis, Ltd.](#)

Stable URL: <http://www.jstor.org/stable/3099466>

Accessed: 16/10/2012 12:56

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at

<http://www.jstor.org/page/info/about/policies/terms.jsp>

JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org.



Taylor & Francis, Ltd. is collaborating with JSTOR to digitize, preserve and extend access to *Comparative Education*.

<http://www.jstor.org>



Researching the Implementation of Educational Policy: a backward mapping approach

CAROLINE DYER

ABSTRACT *Misjudging the ease of policy implementation is recognised as one of the most common planning mistakes. If implementation is not planned and structured, effective management of change may give way to ad hoc adjustments and short-term strategies for coping, with a subsequent dilution of policy efficiency. Developing countries can ill afford the wasted resources that result, but little research attention has been directed at providing information about implementation processes that policy makers can draw on. This article discusses a model of 'backward mapping' that was applied in India, and generated a variety of useful insights which have contributed to learning for policy. In contexts where comparatively little is known about the implementation process, the use of such models to generate this kind of learning can improve our understandings of the 'black box' of implementation, and open up new options for policy strategies to achieve policy goals.*

Introduction

Planning for the qualitative and quantitative growth of developing educational systems can be seen as a 'series of untidy and overlapping episodes in which a variety of people and organisations with diversified perspectives are actively involved—technically and politically' (Haddad, 1995, p. 17). The process becomes even more complex when abstract policy moves into the concrete implementation stages. Here, if planning of these stages has not been thoughtful, the result can be strong resistance to policy messages, and unexpected outcomes. These in turn may mean that effective management of change gives way to *ad hoc* adjustments and short-term strategies for coping, with a subsequent dilution of policy efficiency. In Haddad's view (1995, p. 36), 'misjudging the ease of implementation is probably the most frequent error in policy planning'.

In developing countries, policy making is seen as more prestigious than implementation, and it is to the formulation of policy that attention is paid (Ganapathy, 1985). Verspoor (1992, p. 237) cites a review of 19 developing countries which found 'an almost universal neglect of implementation issues'. Policy makers 'tend to assume that decisions to bring about change automatically result in changed policy or institutional behaviour' (Grindle & Thomas, 1991, p. 121), instead of planning out the implementation stages which follow from the decision to initiate change. Rather than seeing implementation as an integral part of policy formulation, policy makers tend to view it as an add-on. Yet it is in the translation into practice that the appropriacy and viability of the policy message are tested, and from here that the opportunity to adjust policy in the light of experience arises. For: 'implement-

Correspondence to: C. Dyer, School of Education, University of Manchester, Oxford Road, Manchester M13 9PL, UK.
E-mail: caroline.dyer@man.ac.uk

ation is not a brief pause between a shiny idea and a smart delivery' (Khan, 1989, p. 864). Nieuwenhuis' (1997) comment on formulation of policy in South Africa surely holds good everywhere: 'the success of any education policy lies in its implementation' (p. 141).

One outcome of the lack of attention to implementation, as London (1993) notes, is that cumulative and comparative knowledge of successful and less successful implementation experience is not used in the design of new innovations. Mistakes may be repeated, rather than avoided. Policy makers looking to research to assist them in this respect will unfortunately find the cupboard somewhat bare, for among the 'meager literature on implementation' (Grindle & Thomas, 1991, p. 121), there are few studies of educational policy implementation in developing countries (Craig, 1990; Jain, 1990: but see Dyer, (1993, 1994, 1996) for India, London, (1993) for Trinidad and Tobago, and Warwick *et al.* (1991, 1992) for Pakistan). Policy-related research tends to focus on policy analysis rather than the processes which operate in efforts to get specific policy ideas to have the desired effect: 'the implementation process is assumed to be a series of mundane decisions and interactions unworthy of any serious scholarly attention' (Khan, 1989, p. 851).

Craig (1990), in his review of comparative African experience in implementing policies, argues that this neglect is highly regrettable for three major reasons: there is a transparent need for major changes to alleviate poverty and generate self-sustaining growth; policies once implemented in developing countries may have comparatively greater and more enduring impacts (see Hofferbert & Erguder's (1985) discussion for Turkey); and that these countries are less able to afford the inefficiencies implicit in the failure to implement policies (see Choguill's (1980) discussion for Bangladesh and Verspoor (1992).

Because educational policy implementation in developing countries has not received sufficient analytical attention, many aspects of the processes involved are not yet well understood. If there is agreement on the desirability of focusing on implementation, there is a need to develop methodological approaches that allow the accumulation of relevant information which can be compared and contrasted across different contexts, within one country or between countries. This paper uses a model known as 'backward mapping' (Elmore, 1980) to illustrate implementation processes in the large and heterogeneous Indian federal polity, and to draw out a comparison of outcomes in various different contexts within this one country.

In a case study of Operation Blackboard, a programme under the National Policy on Education (1986; revised 1992), the 'backward mapping' model was able to generate significant insights into the 'black box' of processes involved in implementing policy. Backward mapping generated a set of findings showing that the pattern of implementation observed across three different tiers of bureaucracy was very similar, and inimical to the messages articulated in the policy. A comparison of three different school-level contexts identified certain conditions which could be correlated with more successful implementation outcomes. In addition to its appraisal of the outcomes of Operation Blackboard, the model generated rich policy-related information about the school and bureaucratic contexts into which the innovation had to find its way. Finally, the backward mapping model allowed the suggestion of potential strategies to promote more effective policy implementation in the future. If such contextual and comparative research had preceded the implementation of Operation Blackboard, it would clearly have benefited the planning of a more successful programme.

This case study illustrates how further research of this kind could be useful, particularly in the context of continuing difficulties which many developing countries are still experi-

encing in achieving universal primary education, a goal reaffirmed in Jomtien in 1990 at the World Conference on Education for All.

Implementation Research

Until a much-needed southern conceptual dimension emerges, those who wish to engage in research into policy implementation will have to borrow from frameworks which derive from three decades of research in the north, much of it in the USA. They are not ideal tools, for southern policy makers cannot necessarily take for granted a reasonable degree of political stability; strong democratic traditions; an accessible database of information to guide policy formulation; or a relatively incorrupt set of civil servants with strong professional evaluative traditions (Smith, 1985). The 'solutions' that northern research offers may thus be much less useful than their implementation constructs; but this body of research (which has itself been criticised as being 'long on description and short on prescription' (Elmore, 1980, p. 601) provides a starting point.

