Teachers' Planning is the Missing Link in Curriculum Development As Action Learning & Action Research: My Recent Reflections on My MPhil Thesis (Punia 1992)

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This paper presents a model of institute-based curriculum development developed under the leadership of an advisor in curriculum & staff development with active collaboration of the management and teachers in a technical Institute in the South Pacific in the eighties. The team collaboratively defined the problem largely based on the findings of ten studies of teachers' planning practices, developed and implemented a series of interventions with a high degree of success in closing the gap between the planned curriculum based on local needs and the operational curriculum offered by the teachers in classrooms.

The model was based on a dialectic interaction between the planned and the operational curriculum and a degree of collaborative culture amongst the stakeholders. It would seem that teachers' planning was the missing link in the early curriculum development projects of the sixties and in later curriculum development projects. This study offers a useful case of curriculum development as action research with potential for generating learning educational institutions in the future.

Introduction

A little has been written on teachers' planning as a basis of institute-based curriculum development in technical and vocational education since I presented my Phil dissertation in 1992. Top-down strategies of curriculum development have become popular in the developed and developing countries. Based on my MPhil dissertation (Punia 1992) and recent work on teachers' thinking, I present a model for institute-based curriculum development based on collaborative culture between an advisor and practitioners including the management and teachers in a technical institute. The alternative model is based on a dialectical relationship between the top-down and bottom-up models of curriculum development and a collaborative work culture amongst academics and practitioners. It is a form of collective Action learning and action research in the tradition of curriculum development as a social experiment (Elliott 1998).

This model developed when I worked as an advisor in curriculum and staff development at the Fiji Institute of Technology (F.I.T.) in the South Pacific from 1982 to 1986. This institute was responsible for curriculum development without any adequate control and support as available in developed countries. I was hired through the Commonwealth Fund for Technical Cooperation to provide such a support. The management, teachers and the advisor had to develop a systematic model for institution-based curriculum development to suit the local context to replace imported curriculum as syllabi. The new model turned a reactive institute

coping with external professional demands without adequate experience into a proactive institution providing relevant technical education meeting the local needs.

At that time there was no adequate theory derived from research on **Teachers' Thinking** to guide institution-based curriculum development in vocational education and training. In top-down curriculum development projects the Tyler model (1949) was used for curriculum planning in the developed countries. This model presented curriculum planners' perspective on curriculum development with little awareness of teacher problems in implementing the planned curriculum.

To understand teachers' perspective on curriculum development, I conducted ten exploratory studies on teachers' instructional planning conceptualised as teachers' preactive thoughts, interactive teaching and postactive reflections as conceptualised in (Jackson 1968). Vocational teachers in this Institute did not use the Tyler model (1949) to plan their instruction due to contextual constraints such as lack of time to plan, lack of culture for planning and inadequate teacher preparation. They planned, implemented, and assessed student learning without any adequate technical support and accountability to higher authorities. There was no planned curriculum based on contextual needs. There was no mechanism to link the planned curriculum with the operational curriculum with collaboration amongst stakeholders.

Based on teachers' reports on their planning practices and on my personal belief as a professional teacher educator that the achievement of curriculum objectives is the joint responsibility of management, teachers, students, advisors and other stakeholders, a new theory grounded in teacher practice emerged at the end of this project. This theory is a form of collaborative Action Research where all the stakeholders are involved in planning, implementing and evaluating curriculum development in varying degree under the guidance of an advisor in curriculum and staff development.

At the time of the development of this model, all the participants involved in this project were not familiar with action research as a new methodology of learning and research acceptable to universities for higher academic awards. Hence, I failed to make use of this work for a PhD at that time. This paper aims to encourage prospective stakeholders in such projects to make a full use of their experience for personal professional development and the development of learning organisations for the development of their countries.

This paper includes the various processes involved in the growth of this theory. Further details of this project are available in (Punia 1992) and my reports to the stakeholders, particularly to the Commonwealth Secretariat in London. To provide an adequate account of the development process, this paper is divided into five parts.

Part one outlines the project problem including the local context, the advisor's role and organisation structure within the Institute. This section is particularly useful to understand how the management and the teachers managed to transform their technician role into a professional role under the direction of an overseas advisor as a learning situation.

Part two includes the research problem, research methodology and an overview of the ten studies on teachers' planning. This section presents **practitioners' research** as a new research methodology in which the participants devised their own methodology to generate knowledge for immediate use to solve their emerging problems.

