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Report on a visit to India

by

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INTRODUCTION

1. I visited India between 22 November and 11 December 1983. My detailed itinerary is given in Appendix 1. My terms of reference were:

1.1 Within the collaborative programme of assistance to TTTI Bhopal and in connection with the MTechEd programme, to acquaint selected faculty with the skills needed in project and programme evaluation and in the process of naturalistic enquiry.

1.2 To guide and supervise faculty on any one project evaluation and therefrom to evolve learning material.

1.3 To submit a report to BC:TETOC within three weeks of return to the UK.

2. Professor Rao and Principal Mani, who had initiated and negotiated my assignment, were in Delhi on a GI board meeting for the first three days of my visit. I therefore spent more time reviewing the MTechEd plan than I had anticipated.

3. Principal Mani had decided that the whole faculty should attend the induction course in programme evaluation and naturalistic enquiry rather than selected faculty, thereby shifting the emphasis from skills training to conceptual understanding, and from an EEC focus to a TTTI Bhopal focus. Given the restricted time available, this was probably all that could have been accomplished anyway.

4. A two-day visit from a group of senior administrators from the Philippines further reduced the time available for the Programme Evaluation course, and the heavy involvement of EEC/TTTI faculty in that visit eroded and fragmented discussions of EEC during those two days (1 and 2 December). I did, however, have a useful discussion on 2 December with Director Saran of CPSC.

5. By the time we reached Ahmedabad a plan of evaluation had evolved and been agreed between myself and TTTI faculty, and the main aim of the visit to Ahmedabad was to negotiate support for the plan with the DTE and the Gujarat EEC Committee. This aim was accomplished.

6. My comments are necessarily more tentative than they may sound, given such a brief exposure to a complex activity in a culture new to me. They are gathered under two headings (a) The MTechEd plan (b) TTTI as a change agency, and are followed by a proposal for the evaluation of the EEC project.

The MTechEd Plan

7. The first students for the Masters are expected in February 1984 so my reservations about the curriculum, insofar as they are justified, come too late to lead to a revision before the first run through. (In any case flexibility is constrained by acceptance of the proposal by University of Bhopal). They may however be regarded as foreshadowing the experience and in that sense prove of some use in monitoring and evaluating the course.

8. Let me say first, and very positively, that the idea of mounting a Master's programme is a good one. Logically it is an appropriate response to the developing theory of change that TTTI has evolved in response to its experience over the past eighteen years, in particular its perception that in a top-down institutional system a change orientation at the upper levels of polytechnic personnel is a pre-condition of innovation in the classroom. Perhaps more importantly it offers the possibility of a credential with career currency, something that the Diploma has failed to achieve, and that is arguably essential

to get a curriculum development movement off the ground. The absence of a career structure for innovators in the Western Region is in my view the most critical difference between the Indian situation (vis-a-vis curriculum development) and the situation in the UK or, even more markedly, the USA. An ad hoc Masters degree is clearly a first step in that direction, though it will not of course in itself generate a new infrastructure of career opportunities. However, I must draw attention to some inconsistencies, ambiguities and uncertainties in the existing plan:

8.1 TTTI is still awaiting news of the sponsored students who will constitute the first intake. Will they be principals, heads of department, lecturers or a mixture? It can be counterproductive to impart to students skills and perspectives they cannot subsequently utilise, and this is an issue raised particularly when we look at the stated aims of the course.

8.2 The stated aims are very much geared to the managerial level of the polytechnics (principals). They add up to the development of a cast of mind - that of the dynamic, problem-solving leader. In a system (such as that of the Western Region) offering limited prospect of career advancement, limited autonomy to individual institutions and under severe difficulty merely to maintain a service, there must be a question first of all about the appositeness of such a vision to the reality of an under-resourced system, and secondly about its appropriateness to personnel below the level of principal.

8.3 Related to this, there appears to be a division of view among the teaching faculty as to whether the course is designed to produce specialists (people with expertise in one or two areas of curriculum development) or generalists with an informed overview of all aspects of curriculum management, or even both.