Two models of policy implementation which help explain Indian practices can be identified, both of them within the 'top down' tradition. The 'bureaucratic process model' starts with the policy message at the 'top' and sees implementation as occurring in a chain (Dunsire, 1978)—a question of downward logistics which can be regulated from above. The policy is seen as paramount and resistance to it tends to be seen as irrational, and as a barrier to implementation. The approach to implementation in federal bureaucratic polities such as India and Pakistan falls within this paradigm. Noordin (1985, p. 472), for example, presenting a model for India, includes implementation as the last of five steps of a sequential process (identification of empirical regularities; deliberation; pronouncement; operationalisation; implementation). He describes implementation as the 'transmission of a blueprint to the operating units' which is 'a straightforward activity because the structure, constraints, (and) priorities . . . have already been delineated'. Forojalla (1993) writing from an African perspective, implicitly also endorses this approach. The underlying focus here is control, while the 'technical values of efficiency and economy tend to dominate the selection of means' (Held, 1980, p. 265).

The second model, of 'bargaining and conflict', in contrast, accepts that implementation is untidy. It views challenges and resistance to the policy messages as rational, and implementation as a process of mediation between competing interests, which can have unexpected outcomes. It argues that this is merely a continuation of the process which characterised formulation of the policy itself, and so implementation is part of policy-making (Barrett & Hill, 1984). This model is interested in how individual or group actions and behaviour relate to policy, or the 'strategic interaction among multiple actors in a policy network' (Sabatier, 1986, p. 33), and as the case study will show, comes closer to explaining what in practice happens in a multi-tiered federal polity such as India.

The Logic of a Backward Mapping Model

Elmore (1980, pp. 602–603) describes the inherent logic of the top-down approach as one of forward mapping, which 'begins at the top of the process, with as clear a statement as possible of the policy maker's intent, and proceeds through a sequence of increasingly more specific steps' to state 'an outcome against which success or failure can be measured'. Northern policy analysts who have studied such 'top-down' policy delivery mechanisms have implicitly endorsed the desirability of control. They have thus sought to enhance the efficiency or effectiveness of implementation by suggesting the framing of tighter policy statutes (Ingram & Schneider, 1990), improving legal structuring (Mazmanian & Sabatier,

1981), and bettering the links between the organisational entities responsible for implementation (Sabatier, 1986, Dunsire, 1978). But Elmore (1980, p. 603) argues that the idea that implementation can be controlled from the top in this way is a myth, which is not supported by an emerging body of research evidence, and this implies that the logic of forward mapping is faulty. He suggests that a different mapping logic, which still 'serves policy makers' interest in affecting the implementation process and the outcomes of policy decisions' (Elmore, 1980, p. 604) might be more useful: that of backward mapping.

Backward mapping begins with 'a statement of the specific behaviour at the lowest level of the implementation process that generates the need for a policy' (Elmore, 1980, p. 604). Following this logic, policy making is not informed by a 'statement of intent' by policy makers, but rather by an understanding of the discrepancy between actual and desired practice which the policy message will seek to close. The process of mapping then works backwards, asking 'what ability each unit has to affect the behaviour that is the target of the policy; and what resources it would require to do so' (p. 604). At each stage, it identifies a set of organisational operations and how they work. Following an analytical inquiry which encourages a questioning of policy needs, and the policy options available to meet them, policy comes as the final stage. It is formulated only after a thorough review of the implementation path. This allows resources to be directed 'at the organisational units likely to have the most effect' (Elmore, 1980, p. 604). Elmore (1980, p. 610) suggests that this process reduces 'reliance on abstract, standardised solutions', making way for 'local knowledge and skill at delivery level', which is essential since 'the problem-solving ability of complex systems depends not on hierarchical control, but on maximising discretion at the point where the problem is most immediate' (Elmore, 1980, p. 605).

This backward mapping model promises a useful point of departure for an investigation into policy implementation. It also draws in important issues which have arisen from implementation research to date. For instance, mapping will be able to identify veto points—decisions—which Pressman & Wildavsky (1973, p. 102) identified as critical, since there is an inverse relationship between the number of veto points and the chances of results. It can show what casual thinking was exercised, which Pressman & Wildavsky (1973) also demonstrated as central. It can also illustrate the influence of politics within the implementation chain (Barrett & Hill, 1984), and the use of personal discretion to push or block policy initiatives (Lipsky, 1980). These two issues have been identified as highly significant in a developing country context (Grindle & Thomas, 1991). It can also identify varieties of acceptance behaviour (see Adams & Chen (1981) for a taxonomy and Fullan (1991) for a discussion that focuses on teachers) by those who were to implement the innovation.

The following sections apply the backward mapping model in an illustrative case study: the Indian policy innovation of Operation Blackboard, which was implemented by three tiers of government, and whose outcomes were observed in three different socio-economic contexts.

Case Study: the implementation of Operation Blackboard

In India, 'policy' in the primary education sector derives from three types of instrument: the national, 5 year development plans; national policy; and the constitution, which in its Article 45 promises universal free elementary education. Policy making is a prestigious occupation carried out by decision making élites at the 'top'. But implementation is a routine 'follow-on' carried out by bureaucrats operating within the administrative structures of three tiers of government: from the centre, to the state or union territory, through to local government at the district and lower levels.

The National Policy on Education (1986) noted:

Education in India stands at the crossroads today. Neither normal linear expansion nor the existing pace and nature of improvement can meet the needs of the situation. (p. 2)

The policy had identified three problems with the system—alienation of the child; unsuitability of the formal structure for working children; and bareness of the school facilities—and adopted a three-pronged strategy in response. A child-centred approach was to be promoted, with activity-based learning; a comprehensive system of non-formal education was to be launched; and to bring about a ‘substantial improvement in school facilities’ a ‘phased drive, symbolically called OPERATION BLACKBOARD’ (National Policy on Education, 1986, p. 11) was to be undertaken with immediate effect to improve primary schools all over the country.