Part three presents an action strategy based on the interpretation of these studies and the development of a new model for institute-based curriculum development. The strategy includes a series of interventions directed towards the final goal to link the planned curriculum with the operational one within the local context. The key features of the strategy are a systematic approach carefully linked with context and an appropriate social structure generated through staff training and personal leadership by the advisor.

Part four presents implementation and the emergence of a new model of institute development and improvement in technical and vocational education, particularly in the FE/HE sector in a developing country with project evaluation showing that the project goal was achieved in various schools of the Institute in accordance with stakeholder motivation and readiness to learn.

Part five presents the emerging thesis and my professional learning.

PART ONE

Creating The Learning Situation

The Project Context

This section is based on my later experience of the Institute for four years and my early interviews with a selection of teachers, heads of schools and the top management within the Institute and the perusal of the available documentary evidence. Due to lack of time and resources at the beginning of the project I could not seek the active involvement of the people from the ministry of education, the industry and other information available from outside the Institute in preparing my initial report. In fact the whole project began with a vague idea,

which unfolded gradually with continued clarity to generate the following personal accounts supported with sufficient evidence in the appendices.

The following contextual analysis includes the major positive and negative influences on this project and how I negotiated these forces to generate a learning situation for the project participants. I believe my embodied contextual sensitivity and belief in ethical values provided me with the deep motivation to undertake such a role without regards for personal rewards.

The Institute

The British had set up The Fiji institute of Technology (FIT) 25 years earlier. Previously it was known as Derrick Institute of Technology. Historically the expatriate teaching staff and the management had used imported curriculum and enjoyed a considerable autonomy without much accountability to the Ministry of Education. This is the typical history of several technical institutes in developing countries. The F.I.T. was still operating under this legacy of its past.

After independence the country was gradually attempting to localise the staff and the curriculum of the Institute without a clear national policy, finance and technical expertise. The country relied heavily on assistance from aid agencies. For instance, before my arrival two U.E.S.C.O. consultants had been working in this Institute for four years. Sadly there were no written records of their work when I arrived. According to the informal sources, these consultants had established the organisation structure of the Institute, a system for examining students and a programme for training teachers. They did not attempt to improve the quality of curriculum, the core of the life an institution. That is what I had to do.

When I arrived, the Institute was surviving under very difficult conditions. The management was merely keep the institute going. There was a little advisory support from the ministry of education administering the institute and financial support from the industry benefiting from the output of the institute. The teaching staff and the management of the institute were left to design, conduct and evaluate all trade and technician programmes offered at the institute with a little accountability and a policy framework. Few people at the Institute had the ability to handle such a responsibility. The so-called planned curriculum was in the form of content-based syllabuses mostly imported from developed countries. The ministry of education lacked suitable persons to guide curriculum development in the technical Institute.

The institute had ten schools engaged in different trade and technician courses: Building and Civil Engineering, Mechanical Engineering, Electrical Engineering, Auto Engineering, the School of Printing, Hotel and Catering, General studies, Marine Engineering and Agriculture with approximately 300 members of the teaching staff and 3000 students. Heads of school with support from senior lecturers, lecturers and assistant lecturers managed each school.

An Academic Board comprised of the principal, the vice-principal, an administration officer, heads of schools and one member of the teaching staff from each school dealt with all academic matters collectively. Representatives of the industry and the education department were not present on this Board. This board served as an internal co-ordinating unit for the Institute as a whole. The central administration included the principal, the vice-principal and the administration officer. The principal, like the advisor, had just joined the Institute. The central administration dealt with policy matters and liased with the external environment interacting with the Institute. About 10% of the senior teaching staff and the heads of schools were expatriates.

The principal and the senior lecturers were the most experienced people, while most of the heads of schools and the lecturers were young and inexperienced people recently promoted in their current positions. Most of the lecturers had attended a training programme started by the UNESCO advisors to provide them with a Qualified Teacher Status. Often there was a shortage of staff in all schools heavily relying on temporary staff. Generally staff to student ratio was of one teacher for ten students, a normal ratio in a traditional technical institute. According to my professional judgement students were adequately qualified for entry into various courses and they were motivated to learn.

In short, the **positive forces** included experienced principal, senior lecturers, academically qualified and motivated students, inexperienced yet motivated teaching staff with adequate buildings and equipment, organisation structure, teacher training facilities and availability of foreign aid in various forms from various countries. The **negative forces** included heavy workload on the teaching staff, lack of a clear national policy and expertise for the development of the only national Institute, use of imported curriculum, staff autonomy without accountability, shortage of funds for consumables, teaching-learning resources and a weak link with the industry and the ministry of education. In this situation localisation of curriculum and staff was indeed a daunting task for the Institute and the advisor.