9. I have heard all three positions advocated by different members of faculty. Such divergence of view among teaching staff is quite normal (a similar range of views would be expressed by tutors of the Master's course in my own institution) but I do think that this requires further discussion, perhaps immediately following the identification of the first intake of students. For instance it could be argued that generalists and specialists require quite different approaches to the curriculum areas covered by the proposed syllabus. The generalist (or manager) needs to be educated for understanding of a number of specialist fields through an issues-based approach that treats each specialist field as essentially divergent, while the specialist needs to be trained for competence through a skills-based approach that treats each field as essentially convergent.

10. Is there an Aims/Provision mismatch? The syllabus, seen as an attempted expression of the aims, strikes me as:

(a) Too content-laden

(b) Too cellular and segmented (even Measurement and Statistics are separate elements)

(c) Too out-of-date in terms of its supporting bibliographies certainly to support a divergent, issues-based approach (though there are some notable exceptions)

(d) Arguably too much of an ideological mixture (eg systems approaches adopted in some units, naturalistic in others).

Such comments may sound more damaging than they should. The constraints are strong. This is a major innovation that TTTI had to negotiate through the narrow gate of University validation. As elsewhere in the world validation tends to be conditional on a prominent emphasis on familiar and established content. A process-oriented programme, which TTTI would very much like to have, can be impossible to legitimise, and may have to be achieved over a longer time period during which the credibility of the programme can be achieved and provide the basis for further change as the University watchdogs relax their scrutiny. Also, what I have called a mixture of curriculum philosophies may properly be interpreted as evidence of the collective range and richness of experience and expertise among TTTI faculty, which impressed me. Nevertheless, with the whole faculty involved in teaching the course, the dangers of an incoherent experience for the student are all too obvious.

11. How then is it possible for such a content-laden, segmented course to serve the stated aims? The answer must lie:

- (a) in the pedagogy
- (b) in the assessment
- (c) in the sequence of courses.

If this analysis is correct, it leads me to make a number of proposals, for consideration by the TTTI staff at the appropriate time.

PROPOSALS

12. There is a need for an integrative strategy to enable staff and students to relate their learning in the different areas of the course to the context of application. This could be provided by case studies of polytechnics, the case studies providing a common frame of reference for the course. At present TTTI Bhopal has no such studies, although it has several useful case-studies of its project involvements. Should the proposal at the end of this report be implemented it could make available in time for the second run-through of the MTEchEd case studies that would enable this to be done. This might shift the emphasis in the course away from a theory focus and towards a practice focus, thus more closely resembling the MA in Applied Research at my own institution in the UK.

13. The course might be continuously monitored by observation based on process criteria derived from the stated aims - checking on the fidelity and internal consistency of the pedagogy.

14. There might be a position of course tutor whose exclusive concern is feedback from and support for the students. It may be important that such a faculty member is not a teacher on the course, and is seen by the students as a representative to faculty of their difficulties and anxieties.

15. The continuous assessment element in overall assessment should be maximised (within constraints imposed by the validation agreement) and oral assessment should be used as much as possible. The aims of the course are difficult to assess by traditional modes of examination and the latter must be effectively counter-balanced by judgment-based assessments of student development. The appropriate standards of judgement will take time to develop

(they can only evolve as inter-subjective agreements based on experience of the course through successive cohorts) so students should not be penalised through this mode until standards are secure. This should not deter staff from giving visible prominence to these assessments from the outset whilst exercising caution in their judgements.

16. Written examinations might take a problem-solving form such as contextualised assignments, thus reinforcing the importance of application of knowledge and skills.

17. Student projects, to my mind an important course element, might be assessed less in terms of their substantive success than in the evidence they afford of the student's acquisition and application of the skills and sensitivities emphasised in the course aims.

18. If possible TTTI should try to attract prestigious and sympathetic external examiners, and to involve them as closely as possible in course planning and continuous monitoring.

19. Perhaps before the second run through of the course begins consideration should be given to the present sequencing of units. It does seem to me that, given the stated aims, it would make more sense to begin with those units (to do with institutional management and organisational development) that could immediately set an appropriate framework for the students subsequent learning.

20. It is easy to criticise such plans. Nothing I have said should detract from my view that the MTechEd, in the context of the Western Region of India, is a significant innovation that deserves maximum support, and that Bhopal has the experience and expertise to make a success of it.