Operation Blackboard was conceived as a response to the alarming statistics furnished by the Fourth (1978) and Fifth (1986) All India Education Surveys (AIES). These revealed that in 1978, 40% of primary (standards 1–4/5) schools had no blackboard, 53% no playground, 59% no drinking water (4AIES, 1980). In 1986, in almost two-thirds of those schools, four or five classes were operating simultaneously either in a single room (38%) or in two rooms (25%) (5AIES, 1990). Two-thirds of the schools had either just a single teacher (28%) or two teachers (32%) (5AIES, 1990). Operation Blackboard was a centrally sponsored scheme, in which centre and states share responsibility for joint implementation with a shared financial input of which the centre initially bore a greater part. It was simultaneously a normative and remedial programme: it was to ensure that in future all standard 1–4/5 (lower) primary schools adhered to the newly defined ‘minimum essential’ level of facilities; and it was to bring all existing schools up to that level (MHRD, 1987b). The Operation Blackboard package consisted of three interdependent components of two rooms, two teachers and a set of teaching–learning aids. It was designed in three phases of increasing intensity of coverage, and was to be completed within just 4 years of inception, by 1990. Norms for all three components of the scheme were drawn up centrally (NCERT, 1988; MHRD, 1987b) and budgets for implementation of the scheme were available to states once they submitted their project plans. Funding for buildings would be on a 60:40 centre:state ratio; the first 5 years of teachers’ salaries would be paid by the centre and would afterwards pass to recurrent state budgets. The budget for teaching-learning aids was a one-off financial injection from the centre, but a budget for item replacement was to be provided by the state.

Implementation processes were observed in the field in the state of Gujarat and in Delhi during 1991, by which time Operation Blackboard should have been fully implemented, with follow-up observations to date. During a year of fieldwork, over 100 interviews were conducted, along with document analysis (official documentation and government files), and three 2 week periods of participant observation in different schools. The 6 weeks in schools comprised participant observation in three schools; and individual and focus group interviews in each school’s cluster group, with the assistance of local interpreters (Choksi & Dyer, 1996). The author worked initially in one district (Baroda), choosing one school, and its group, from a tribal block, and one school, and its group from a rural block, both under the district administration; and an urban school, under the Municipal Corporation, with supplementary interviews among teachers working in similar schools. The focus then broadened to the district level, up to the state and on to the Central Ministry of Human Resource Development in New Delhi.

There were two strands to follow (see Fig. 1): implementation activities among the tiers

*Key Bold arrows going downwards indicate the direction of policy and teacher training flow
arrows going upwards indicate the direction and course of backwards mapping*

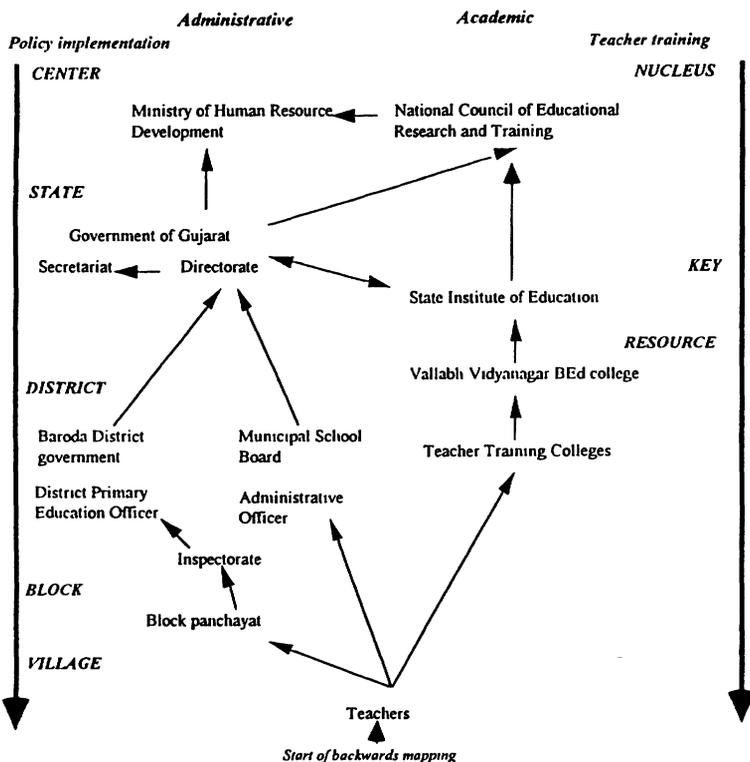


FIG. 1. Backward mapping for Operation Blackboard.

of government which had been responsible for furnishing the physical inputs; and those of trainers responsible for orientating teachers to the uses and importance of the scheme. Following the backward mapping logic, field work was conducted from the bottom up, recognising that teacher acceptance behaviour is critical to the success of any innovation. An investigation of the innovation's outcome at its intended point of impact would allow practice, rather than policy intention, to inform future questions and observations in the administration tiers of the policy implementation chain.

Observations in Schools

The contexts of the schools. Baroda district then had four tribal blocks (where over 70% of the population belong to the Scheduled Tribe (ST) category under the Indian constitution). Economic conditions are often poor, and tribal people often migrate out of the area in search of labour work in cities, to supplement the meagre income from a single crop during the year. In the case study block, the literacy rate in 1981 was 15.1% (5AIESGuj, 1990). Of the 14 teachers in the chosen cluster group, five were themselves ST, and with the exception of one teacher whose father had completed lower primary schooling, no teachers' parents had attended school. This mirrors the generally less well-established tradition of formal schooling in ST society. Educational levels among the other teachers, who were not native to the area,

were higher—most fathers had completed upper primary and most mothers had completed lower primary schooling. Seven teachers were serving in their first post and of those, only one was tribal and native to the area. Tribal postings are unpopular and are foisted on newly qualified teachers on a bond system. All tribal teachers had worked only in this tribal area. Teachers were all full time, but those who were local all owned shared land which they worked with their family; one owned a small shop providing day-to-day necessities for the village. Concerns for their 'side business' often took precedence over concerns for the school. Only one of these teachers had actively wanted to be a teacher, while others had taken the opportunity on advice, and because jobs were available—reflecting poor employment prospects in rural areas.

In this area, most teachers, whether from the tribal areas themselves or from outside, perceived the local socio-economic environment, and lack of schooling among parents, to have negative consequences for student attendance and performance. They commented, for example, that 'parents promise to send their children to school but nothing happens' or 'parents aren't aware and don't feel the child should be educated, they are more interested in having the child work', and that 'tribal people aren't ready for change'. Only one (tribal) teacher commented more positively, that 'literate parents would help contribute to fast progress in school'. Professional morale was generally low, and teaching was in every case except one a pragmatic choice based on a perceived or actual lack of an alternative. But this low morale was primarily related to the perceived lack of interest from local communities. The paucity of equipment and general conditions of their schools did not appear to have a negative impact on teachers, whose primary considerations were related to their personal security, in return for which they carried out what they described as their 'duty' as a teacher.