The Advisor

At that time advisory roles were little known to me, to the aid agency and to the host institution as narrated below. My role evolved with the project as a result of a very complex and an unusual process.

Before the arrival of the advisor the government of the host country approached the Commonwealth Secretariat in London for an advisor in curriculum and staff development. As a result of lengthy negotiations between the parties to fix advisor's duties, the advisor finally arrived in February 1982. The brief provided to the advisor by the Commonwealth Secretariat was in the form of a list of duties including giving advice to the heads of schools in mounting new courses in engineering and to be actively involved in staff development focused on a teacher training programme offered at the Institute. The Advisor was to be responsible to the principal as a technician hired to carry out his instructions with a title of an advisor.

Like me, the principal was also not familiar with the advisory roles and the real problem of the Institute. He himself had recently joined the Institute with non-technical background but with a sound administrative experience from schools. When the advisor met the principal for the first time, he decided to use the advisor as an extra teacher needed in the school of Building and Civil Engineering and as a part-time teacher on a teacher-training programme mentioned above. He wanted to reduce my advisory role as a curriculum and staff development specialist to that of a teacher to solve their immediate problem of the shortage of staff in his Institute.

I had to make a choice between accepting the technician role provided in my brief or to adopt a professional role proactively to explore the problem and solve it collaboratively with the management and the teachers of the Institute. I decided to take the second option. This project aims to show that Advisors/consultants cannot make lasting contribution towards their personal professional development and the development of an institute without a clear understanding of the real client problem as an essential part of an integrated strategy to find an appropriate solution. This project shows that contrary to the common practices amongst aid agencies and the host countries the advisory roles are difficult to define in advance of any aid project.

The principal assumed the administrative role and I accepted the professional role to provide leadership in curriculum and staff development with teacher cooperation. However, my technical competence and character was put to test before the principal accepted my new role as a professional advisor. Later the principal placed his full trust in me as an advisor and a

colleague. I believe this combination of administrative, technical leadership and personal acumen at the top led to the remarkable achievements of this project.

After consulting all the interest groups I first prepared a formal report on the developmental needs of the institute with recommendations for a formal policy in a document entitled**:** *"F. I. T. - present, problems and promise."* This document, with a few later amendments, became the joint mission for the future development of the Institute.

I believe that my embodied technical competence and personal character based on ethical values provided me with the **trust and cooperation** of the teaching staff and the management. Without a hard earned credibility with the host institution and active principal's support from inside I could not have made a significant impact on this institute.

Within this context my role and the development problem changed into a learning situation for all the participants. Thus, I managed to set up a learning situation for the management, teachers, and for myself. I believe this is the role of professionals in curriculum and institute development. The following accounts present the interaction between my self as an advisor and the context of the Institute during the life of the project.

Understanding The Curriculum Development Problem

The general problem was to guide the institute in offering training programmes suitable for the local context. This case study illuminates the complexity of this task to the stakeholders. When I undertook this assignment, most of the literature on instruction and curriculum planning was prescriptive. Past curriculum development projects in the UK were considered to have failed to produce anticipated results in education generally. This failure was being attributed to the fact that curriculum development was not based on the work of teachers and schools (see Hirst 1980, Kelly 1980, Elbaz 1981, Handler 1982, Westbury 1983). In fact there was no theory of curriculum development grounded in the work of teachers. So I decided to create such a theory from RESEARCH ON TEACHERS' THOUGHT PROCESSES (Clark and Yinger 1977, Shavelson and Stern 1981, Calderhead 1984, Clark and Peterson 1986) and my own studies of teachers' planning in the Institute.

This research was based on cognitive psychology and it had begun to explore how primary and secondary teachers translated the planned curriculum into teaching acts. This translation process was conceptualised as **teachers' planning** (Zumwalt 1983, Clark and Peterson 1986). According to Clark and Peterson 1986 as a subject of research, planning had been defined in two ways. First, planning was viewed as a psychological process in which a person thinks about the future action before acting. This view draws on research from cognitive psychology. Secondly, planning was viewed as what teachers do when they say they are planning. The second view uses ethnographic approach in which teachers become informants to researchers. I used the second approach to conduct my inquiries.