TTTI BHOPAL AS A CHANGE AGENCY

21. In brief the task of TTTI Bhopal is to transform the technical education system, to bring it into line with India's industrialisation plans and aspirations. The system is even more sluggish and ingrained than those in the West, and would-be change agencies there with much more resources have failed to transform them in the past thirty years. They are dealing with a power-coercive system, and one in which carefully nourished toe-holds on the system are vulnerable to the arbitrary whimsies or populist ad hoceries of politicians or the slow drag of administrative inertia. This must mean that at all the practitioner levels where there are attempts to activate there is a feeling of powerlessness, of demoralisation, not least evident in the nihilism of constant student disruption of planned services. It is hard to get voluntary commitment from practitioners in such circumstances and easy to end up with at best a minimal compliance when innovations have a seal of authoritative approval. In the USA federal intervention in the curriculum began with a concept of support for grass-roots creativity and professional development and ended with a system of prescriptive categorical funding that produced only cosmetic compliance and deprofessionalised teachers, reducing them to operatives of curricula blue-printed elsewhere. In the UK the alternative error - a supermarket of curriculum packages to enrich the free choice of teachers, with little understanding of the fact that curriculum innovation creates dissonance at all levels of the school, and that innovating teachers cannot alone take on all the forces that hold the established curriculum in place - organisational, attitudinal and skills-based traditions that constitute the political economy of instruction.

22. TTTI faculty, through their studies, their programmes of visits around the world, and their own efforts, have been exposed to these legacies and learnings, and put them to the test in the Indian context. They are trying most approaches in one form or another - from the product orientation of the packaged curriculum to the process orientation of the catalytic human implant, from voluntary to conscripted participation of teachers, from pre-service training of teachers (a bottom-up strategy of change) to the co-optation of principals in growing recognition of power-based constraints. They are also trying, patiently, to convert the overloaded scaffolding of support services into permanent infra-structures within the three client states.

23. There have been a number of phases, triggered by crises of viability, but shaped by developing theory of how to engage the system effectively in self-renewal. Training, education and direct intervention have been tried. In 1985 TTTI will reach the age of twenty as an institution, and at the same time face the expected withdrawal of the substantial ODA support it has had for the past decade. What policy of change will TTTI follow in the phase that follows? What will be the strategy of innovation TTTI will see as its major commitment?

24. Programme evaluation has also gone through phases corresponding to phases in the approach to ^{ed} innovation adopted in the West. In the first phase (in the 50s and 60s) when social engineering was the dominant philosophy and centre/periphery RD and D its expression, the evaluator was a measurement specialist whose job was to assess the congruence between objectives and student learning outcomes.

25. During that phase the curriculum process was treated as a black box, and an input/output production concept was seen as adequate for monitoring innovatory curricula. When however it became clear that success was difficult to achieve and that we did not understand fully why this was so, evaluators became more process-oriented, trying to account for the forces of support and resistance that were mobilised by innovatory programmes - outcome measures gave way to descriptive and explanatory data. During this second phase (late sixties and seventies) we saw the rise of management ^{realism} in the West, and a shift in the control of innovation from academics ~~and~~ administrators. Evaluation was characterised by a feedback role to managers, a form of intelligence gathering for distant policy makers. By this time however the evaluation matrix had expanded so much that administrators could not handle the complexity and range of evaluation reports, and this led to a lot of frustration on both sides of the relationship.

26. We are in the third phase now, and it is not yet clear how it differs from the past. But the evaluator is more of an innovation theorist studying new programmes with a view to the development of an adequate descriptive theory of the case and its context on which effective strategies of influence could be based. ~~In a sense that is where I feel TTTI, Bhopal now stands and that is where, I would opportunistically suggest, evaluation comes in, or at least the kind of evaluation we have been discussing here.~~ My own stance towards innovation and the problems of enabling and sustaining change is quite clearly an educational one. Better, more honest understanding of the rhetoric/reality shortfall, a fuller grasp of the gap between existing and aspired to curricula, is the only way forward. Case studies ~~of the impact of TTI projects on the polytechnics~~ can provide the basis for a more realistic dialogue about what to do next. They will provide an acid test of the goodwill and seriousness of intent at all levels of the system. Case studies employing naturalistic methods of enquiry and accessible forms of reporting, which can represent the disenfranchised in hierarchical systems and enable an upward

flow of experience under conditions of maximum individual protection, give everyone in the system an opportunity to influence the reality level of discourse about the development of ~~technical~~ education.