The 'rural' group consisted of 10 primary schools, in a block centring on a small town. The block is largely agricultural, and although it is considered by government officials to be relatively well developed, this development is uneven, with basic infrastructural facilities, such as roads and pumps, still lacking in the areas furthest away from the town itself. However, the literacy rate was 44% (5AIESGuj, 1990). One-third of the 25 teachers interviewed were of Scheduled Caste, and there were no tribal teachers. Almost all were native to the block and were settled there with their families. No teacher was in a first posting. They usually had some land holding which varied from 4 to 50 acres, and provided a supplementary source of income. In this group too, only one person had really wanted to be a teacher. For the others, the job had been attractive because it was readily available and provided a secure income, together with the possibility of working in their native place, where work on agricultural landholdings could run alongside teaching. Professional morale here was higher than in the tribal cluster, tending towards a positive attitude to the job and the communities in which they worked. Quite unlike the tribal area, teachers generally had a sense of respect for the job and an awareness of the responsibility attached to teaching young children which led to a concern to discharge their duty which was not apparent among most teachers in the tribal area. But like those other teachers, the major concern was personal security rather than vocational ambition. The teachers in the rural cluster were settled in their jobs, but they tended to have other interests. If the poverty of the school conditions was seen as a problem at all, it was perceived to be relatively minor, and teachers did not show signs of ambition for change.

In the urban environment, schools already had three rooms, blackboards and limited teaching-learning aids (TLA), supplied by the local authority. In the observed school, the teachers were without exception of a higher caste than the children, whose parents were mostly engaged in unskilled or semi-skilled jobs, such as rickshaw driving or rag picking,

which are available to those who have either no, or very low, levels of schooling. Unlike the mostly male environments of the other two areas, most teachers in urban schools are women and this school, with an all-female staff, was no exception. None was working in her first posting; all were middle-aged or above; and—the comparatively better physical conditions notwithstanding—all had low motivation for their work. One of them, for example, was not satisfied with her job, commenting on the lack of facilities in the school and weak children—factors which ‘inhibit my performance so I don’t bother much’. Although like all the others they were full time teachers, the working day was very short and teaching could easily be combined with family commitments, which was a major attraction—along with ease of getting to work—to teaching.

Progress on implementation. Visits to schools, 6 years after inception of the policy, furnished evidence of limited and patchy progress in implementation of Operation Blackboard. For the new room component, some foundations had been laid to some new rooms in the tribal area, but not all those that were eligible. There were no plans to add to the eligible single room schools in the rural area although these qualified just the same as those in the tribal area; and the urban schools did not qualify as they already had three or more rooms. The standard room package which would achieve the minimum norm prescribed under Operation Blackboard was not being implemented uniformly across eligible schools, whatever their context. In the tribal area most schools had two teachers, some of whom had been newly appointed under Operation Blackboard. Staffing ratios in the rural area were generally already as prescribed but the cluster visited included two schools with only one teacher and no plans for a second; staffing in the urban schools was above the norm. The teacher component—like the rooms—showed implementation discrepancies across the different sites which would fail to assure the normative component of Operation Blackboard.

The teaching-learning aids had been delivered in all areas. These consisted of a basic science and mathematics kit, 48 charts, various items for counting and three jigsaws, a set of library books (not delivered to urban schools), but nothing for teaching language. Their quality was generally poor: most aids were visually unattractive, and often easily breakable; many, particularly the basic carpentry and science kits, had been delivered broken. Compared with the condition of the aids in the tribal and rural areas, the aids delivered to the urban area, were very poor indeed.

Teacher acceptance. Although some teachers were offered teaching aids in conditions which the policy had already identified as inadequate, others were working with the prescribed two teacher/two room ratio. Where there were two rooms, both were not always used if the total number of children was small; commonly here two teachers worked in one room, one teaching and the other maintaining discipline. The policy insistence on two rooms was not appropriate in every context, and could even represent a waste of resources in villages with very small populations. The use of aids varied considerably according to context, although it was fairly uniform by area. Charts and the abacus were common denominators which all teachers liked—and knew how—to use. This was also the case for the library of books. But teachers in the tribal area used no more than this, and they had shown little curiosity about the contents of the kit, sometimes not even being able to say what was in it, although they did seem to have looked into the boxes. In the rural area, teachers had investigated the kits and seemed to have picked out things that they felt they could make use of. For many, that was little more than the plastic shapes and dominoes. Only four teachers reported using the more complex mathematics items, and they did not regard them as having regular applications. Here, the penalty of having to pay for replacements if items were broken might have

acted as a deterrent. However, teachers reported that as they could keep the items in the dead stock register anyway, broken or whole, they would use the items regardless, if they wanted to. Teachers in the urban schools had shown the least interest in the kit, immediately consigning it to a cupboard on arrival, from where it was removed and opened, for the first time, in my presence.

In these three different socio-economic contexts, teachers had the same qualifications and similar reasons for becoming teachers. Their motivations and relationships with the local communities and environment in which schools were situated varied quite substantially, but in none of the contexts described here could it be claimed that Operation Blackboard had made much difference to the quality of the teaching-learning process.

Interviews revealed that neither teachers nor their representatives had been consulted at any stage in the formulation of the scheme, or the contents of the aids kit, and had often been surprised by it turning up on their doorstep. Most teachers were confused either as to how to use the aids, or why they should be used, although many of them had had training. They had somewhat hazy memories of the policy messages which had underpinned the training modules, but could remember it was about child-centred learning. Training had taken a variety of forms. The teachers trained first (mostly those from the rural block) had had 3 days of orientation to the policy organised by the state. Those included in the second batch (mostly from the tribal block) had been exposed to 10 days of general orientation to the policy via a central programme PMOST (Programme for the Mass Orientation of School Teachers). Those trained subsequently (again, mostly from the tribal area, sometimes those who had already had the earlier PMOST exposure) had had 10 days of orientation to Operation Blackboard specifically under PMOST-OB. None of these training sessions had been synchronised with distribution of the materials; teachers reported that they consisted only of lectures and they did not fully understand how to relate the new policy ideas to their working situations and existing problems. There had not been any follow-up after the training, and inspectors who might have re-inforced the policy ideas were equally unclear.

Across the variety of schools observed, many—particularly in the tribal area—had not yet reached a firm level of functionality where teachers and children attend regularly, teachers are reasonably committed and are supported both by the administration and the local community. This was also true of the urban schools, with the difference that teachers generally did attend regularly. Teachers in both these contexts felt that it was very difficult to work with children who did not come to school every day, and with no support from parents. Additionally, in the tribal area, where a non-standard dialect of Gujarati is spoken, language also presented numerous problems. Teachers' perceptions of their most immediate problems varied from context to context, but nowhere did Operation Blackboard seem to offer help in solving them. It was in the rural area alone, where most of the problems concerning the basic functioning of schools had either been overcome or did not exist, that Operation Blackboard found some acceptance.