The Tyler Model (1949), used in vocational education at that time, was used to interpret the studies. According to the limited exploratory research at that time, teachers' planning was a framework for action and the Tyler model (1949) did not describe teachers' planning often commencing with context, not with objectives as suggested in the Tyler model. Teachers' planning was like a design process involving problem finding and problem solving. Teachers seemed to be owning and contextualising the planned curriculum by fitting the planned curriculum to their own abilities, to the needs of their students, and the available resources. Effects of teacher planning on student learning were unknown and planning was generally undervalued in schools and teachers lacked time and training to plan their work. On the whole the findings of the studies provided a sketchy and a partial picture of teachers' planning from exploratory studies often conducted under laboratory conditions with mixed groups of teachers.

In short most of the research on teachers' planning both in the U.K. and the U.S.A. had been conducted in primary and secondary schools on small numbers of volunteer teachers with a few exceptions such as Sardo-Brown (1990) and Taylor (1970). According to Yinger (1987) this research was not mature enough to suggest the best way to plan. I decided to conduct a large number of studies to explore all aspects of vocational teachers' instructional planning in a real setting over a long period. My ten studies filled this gap and extend research on teachers' planning into vocational and technical education and training in the FE/HE sector where no such studies had been conducted at that time. My studies had three main goals:

1. To describe teachers' planning practices in the Institute.
2. To understand teachers planning problems.
3. To explore the possibility of using research on teachers planning as a guide for curriculum development.

I translated these goals into the following specific questions:

1. How was teachers' planning defined?
2. What did teachers plan in their work?
3. How did they plan their work?
4. Why did they plan their work?
5. What were the effects of their planning?
6. What problems did they encounter?
7. What could be done to overcome these problems?

Part Two

Early Research on Teachers' Planning, Advisor's Research Methodology& An Overview of Ten Studies of Teachers' Planning

Early Research on Teachers' Thought Processes

It might be useful to the reader to understand the nature of research on Teachers' Thought Processes before understanding my research methodology. A methodology is a meta-level investigation of limitations, resources and presuppositions of methods, aimed at understanding the process of inquiry rather than the product (Robinson 1993, p.13).

Research on teachers' planning was an integral part of 'Research on Teachers' Thought Processes' (Clark and Peterson 1986). The thinking, planning and decision-making of teachers' constitute a large part of curriculum implementation process. These were the fundamental assumptions behind the literature that came to be known as **Research on Teachers' Thought Processes** and this research aimed to describe the mental lives of teachers and explain teachers' behaviour in teaching. This research had emerged to complement research on teacher behaviour in teaching at that time (Paterson and Walberg 1979).

This research depended mainly on teachers' self-reports. To gather valid and reliable self-reports was its main problem. At that time researchers, usually teacher educators, used various combinations of five methods namely thinking loud, stimulated recall, policy capturing, journal keeping, and repertory grid with field observations and interviews. Findings of this research were remarkably consistent and complementary. However, these findings were the interpretations of the researchers, not those of the researched.

The research began with the cognitive psychology of teachers. The researcher assumed that teachers operated physicians engaged in solving educational problems by making many decisions. Later Research showed that teachers did not make many decisions. Research on Teachers' Thought Processes has greatly expanded recently. Calderhead (1996) has reviewed research conducted during the period 1985-1992.This period is especially characterised with emphasis on the content and nature of teachers' knowledge and beliefs and the processes involved in the growth of this knowledge.

This research had several unresolved issues. For instance, thought-action relationship was not clearly understood. According to Skinner 1968, 80% of human behaviour is conditioned. Ryle (1949) cogently argued that action and thought were not separate. According to Stenhouse 1980, Elliott, 1998 theory does not always precede action. According to this philosophy, **only through personal participation in the struggle to change reality can you uncover the essence of that thing or class of things and comprehend them.** Furthermore, it was not clear if thought was necessary for enhancing the quality of action (McNamara, 1990). For instance, expert action is often spontaneous and it is not thoughtful. In short the relationship between teacher thoughts, actions, attitudes, and beliefs is difficult to unravel.

Some human knowledge is tacit knowledge, some people have difficulty in expressing their thoughts and others might say what the researchers want to hear. We knew little about how practitioners held their professional knowledge and how they used it. However, if I had to guide teachers to improve their practice we had to know what they were already thinking and doing.