27. I hope that through the Engineering Experimentation Course (EEC) evaluation that we are planning this particular avenue can be explored, and the results taken into account by TTTI in shaping its own future.

THE EVALUATION OF EEC - A PROPOSAL

28. In the course of discussing various possible ways in which TTTI staff could acquire understanding and skills in naturalistic programme evaluation, it became clear that there was no easy way. In those parts of the evaluation world where naturalistic enquiry has evolved (notably at the University of Illinois, University of Washington, and at my own Centre) neophytes have learned by apprenticeship rather than by instruction. Propositional discourse is no substitute for seeing principles, roles and procedures practised in the context of a particular case. This conceded, it was decided that the best form of induction for TTTI staff would be through collaborative association with an experienced and trained team charged with the case study of one polytechnic in which EEC is located. On the basis of this case study, in which CARE and TTTI faculty would play complementary roles, I would return to Bhopal and run a workshop to review the experience and plan further evaluation projects for TTTI staff, both with regard to the completion of the EEC evaluation, and future programme and project evaluations. It was further decided that the democratic form of naturalistic evaluation should be adopted for the case study. The main features of the democratic form are:

28.1 The gathering of questions, concerns and perspectives of the project from all those external groups/individuals who have a legitimate interest in the case, before the fieldwork begins, and the elucidation of further questions, concerns and perspectives from those groups/individuals internal to the case at the commencement of the fieldwork. This constitutes the democratisation of the criteria for evaluation, and helps the evaluators to achieve relevance, utility and fairness in the enquiry.

28.2 The operation of principles of procedure for access to, gathering of, and reporting the data generated by the enquiry. Informants are asked to testify in conditions of confidentiality, and are influential in determining the inclusion/exclusion of data in the subsequent reporting. Whereas access to the case normally follows the top down route of the system (the hierarchy of power) release follows the bottom up route (the hierarchy of vulnerability).

28.3 The evaluation report is written in accessible language and made available to all those who have participated in any stage of the enquiry (clearly the linguistic diversity in this particular case, involving differing degrees of fluency in English, Hindi and Gujarati, will impose some unavoidable constraints on this particular aspiration).

29. Naturalistic enquiry is derived from ethnographic traditions in the social sciences which normally call for lengthy immersion by fieldworkers in the culture under study. These have been adapted (by myself among others) to fit the restricted time scales of programme evaluation by the development of condensed fieldwork, a practice which involves very limited fieldwork. ~~The precedent for the proposed study, is a case-study of bilingual schooling~~

in the USA sponsored by the Ford Foundation and carried out under my direction by a team of three people from my Centre in collaboration with bilingual specialists from Boston University. The relevant point is that that case study was based on a three-week period of fieldwork in the USA. (See Bread and Dreams A Case Study of Bilingual Schooling in the USA, Occasional Publication No.12, CARE, UEA, 1982). It seems viable, on the basis of this experience, to propose a case study of an EEC polytechnic in Gujarat based on a three-week visit by a team of three from my Centre. This would generate the data for a draft of the case to be prepared back in Norwich, the draft then to be negotiated by TTTI collaborators, preparatory to the preparation of a final report. A detailed schedule of the activities and phases of the proposed evaluation follows:

EEC Evaluation Plan

December 1983	MacDonald's report and proposal sent to BC:TETOC and to TTTI, Bhopal.
January 1984	All documents/reports/relating to EEC forwarded to Norwich evaluation team.
February 1984	Principal Mani makes two-day visit to Norwich in the course of planned study visit to UK. Interviewed by evaluation team. Arrangements finalised.
February/March '84	Professors Verma and Shrivastava of TTTI visit Norwich in the course of planned study visits to UK. They provide background and context briefing for evaluation team.
April/May 1984	Briefing visits by Norwich evaluation team to UK consultants involved with EEC. Interview by correspondence with Director Saran of CPSC, and with ODA:BC.
June/July 1984	On basis of documentation and briefings and interviews in UK, Norwich evaluation team prepare a preliminary issues/questions analysis of EEC and send this to collaboration team in Bhopal.
August 1984	Bhopal team return issues analysis report with comments, plus results of their own gathering of questions, concerns and perspective from TTTI groups and individuals. Preparations finalised.
September 1984	<u>Field study.</u> Norwich evaluation team visit selected polytechnic in Gujarat for three weeks, leaving September 8 and returning September 29. Two of the three man team work exclusively inside the polytechnic, initially through observation and subsequently on observation-based interviewing. The third member works on interviewing and document analysis with a view to contextualising the case. Each of the three is paired with a TTTI collaborator/observer. By the third week of the fieldwork the team will be negotiating their observations and interviews with individual subjects/informants, using the services of two stenographers on site, provided by TTTI.