Teachers in all three areas took the poor quality of the aids kit to be a symbol of the administration's lack of care for, or interest in, them. It was also common to find that teachers felt policy was a whim of the political party then in power, so such schemes would come and go while they stayed in schools, doing the 'real work'. Overall, teachers were relatively unconcerned about poor physical conditions in schools: the focus of their problems was how to achieve a fit between the model of schooling and local environments. Their difficulties were voiced in terms of administrative problems and inadequate or unsatisfactory contact with local communities. Over years of working in such circumstances, each school's culture is a delicate equilibrium, balanced to facilitate operating in such circumstances. Operation Blackboard, with its potential for reducing teaching workload, improving physical

conditions, and aids by which to enliven the teaching–learning process, could have made a difference. But for most teachers, the only evidence of Operation Blackboard was the teaching aids. With their unclear understandings about those, they generally thought the innovation would be more labour intensive, and, hence, a threat to their delicately balanced patterns of work. The policy initiative seemed to almost all these teachers to have provided a remedy for the wrong ailment. Furthermore, as this discussion has shown, despite the uniform package of treatment, the nature of that ailment varied in readily identifiable ways from context to context.

The Training Strand

It emerged that numerical norms at the district and state levels were responsible for the anomalies about who attended the training course: grants were allocated for trainee places, not numbers of schools. The PMOST training had been conducted in 10 day residential camps using modules developed centrally in New Delhi. Key trainers had been trained in them via the ‘cascade’ format used to cover large numbers. Regular in-service training had not yet been institutionalised [1], so teachers, in need of support in dealing with difficult circumstances, tried to use the PMOST training as an opportunity to air their problems. Trainers in all three areas showed a common culture: they did not engage with teachers’ issues as they felt that the point of the course was to deliver the modules, and they did not have a sufficient sense of autonomy to adjust the course to fit in with local conditions. Trainers were aware that teachers gained little from the training, but did not view it as their responsibility to attempt to improve the relevance of the modules. For example, a trainer who had worked with the teachers in the tribal area commented:

The environment of the teacher is the biggest problem but we can’t do anything about it because it is an administrative problem. The syllabus is designed to teach them and not to solve administrative problems. A teacher can’t do anything, the government needs to do something.

Further up the cascade, a similar view was expressed; key trainers had used the 3 day residential course as an opportunity to familiarise participants with the contents of the modules, but not with practical applications. Training in all places took place without the Operation Blackboard kit, so sessions on the uses of TLA were in the format of a lecture with no practical demonstration. The kits had not been provided to districts by the state government, since teacher training colleges had not been included in the scheme. Pre-service teacher trainees were thus also not being introduced to the use of kits that they would find in the schools they would subsequently work in.

At the central level in New Delhi, modules had been devised rather hastily by the National Council of Educational Research and Training (NCERT) as a result of a parliamentary question about the absence of any kind of orientation for teachers to the new policy. The PMOST programme was described as ‘orientation’ to, and not ‘training’ in, the contents of the new policy. Participants interviewed and external evaluations nationally noted that it was usually text-based and delivered by lectures. There was also a significant time lag during which ‘awareness was created but on implementation there was no significant progress’ (Dorasami, 1989, p. 117): for Operation Blackboard, it was 2 years between the first PMOST sessions and the time when the aids were delivered to schools. This training, or orientation, was not temporally related to the implementation of the other three components of Operation Blackboard, as it was not an integral part of the scheme.

Implementation Activities of the Four Management Tiers

The block level. Observations in schools had revealed long delays in the implementation of Operation Blackboard. The block level had little to do with any of these, but had submitted its lists of required facilities to the district. The block inspector was also supposed to check the quality of the aids but would have found considerable pressures brought to bear if these had been returned because they were not up to standard, which they were not. This is far from being an opportunity to exercise local discretion to adjust the centrally sponsored scheme to local circumstances and to sustain educational quality, as the policy intended. Educational activities at this level are dovetailed under the charge of the Block Development Officer; there was no orientation for these officers, who treated, and budgeted for, Operation Blackboard in the vein of business as usual. The block level has no resources or autonomy to speak of, and so carries out decisions made at the district level.

The district level. At the district level, recruitment of teachers should have been relatively quickly effected, but new advertisements for extra posts meant that not all those on the waiting list were offered jobs. This led to delays and court cases, and the rush to appoint also led to recruitment of teachers who had previously been set aside because they had lower credentials than the district had set itself—a poor reflection of the overall policy effort to upgrade quality. The district had a very small budget for rooms and looked to the state to provide funds for it to meet the targets set. Escalating prices meant that the district was only able to construct approximately half the number of schools against the target. The district was not responsible for the purchasing of aids kits, only for their distribution, for which there was no financial allocation, leading to delays and storage problems.

The District Primary Education Officer, in charge of the district's 8000 primary teachers, had been shocked by the All-India Survey findings, but saw Operation Blackboard as 'part of democratic practice. Some policies are continuous, the very essential ones, others come up according to political will, as the vision of the party then in power' (personal communication, DPEO Baroda). He clearly classified Operation Blackboard as falling within the latter category. Buildings and teacher appointments were part of a routine, carried out according to existing state-level norms, that continued unchanged. The District Primary Education Officer viewed the aids kit as unnecessarily complex and had predicted that most items would find no use:

This supply is welcome but there is no need for more than a preliminary supply, the rest can be given after some time when these materials are regularly utilised and things have come up to some extent. These things conform to an ideal ... I don't say they are useless but teachers are not in a position to use them all. OB seems to have been formulated for an ideal school with conditions where luxurious play materials could be used. (personal communication)

There had been no opportunity for him to contribute his thinking to the design of the innovation. He did not view his role as being proactive in improving educational quality, seeing his responsibility as providing the administrative function of sending kits out to schools and sanctioning teacher and room provision. He was surprised at my suggestion that his experience might have been useful in diagnosing and addressing in advance some of the problems he had correctly predicted. He did, however, stress that teacher education was a pre-requisite for any positive moves in the direction of quality improvement, and that funds could better have been put to that use. But, as the funds were tied to the scheme's specification and there were no other sources, he did not have any financial discretion to do so.

Municipal Corporation. Urban schools come under the jurisdiction of the Municipal Corporation, which answers directly to the state. In Baroda, after lengthy delays and no survey of each school's requirements, the only evidence of Operation Blackboard was the delivery of the uniform package of unusable aids.