I observed from personal experience as a teacher educator that most of teachers' practical knowledge was contextual and perceptual. It was in the form of insights held as cases, analogies, routines, stories, procedures, beliefs and so. Teachers recalled and used this knowledge in similar contexts and they found it very difficult to articulate their knowledge. Teachers operated in environments where individual action was valued at the expense of talking and writing about their practice. Capturing reality of teacher's work from teachers' thoughts was a difficult task. At best it was a clever reconstruction of reality as an honest lie.

Early researchers mixed samples from different training programme and teachers of different grades in teaching. Differences in teacher training and the influence of context on teachers' work were not addressed. However, there was a remarkable consistency in research reports but, it could have been due to the researchers' shared perceptions.

The value of this research to improve practice was not clear. According to Clark (1986), although his research on teachers' planning originated in psychology, later some curriculum people began to see the possibility of understanding the work of teachers necessary to link the planned curriculum to the operational one, known as instructional development. I might have been the first person to explore the possibility of extending this research to curriculum development in vocational education and training**.**

The early educational technology with focus on methods and media in instruction development offered ready-made solutions borrowed from other disciplines to undefined problems in education (See Punia 1978). Consequently educational technology had largely failed to reach classroom teaching. Later on educational technologists also began to explore teachers' planning to understand why teachers did not use their prescriptive models. For instance, an entire issue of the journal of Instructional Technology of March 1994 was devoted to 'Instructional Design and the Classroom Teacher'. They too were searching for teacher-friendly models of instruction development (see Moallem and Earl 1998).

My Research Methodology: A Practitioner's Research

In the light of the then state of research on Teachers' Thought Processes, I thought it appropriate to conduct my studies with homogenous groups of technical teachers in vocational education in a particular setting over a long period. I assumed that a long participant observation combined with teacher reports collected over a long period in one context would provide reasonable reliability and validity.

My assumptions about the nature of teachers' knowledge

1.Teachers have practical knowledge derived from practice, which could be captured in the form of documents, cases, incidents, and stories (Elbaz 1981, 1991,Calderhead 1988).

2.Teachers talk about their work in non-threatening environments with people they can trust (Day (1991).

3. Teachers are suspicious of research and the researchers unless research is valuable to them and/or the research and the researchers become an integral part of their professional lives (Stenhouse 1975).

4.The advisor considered teachers' planning as thought-action interface comprised of three-phased spiral comprised of preactive planning, interactive teaching and postactive reflections as a unitary process. It was a form of action research (Elliott, 1992), though unknown to me at

that time. All researchers at that time did not share this conception of teachers' planning. For instance, Calderhead (1984) described teachers' planning as preparation for teaching. Clark and Peterson (1986) reviewed teachers' preactive thoughts and postactive reflections separately from interactive thoughts. However, later researchers such as Boroko et. al. (1990), Day (1991), Westerman (1991), Moallem and Earl (1998) share my conception of teachers' planning as a reflective practice.

Principles adopted in my Research Methodology

Nine studies conducted at F.I.T. were integral parts of teacher training I conducted within FIT. The researcher, the researched and the research were an integral part of teacher training. This is what I called practitioner's research at that time. This research was highly opportunistic in nature. Each study had its own goals and it was conducted at different times as opportunity arose during sessions. The following principles of procedure marked my studies.

1. I used the principle of successive focusing (Parlett and Hamilton 1976) and triangulation to understand teachers' planning practices. For example, the first two studies focused on the operational curriculum in general and the next two studies focused on lesson plans. The next two studies focused on teachers' post-active reflections and teachers' planning problems. The last three studies examined teachers' perceptions of good students and teachers.

2. Timing of studies was opportunistic.

3. Data-gathering instruments were based on personal experience and literature on instructional planning. To be meaningful to the respondents I used simple language and instruments to capture teacher thoughts.

4. Data came from homogeneous groups of vocational teachers during training sessions and all teachers participated in each study.

5. The researcher and researched interpreted the data jointly.

6. To provide a degree of reliability to teacher reports I repeated some questions in various studies and used a variety of data collection techniques.

7. With the exception of two studies based on questionnaires, the other studies were based on specific cases.

8. It was a form of collaborative action research with a dialectical relationship between thoughts and action to improve practice.

9. The research findings were used to understand the operational curriculum, development of a strategy to link the planned curriculum with the operational one and testing the strategy for effectiveness. This form of research later became action research.

Some Problems with my Research Methodology

My research was difficult to plan and it was context-dependent. It combined informal data from participant observations with formal data gathered from teacher reports. It made it necessary for me to be a participant observer and data processing proved a very laborious process. To capture teachers' tacit knowledge, particularly the knowledge of the context, in-depth interviews with small samples of selected teachers might have been more appropriate. Video recordings and stimulated recall interviews would have been better to capture teachers' interactive thoughts. However, in my studies, I had access to this information through samples of teachers' written pre-active plans and teacher observations during interactive teaching as integral parts of teacher training programmes.