Last day on site - debriefing with TTTI team, identifying missing data, non-completions, additional requirements.

October/November '84 Tape-recordings etc. transcribed in Bhopal and forwarded to Norwich team together with further primary data from completion activities.

January 1985 Draft case study forwarded to TTTI collaboration team for (a) critique (b) negotiation with participants.

February 1985 Results of critique and negotiations forwarded to Norwich.

March 1985 MacDonald returns to Bhopal for two weeks with final case study report for (a) dissemination (b) workshop style evaluation of the experience and planning of supplementary or extension activities by TTTI faculty.

30. A plan along these lines has been agreed with Principal Mani of TTTI Bhopal, Professor Kumta, Director of Technical Education in Gujurat, and with the Gujurat EEC Committee. It is now a question of whether ODA/BC is willing and able to give such a plan the necessary financial support. This amounts to 11 man weeks of consultancy visits to India (3x3 plus 1x2) plus the costs of visiting UK EEC consultants for briefing meetings. It is assumed that ODA/BC cannot financially support the substantial amount of work entailed by the proposal on the part of the Norwich group both before and after the fieldwork visit, and that this must be a voluntary contribution by the UEA staff towards the accomplishment of the mission.

ITINERARY

Monday 21 November

Tuesday 22 November

am

pm

Wednesday 23 November

am

pm

Thursday 24 November

Friday 25 November

am

pm

Saturday 26 November

Sunday 27 November

Monday 28 November

Tuesday 29 November

Wednesday 30 November

Thursday 1 December

Friday 2 December

Saturday 3 December

Sunday 4 December

Monday 5 December

APPENDIX 1

En route London to Bombay.

Bombay to Bhopal.

Introduction to TTTI, Dr Sabherwal (deputising in the absence of Principal Mani and Professor Rao).

Visit to Exhibition..

Meeting with Faculty.

Review of MTechEd programme (Course structure, objectives, assessment) Dr Sabherwal and Mrs Saxena.

Review continued with Dr Sabherwal, Dr Dharap, Dr Banthiya.

Discussions with Principal Mani.

Review of MTechEd continued, with Professors Verma, Kapse, Rao and Principal Mani.

Preparation of material for Programme Evaluation Course for Faculty - Rao, Verma, Kapse.

Rest day - preparations finalised, informal discussions about TTI with Principal Mani and others.

Programme Evaluation Introduction - all Faculty.

Programme Evaluation - Interviewing in Naturalistic Evaluation - all Faculty.

Programme Evaluation - Reporting in Naturalistic Evaluation - all Faculty.

Planning for Evaluation of Engineering Experimentation Course - Professors Rao, Kapse, Verma.

Planning for Evaluation of Engineering Experimentation Course - Professors Rao, Kapse, Verma.

Programme Evaluation - discussion of issues and concerns raised by participants - all Faculty.

Rest day. Study of EEC reports and other TTTI documents.

Discussions of plans for EEC evaluation with Rao, Kapse, Verma and Mani.

Tuesday 6 December

Wednesday 7 December

Thursday 8 December

Friday 9 December

Saturday 10 December

Sunday 11 December

Department to Ahmedabad via Bombay.

Ahmedabad. Discussions of EEC evaluation proposal with Professor Kumta, Director of Technical Education, Gujarat State, and with Professors Rao, Verma, Jain and Halani of TTTI.

Ahmedabad. Discussions of EEC evaluation proposal with Gujarat EEC Committee, meetings with British Council Projects Officer, Mr Naik.

Ahmedabad. Final planning of EEC evaluation with Professor Rao, Jain, Verma, Halani, Naik. Depart Ahmedabad to Bombay.

Bombay. Rest day - drafting this report.

Depart Bombay to London.