The state level. State officials implemented the scheme via written circulars, supported by monthly meetings with District Primary Education Officers. They dealt with the slow progress at district levels by writing circular reminder letters, and re-iterating instructions. Feedback came in the form of quantitative statements of disbursement against targets, and some discussions in monthly meetings, but problems of monitoring remained substantial, as Dhingra (1991) (then national Director of Primary Education) describes. The evaluation mechanisms did not have the capacity to provide information as to why implementation was taking so long, and state officials felt that the failure of the inspectorate, the 'supervisory machinery' was critical. Underlying their apparent acceptance of the status quo is state-level officials' perception that once implementation passes to the district level, it passes into the hands of district governments. These are subject to different legislation under the local government, or Panchayati Raj, rules of 1963, and because its members 'are elected representatives, they take their responsibilities very lightly' (personal communication, Director of Primary Education, Gujarat state). The state government did not, however, address the quality assurance steps that were within its power. It could have revised its tendering procedures to ensure good quality teaching-learning aids were purchased, as the centre had suggested it should, but this had politically sensitive implications, not least because this is a regular route to personal gain. It could have revised the dead stock register so that teachers were not personally responsible for damaged aids; or it could have designed an improved monitoring and evaluation system to allow varying needs of school contexts to be addressed appropriately.

A serious obstacle that Operation Blackboard ran into at the state level was resentment at centrally sponsored schemes of this type. The state had no involvement in its design, and resented the way in which the centre had arrogated policy making to itself, leaving the state at the sharp end of the implementation problems but with no sense of ownership. Gujarat had already achieved one of the highest national ratios of schools to villages (98.5% by 1986 (5AIES, 1990)) and consequently had a very low allocation for school rooms: it was, however, expected to find 40% of massive construction costs with very little warning. The state teaching-learning aids kit varied very considerably from the central prototype. It was far less comprehensive and a good deal less robust—but because of central pressures to get the scheme going, procurement of the first round of teaching-learning aids had to be done without the official list of specifications, which arrived 2 years later and was dismissed by state officials as 'unrealistically complex'. Although the policy agenda of achieving universal elementary education was shared, state officers would have preferred to construct their own *modus operandi* and disagreed with the priorities the centre had set arbitrarily for the entire country. Key stakeholders had no real interest in the innovation. The Education Secretary of Gujarat state, for example, said:

When there's money available we take it, Operation Blackboard is only marginal for us, it doesn't harm anybody to have a little embellishment here and there. Therefore we all made the proper sounds but what we are getting when we launch a programme like Operation Blackboard is a marginal increase and what they are expecting is a quantum jump in the quality of the school. Really, it's only a frill.

Another key stakeholder, the state's Director of Primary Education, noted that in his view,

providing facilities does not address the crux of the problem of quality in education: he felt that Operation Blackboard missed the point:

Physical facilities are not the only means of salvation. You may provide the school facilities, teachers and teaching aids but generally nowadays the tendency is that the teacher is lacking. Nothing matters, teaching has lost its meaning, the teacher himself is not at all interested. So, as the problem is the dedication of the teachers, the material is immaterial.

The state communicated its progress on the scheme to the centre via quarterly progress reports and meetings of education secretaries. At these meetings, states almost always appeared at a disadvantage as they were upbraided for slow progress. The centre also held such meetings more regularly with education secretaries, who delegate implementation to their directors, which made it difficult to discuss and solve difficulties that occurred during implementation. Such meetings were not useful as a diagnostic monitoring tool, and neither were the progress reports, which petered out when there was no progress to report on. The ministry attempted to address this by convening a workshop to assist states in the use of a simple linear planning tool, but Gujarat state did not take up the initiative, and it was not pursued by the ministry.

The state, used to discharging its duties to primary education in terms of physical inputs, viewed Operation Blackboard—which in operational terms was presented in this way—as an accelerated version of its existing programme for universal primary education. Officials did not agree with the definition of ‘minimum essential’ and so did not internalise the notion that this should become the norm: they concerned themselves only with the remedial aspects of the scheme. This prevented the policy thrust of the centrally sponsored scheme from taking a firm place on the state’s own policy agenda, which had been the centre’s intention. State officials felt, and resented, central control of the policy making agenda, using financial incentives that the state would have been unwise to refuse; this exacerbated issues of relative status since policy making is viewed as a more prestigious activity than its implementation. Furthermore, with 98% of the state budget being used for recurrent expenditure such as teacher salaries (GoG, 1990), there was no expectation that the state’s ability to resource innovations it might like to initiate would improve.

In the state, officials at all levels were very clear that teachers required support and training to make use of this innovation, and held out no hope for the innovation unless these were provided. Since they were not, it was anticipated from an early stage that the innovation would fail. Officials’ caution was informed by their experience of an earlier UNICEF experiment in the 1970s which provided science kits, which had also ended up in locked boxes in classrooms (still visible, and dutifully recorded in dead stock registers).

Implementation at the centre. Key civil servants at the ministry attributed the speed and oversimplification of the implementation of Operation Blackboard to both the naiveté and the inexperience of a young and enthusiastic Prime Minister. However, their experiences could not counter the political imperatives: the set time scale was the framework within which they had to work, whatever their reservations. Given the sheer size and complexity of the venture and ‘an inevitable gestation period’, ministry officials saw the time scale for Operation Blackboard as unrealistic, and it would be unfair to blame this on states:

Three years was too ambitious, it is too large and variegated a structure, and it was impossible to launch it within months. Any large project can’t be done in less than ten years, even if brilliantly. (personal communication, Joint Additional Secretary, MHRD)

The ministry found it hard to sustain the momentum of the programme, in part because they themselves were ambivalent about a number of issues. They were generally sympathetic to state officials' workload and how little money is available at the state level, but this sympathy did not entirely mitigate their annoyance at the states' slow performance or inertia over the policy notions underpinning the innovation. Nor did it allay their suspicion that states could have temporarily diverted funds for their own schemes, which could account for delays in the implementation of Operation Blackboard.

But delays occurred because the ministry had not planned out the implementation process, and had assumed, in a top-down way, that implementation would ensue automatically through existing bureaucratic channels. Effectively, it presented states with a scheme for which the modalities of implementation had not been worked out; and this untidiness was passed on to states. The success of the building component, for example, had rested on the availability of funds connected with rural employment schemes run by the Agriculture Ministry. HRD ministry officials knew from the outset that this was not realistic, which had made them 'different about the provision of buildings as [there was] no money for funds'. Talks had been held between ministries and although an agreement to prioritise building works had been verbally agreed, the Agriculture Ministry did not incorporate it into its guidelines for lower level officers.