Other research models are available for future research by outsiders. A survey with the use of an appropriate questionnaire coded for computer analysis is possible with carefully selected samples of teachers. In-depth interviews might be used to support the survey. This research model might provide quicker results, probably without similar reliability and validity.

During the progress of the project I prepared informal reports for the practitioners. The initial research served its purpose in providing information to solve an ill-structured problem and the findings were duly shared amongst the participants and the relevant stakeholders. In my view these are the typical features of practitioners' research. However, it took me one year to write the MPhil dissertation (Punia 1992) for the academic community at my own expense and time after the completion of the FIT project. Therefore, making this type of practitioner's research public remains an important issue.

My research did not provide a complete picture of teachers' plans linking the operational curriculum to the planned one. To accomplish this task fully the future researchers should explore teachers' departmental timetables, yearly plans, unit plans and lesson plans as a unitary process of a carefully selected sample of teachers. **A systematic inquiry to explore**

the link between the planned curriculum and teachers' plans remains an important area for future research. My studies remain exploratory inquiries.

Criteria Used to Assure Quality

In spite of some of the drawbacks of my practitioner's methodology, it met the following criteria (Day (1991) proposed for professional researchers engaged in this type of work.

1.Equity in teacher and researcher relationships.

2. Research relevance to meet teacher needs.

3.The researcher status is clearly understood.

4. Researcher intellectual, technical and human relations' skills.

The findings of the studies proved remarkably consistent, suggesting a degree of reliability. The findings were later validated and used in guiding practice. According to Stenhouse (1975) research has to be an integral part of teaching and teachers ought to study their own work. In later years this kind of research became known as Action Research (Elliott 1992, Whitehead (1993). My research was a form of collaborative action research by an advisor, the management and the staff of an institute. However, I was not familiar with this kind of research at that time.

Professional Significance of this Research for Future Research

This exploratory research opened up important ideas for future studies. Firstly, teachers' tacit knowledge of context needs to be explored fully. A better understanding of the context has the potential to solve several institutional problems. Secondly, it might be fruitful for teachers in the F/E to explore curriculum development from students' perspective using similar methodologies. In competency based curriculum development now the onus of curriculum development is placed on training providers and the student who are expected to plan, implement and evaluate their teaching-learning experiences. Lastly, it would be useful to study teachers' planning as an integral part of the corporate plans of the departments and colleges in the Further and Higher Education sector. Teachers' planning may have been the missing link in the past curriculum development projects.

In my view this type of research is particularly suitable for consultants and teacher educators as outsiders engaged in solving educational problems in real settings collaboratively with

insiders. Robinson (1993) proposed a similar model. At the time of advisor's studies, Reynolds and Saunders (1987) of the University of Lancaster were studying teachers' responses to a top-down curriculum policy in the U.K. This is what they wrote about the gap between the planned curriculum and the operational curriculum with particular emphasis on the need to understand the nature of the operational curriculum to close this gap.

This disassociation makes it difficult to articulate curriculum competence: the inevitable trade-offs between aims and actualities–by skilled arrangement of constraints and opportunities and through juggling of time, energy and resources- that teachers have to bring about. Such trade–offs, which become routinised and accepted, structure and characterise the operative (rather than the espoused) curriculum of individual schools. It is the operative rather than documented curriculum of the school that most needs perceptive analysis and management, and that depend on developing a capacity for reflexive negotiation of practices. (Reynolds and Saunders 1987, P. 213.)

We still do not understand the nature of the operational curriculum from teachers' perspective fully. My work was an early attempt to understand the operational curriculum from teacher perspective to link it with the planned curriculum from a consultant's perspective.

The following ten studies provided me with insights into the nature of the operational curriculum at the Fiji institute of technology and added much to my professional knowledge as a teacher educator and curriculum development advisor. Most importantly, the studies produced knowledge required to improve practice and this knowledge produced the anticipated results.

THE TEN STUDIES OF TEACHERS' PLANNING

1. Systematic Instructional Planning Using the Tyler Model (1949): promise, problems and suggestions to overcome the problems according to a group of trainee teachers from the Hong Kong Technical Teachers' college (HTTC).

The first study made me conscious of the gap between theory and practice in teacher education. Twenty- seven inservice assistant lecturers, lecturers and senior lecturers attending part-time Technical Teachers' Certificate course participated in this study. I taught these teachers to plan their work systematically using the Tyler model (1949) as a guide and to prepare yearly and lesson plans as a nested process. During training sessions some teachers argued against the use of systematic instructional planning using the Tyler model (1949). At

the end of the unit on instructional planning I asked the participants to write an essay to evaluate the usefulness of the unit for their planning practices. I aimed to understand the nature of the gap between theory and practice in instructional planning. The structured essay title read:

Give an account of instructional planning in the light of your personal experience and what you have learnt from the course of instruction, including instructional planning principles, purpose, nature, techniques, problems and suggestions for its implementation.

Analysis of the content of the essays was laborious but useful. A simple questionnaire might have captured the same information quickly. I was surprised to find that the use of the Tyler model (1949) for instructional planning in school settings was problematic. Even vocational teachers working with the Technician Education Council curriculum based on the Tyler model (1949) found it difficult to operationalise it due to contextual constraints including lack of planning culture, lack of time to plan, and inadequate teacher training to plan their work. This study prompted me to examine teachers' reported planning problems in detail in other contexts. The following nine studies at the Fiji Institute of Technology followed this study when I became an advisor in curriculum and staff development at this institute. In these studies I was concerned to explore the nature of the operational curriculum as teachers' planning.

2. Instructional Planning at the Fiji Institute of Technology (F. I.T.)

The overall aim of this study was to explore present instructional planning practices during an introductory training session on instructional planning. Twenty senior lecturers from the FIT with 8-10 years of teaching experience at tertiary level teaching trade and technician students participated in this study. I obtained teacher comments in a structured discussion due to four reasons. Firstly, teacher responses were to be made openly. Secondly this work was to be done quickly. Thirdly, data was to be collected as an integral part of a training session on instructional planning about to start. Lastly, this method provided me with opportunities to probe deeply into teacher responses.

As the chairperson of the discussion group, I put each question to the entire group from a list I had prepared. Everyone expressed his views openly and frankly. I summarised the teacher comments and one of the participants recorded and checked accuracy. A day after the discussion the participants submitted samples of lesson plans, term plans and syllabuses they were using.

According to the teachers in this study FIT worked with imported curriculum in the form of syllabuses with course content and teachers implemented it without any external accountability and support. Teachers' planning included term and lesson plans prepared for the transmission of subject matter to their students within available time and other resources. Teachers' plans were idiosyncratic, prepared for personal use, partly written, and partly in teacher's mind. The management and the policy makers did not value teachers' planning, which was important to them. Teachers also reported that they had no time to plan their work during the working day. Only class contact counted as teaching workload. To provide some reliability to these findings I used a questionnaire to collect the same and additional data in the next study so that steps may be taken to improve the current situation.

3. Instructional planning at FIT: Its nature, extent, problems and solutions to improve the current situation

This study confirmed the findings of the previous study with suggestions to support and control instructional planning in future. The group of senior lecturers who participated in the second study participated in this study as well. This study provided me with a degree of reliability in the findings of the previous discussion and additional information about the nature and extent of teachers' planning. I asked the participants to complete a semi-structured questionnaire during a training session. I explained the intention of each question to make sure that the teachers understood the questions and all the respondents completed the questionnaire at the same place and at the same time.

According to this study, planning provided these teachers with self-confidence and sense of control over their work. The planned work finished in time and enhanced student motivation to learn. The major reported problems included lack of time to plan, heavy workload and lack of planning culture in the Institute generally. Teachers did not plan all their lessons. Probably some teachers did not plan at all. They proposed the following solutions to overcome these problems:

- Value good teachers and good classroom teaching.
- Provide time for teachers' planning.
- Design and implement a standard format for teachers' plans to overcome communication problem with their colleagues.
- Train teachers to plan their work adequately.
- Senior staff should support and control their subordinates.

- All teachers should be required to plan their work.

The last two studies provided me with the first breakthrough in the life of the FIT project. The senior staff participating in this study suggested to me to discuss findings of this study with the principal of FIT with intention to implement its findings. After discussions in the Academic Board of the institute most of commendations of this study were later accepted and put in practice.

The next four studies focus on various aspects of lesson planning, the most frequently reported instructional plan in the previous studies. The first two studies examined lesson as a whole and the last two studies focused on two specific aspects of teachers' lesson plans.