In view of the expense of Operation Blackboard, the Planning Commission had suggested (MHRD, 1987a) a pilot project (strongly advocated by Kemmerer, (1990) in such instances), but senior officials decided there was no justification for this:

We conduct pilot projects only if the viability is not certain, or if we do not know that we can achieve the objectives. But with Operation Blackboard all items were beyond doubt, the objectives were certain, and that they would constitute the minimum level there was no doubt. There must be a benefit because teachers would be correlated with rooms and equipment. (personal communication, Joint Additional Secretary, MHRD)

With causal thinking of this nature, ministry officials seemed rather surprised that Operation Blackboard had not taken off in schools: but with feedback that was almost entirely concerned with numerical data, they had only anecdotal evidence that this was so. The centre showed an unwillingness to move to a managerial mode, envisaged in the National Policy on Education (1986) as a more equal partnership between centre and state, because it did not trust states to discharge the scheme as envisaged. Instead, it retained a control orientation that, in a climate of resentment and passive resistance, ensured the state would not become an equal stakeholder. Existing expertise was excluded, to the detriment of temporally and financially appropriate structuring of the policy implementation.

Operation Blackboard: the outcome

As this account has shown, the policy idea had great difficulty in penetrating the status quo it encountered at each level, in large part because actors at all points in the implementation process did not perceive themselves as having any stake in the changes that were suggested. But equally, all actors tended to see themselves as comparatively unable to make changes because of the actions of others. Bureaucratic procedures were carried out but without a sense of real purpose, and the *raison d'être* of the whole system—children and teachers in schools—seemed almost peripheral in the struggle for control of who should set the policy making agenda. After its dramatic inception the outcome of Operation Blackboard has been a scaling down of the initiative: the quality dimension it attempted to infuse has fallen away, and by 1995 Operation Blackboard had become little more than a vigorous school building programme.

Learning for Policy

The policy logic underlying Operation Blackboard was that improvements in educational quality could not take place without better physical facilities, and that this should become a norm so that this problem did not re-occur in the future. This logic was not well related to others' frames of reference. From the state government downwards, the most urgent issues where policy inputs were implied were classroom management and teacher motivation; teachers themselves saw other barriers to the improvement of the teaching-learning process. Individuals were behaving in ways which were rational in their context, but were often not supportive to the thrust of the policy innovation and so, rather than promoting it, contributed instead to an overall lack of policy efficiency.

Applying the backward mapping model, policy aiming to institutionalise a more child-centred approach to learning should have been generated from asking questions of and about teachers in classrooms, and the relationship between their behaviours and the policy intention. The research described here relatively quickly generated insights which called into question the fit between the intended policy and school contexts. Further analysis of the dynamics of classroom processes and relationships between teachers and local communities would have generated more information about teachers' difficulties in transacting the curriculum. It would have found that these difficulties arose from a wide range of interconnected reasons which included their pre-service training, the lack of fit between curriculum content and children's environments, and a lack of pedagogical support, as well as the absence of teaching-learning aids, an issue that was much less often cited as a problem. Here then is a range of policy options which need to be considered in pursuit of improving the quality of primary education.

Backward mapping also illustrated that at every level, a major problem was the absence of ownership of the innovation, and so a lack of allegiance to it in terms of either the immediate, remedial component, or the underlying, long-term normative component. Even as the decision to have an 'Operation Blackboard' was made at the top of the system, there was sufficient knowledge elsewhere within the same system of the ways in which, and reasons why, it was likely to fail. With a lack of either conviction or ownership behind it, the innovation failed to compete successfully with other policy concerns for a place on the state and local level agendas. Stakeholder interest was not recognised as an essential component for a successful innovation, and so it was not sought at the planning stage, or in the subsequent implementation phase. In this case, there was already general agreement on the need to provide schools with basic facilities, and a more effective outcome could have been assured had there been efforts proactively to generate stakeholder interest by consulting—and so involving—those who would eventually be responsible for implementation.

This Indian case has illustrated the way in which the backward mapping model could be expected, in any context, to generate (a) learning for policy; (b) policy options; and (c) plans that have taken account of, and planned for, the context in which they will operate. The model is able to identify the levels of 'local' knowledge to draw on so that implementation is most effective; in the case study, this knowledge existed but was not used. If actors at these levels have policy inputs, their expertise can be brought to bear in identifying potential barriers and critical veto points, and on legitimate policy strategies. In this way, the beginnings of a plan for implementation emerge. The next step is to identify the nature of resources (both financial and human) required to overcome identified obstacles, and make arrangements accordingly. Furthermore, the use of local knowledge would indicate how these resource requirements might differ from place to place. A sustainable benefit of this approach is that, as actors at various levels are drawn in, their own positive and proactive professional

roles are enhanced in an interlinked process of defining and implementing policy. It could be expected that over time, the flexibility and responsiveness of the educational system would develop.

In conclusion, two messages might be highlighted. The first is that the need to plan implementation is transparent, and the backward mapping model is a useful tool in generating the necessary information to do so. The present example of the application of the model has revealed a depth and complexity in the implementation environment which must be considered and planned for in the formulation of policy. Moving towards the more flexible policy environment outlined above is a process where risks may seem high, since the locus of control moves away from those at the 'top' of the system, but the penalties of not planning implementation well, or at all, are that human and financial resources are wasted as policies are less effective than they could be.

The second is that implementation as a subject is worth serious research attention. It may appear that the wide range of contexts and variety of issues that this will entail make the task seem daunting. However, the focus of this attempt should not be to 'give advice' in the shape of neat packages of policy pointers. Rather, the very slim comparative literature on this subject indicates that a large part of the challenge of reaching the Jomtien goals lies in 'increasing our understanding of the depth and complexity of policy issues' (Stone 1985, p. 489). Such 'learning for policy' (see White, (1990)), must necessarily include a central concern with implementation—the test ground of any policy—using models such as backward mapping. Only then will we see the emergence of well informed, incremental and realisable policy inputs which bring closer our overarching, long-term policy goals—such as education for all.

NOTE

- [1] The National Policy on Education (1986) recommended the establishment of District Institutes of Education and Training (DIETs) to attend to this aspect of teacher support. This was another centrally sponsored scheme and DIETs are now operational in most states.

REFERENCES

- 4AIES (1980) *Fourth All-India Educational Survey* (New Delhi, National Council of Educational Research and Training).
- 5AIES (1990) *Fifth All-India Educational Survey* (New Delhi, National Council of Educational Research and Training).
- 5AIESGUJ (1990) *Fifth All-India Educational Survey of Gujarat: selected statistics* (Gandhinagar, Government of Gujarat).
- ADAMS, R.S. & CHEN, D. (1981) *The Process of Educational Innovation: an international perspective* (Paris, Kogan Page/IIEP).
- BARRETT, S. & HILL, M. (1984) Policy, bargaining and structure in implementation theory: towards an integrated perspective, *Policy and Politics*, 12(3), pp. 219–240.
- CHOGUILL, C. (1980) Towards a theory of implementation in planning based on the Bangladesh experience, *Journal of Overseas Administration*, 19, pp. 148–159.
- CHOKSI, A. & DYER, C. (1996) North–South collaboration in educational research: some reflections on recent Indian experience, in: M. CROSSLEY & G. VULLIAMY, (Eds) *Qualitative Educational Research in Developing Countries: current perspectives* (New York, Garland).
- CRAIG, J. (1990) *Comparative African Experiences in Implementing Educational Policies*. World Bank Discussion Paper (Africa Technical Department Series) no. 83 (Washington, World Bank).
- DHINGRA, K. (1991) *Improving the Information System for Planning the Quality of Primary Education: the case of India* (Paris, International Institute of Educational Planning).
- DORASAMI, K. (Ed.) (1989) *An Evaluative Study on the Programme of Mass Orientation of School Teachers and its Impact on Karnataka* (Mysore, Regional College of Education).
- DUNSIRE, A. (1978) *Implementation in a Bureaucracy* (Oxford, Martin Robertson).

- DYER, C. (1993) Operation Blackboard: policy implementation in Indian elementary education, unpublished PhD Thesis, University of Edinburgh.
- DYER, C. (1994) Education and the state: policy implementation in India's federal polity, *International Journal of Educational Development*, 14(3), pp. 241–253.
- DYER, C. (1996) Primary teachers and policy innovation in India: some neglected issues, *International Journal of Educational Development*, 16(1), pp. 27–40.
- ELMORE, R. (1980) Backward mapping: implementation research and policy decisions, *Political Science Quarterly*, 94(4), pp. 601–616.
- FOROJOLLA, S.B. (1993) *Educational Planning for Development* (London, Macmillan).
- FULLAN, M. (1991) *The New Meaning of Educational Change* (London, Cassell).
- GANAPATHY, R.S. (Ed.) (1985) *Public Policy and Policy Analysis in India* (New Delhi, Sage).
- GOG (1990) *Primary Education Statistics Gujarat State* (Directorate of Primary Education, Government of Gujarat Gandhinagar).
- GRINDLE, M. & THOMAS, J. (1991) *Public Choices and Policy Change: the political economy of reform in developing countries* (Baltimore, Johns Hopkins University Press).
- HADDAD, W. (1995) *Education Policy-planning Process: an applied framework*, Fundamentals of educational planning, no. 51 (Paris, UNESCO/IIEP).
- HELD, D. (1980) *Introduction to Critical Theory* (London, Hutchinson).
- HOFFERBERT, R.I. & ERGUDER, U. (1985) The penetrability of policy systems in a developing context, *Journal of Public Policy*, 5, pp. 87–106.
- INGRAM, H. & SCHNEIDER, A. (1990) Improving implementation through framing smarter statutes, *Journal of Public Policy*, 10, pp. 67–88.
- JAIN, R. (1990) The role of bureaucracy in policy development and implementation in India, *International Social Science Journal*, 123, pp. 31–47.
- KEMMERER, F. (1990) Going to scale: why successful instructional development projects fail to be adopted, in: D. CHAPMAN, & C. CARRIER (Eds) *Improving Educational Quality: a global perspective* (Westport, Greenwood Press).
- KHAN, J. (1989) The implementation process, *Indian Journal of Public Administration*, 35(4), pp. 851–868.
- LIPSKY, M. (1980) *Street Level Bureaucracy* (New York, Russell Sage).
- LONDON, N. (1993) Why education projects in developing countries fail: a case study, *International Journal of Educational Development*, 13(3), pp. 265–276.
- MAZMANIAN, D. & SABATIER, P. (1981) *Effective Policy Implementation* (Lexington, MA, D.C. Heath).
- MHRD (1987a) Note for the Cabinet (New Delhi, Department of Education, Ministry of Human Resource Development, Government of India).
- MHRD (1987b) The scheme of Operation Blackboard (New Delhi, Department of Education, Ministry of Human Resource Development, Government of India).
- NCERT (1998) Operation Blackboard: essential facilities at the primary stage—norms and specifications (New Delhi, NCERT).
- NIEUWENHUIS, F.J. (1997) Can research into the development of education in post-colonial Africa shape education policies in South Africa?, *International Journal of Educational Development*, 17(2), pp. 129–144.
- NOORDIN, W.M. (1985) The educational planning process: from theory to operationalisation, in: M. RAZA (Ed.) *Educational Planning* (New Delhi, Concept).
- NPE (1986) *The National Policy on Education* (New Delhi, Department of Education, Ministry of Human Resource Development Government of India).
- PRESSMAN, J. & WILDAVSKY, A. (1973) *Implementation: how great expectations in Washington are dashed in Oakland* (Berkeley, University of California Press).
- SABATIER, P. (1986) Top-down and bottom-up approaches to implementation research: a critical analysis and suggested synthesis, *Journal of Public Policy*, 6(1), pp. 21–48.
- SMITH, T. (1985) Evaluating development policies and programmes in the Third World, *Public Administration and Development*, 5(2), pp. 129–144.
- STONE, C. (1985) Efficiency versus social learning: a reconsideration of the implementation process, *Policy Studies Review*, 4(3), pp. 484–486.
- VERSPoor, A. (1992) Planning of education: where do we go?, *International Journal of Educational Development*, 12(3), pp. 233–244.
- WARWICK, D., REIMERS, F. & MCGINN, N. (1991) The Implementation of Educational Innovations in Pakistan: cases and concepts, Development Discussion Paper no. 365ES (Harvard, Harvard Institute for International Development).
- WARWICK, D., REIMERS, F. & MCGINN, N. (1992) The implementation of educational innovations: lessons from Pakistan, *International Journal of Educational Development*, 12(4), pp. 297–307.
- WHITE, L. (1990) *Implementing Policy Reforms in LDCs: a strategy for designing and effecting change* (New York, Lynne Rienner).