4. How Experienced Teachers planned their Lessons in FIT?

In this study experienced teachers' planning emerged as a form of action learning aimed at clear teaching. Sixteen in-service senior lecturers, the same group in the previous two studies, participated in this study as well. In this study I asked them to provide me with the life history of one of the lesson plans they had prepared and used during a week. I provided them with a structured questionnaire to guide descriptive writing. I later discovered that the terms *Task* and *Context* used in my questionnaire were not part of their repertoire of terms used in their lesson planning. The respondents submitted their written lesson plans to complement their comments also. I interpreted teacher reports and later presented my interpretation to the group for validation and clarification.

Experienced teachers' lesson planning was a reflective process comprised of preactive planning, interactive teaching and reflections on actions as an integrated process to learn from experience. Teachers' plans were sketchy, partly written and partly in teachers' mind and prepared for their personal use. These teachers seemed to be trying to fit the planned curriculum to suit themselves, their students, available time and other resources. Their plans consisted of teaching points with some reminders and time allocations. Their plans did not include lesson objectives: they were based on teaching process objectives.

As a result of this study I became conscious of the importance of training teachers as a form of reflective process comprised of teachers' preactive planning, interactive teaching and postactive reflection. As a teacher trainer in HKTTC I taught how and why of preactive planning based on the Tyler model (1949) and left implementation of their plans to teachers with some suggestions for implementation.

To improve the quality of classroom teaching with teachers' planning in FIT I had to find out how many inexperienced lecturers planned their work and to train these inservice teachers in all phases of teachers' planning. This new concern led to other studies reported next.

5. How Inexperienced Teachers Planned their Lessons in FIT?

Twenty in-service inexperienced lecturers attending the Technical Teachers' Certificate course at FIT completed a comprehensive questionnaire**.** This study aimed to capture teachers' current lesson planning practices to guide their further professional development in teachers' planning.

I explained each question of the questionnaire to the respondents before they completed it. This strategy proved useful to avoid the problems emerging from the use of a questionnaire, which had not been piloted before use. All the lecturers completed the questionnaire with inbuilt checks to enhance reliability of responses. The analysis of the questionnaire proved difficult. The method used in the previous study could have been more appropriate. However, the researcher intended to use a variety of methods to seek teacher responses.

Inexperienced teachers' planning had different goals and it was not a three-phased reflective process as described above. For most of these teachers lesson planning was merely a preparation before interactive teaching to provide them with confidence and sense of control over the learning environment during interactive teaching. These teachers had not learnt to relate their preactive plans to interactive teaching as many of them reported to finding their lesson plans counter-productive. According to my professional judgement these teachers needed further training and experience in lesson planning as a three-phased process as reported by the senior lecturers in the previous study.

As a result of this and the previous study I found that the quality of teachers' lesson planning practices in FIT varied considerably, often within the same group. As a result of this observation I developed the concept of stages in teachers' professional development and the development of the institutes. Beeby (1966) had first used the concept of stages of development in improving the quality of education in a developing country. According to him quality of education depended on the quality of teachers in a country. From the quality of teachers' lesson plans it seemed that these vocational teachers passed through three stages of professional development.

They started their career with personal **survival** in the early years of their teaching. With experience their concern changed **to efficient teaching. Some experienced teachers showed**

concern for the effects of their teaching on student learning objectives. In survival stage teachers' planning focused on their own personal concerns such as improving the quality of their content knowledge and establishing good relations with students. In efficient teaching they became concerned with the better use of time and acquisition of communication skills for efficient teaching. In effective teaching, teachers were concerned with the achievement of student learning objectives of the planned curriculum.

After this study we began to train teachers in relating their preactive plans to the reality of classroom teaching and to reflect on their teaching experience to improve their future plans. The next study provided me useful insights into reflections in and on-action during interactive teaching.

6. How a Group of Inexperienced Vocational Teachers Evaluated their Preactive Plans?

Sixteen lecturers from FIT attending the Technical Teachers training course participated in this study as an integral aspect of teacher training based on reflective thinking. I designed and provided them with a framework to guide their reflections on interactive teaching**.**

These teachers had already learnt to prepare lesson plans in writing. I decided to guide them in making effective use of their lesson plans during interactive teaching and in using them for postactive reflections. The teachers completed a questionnaire for one of their lessons each week to discuss the content of the questionnaire with their colleagues and myself as their tutor. This study was based on teachers' responses in one of these sessions.

I found that matching preactive plans to interactive teaching was difficult for these teachers. Most of them were matching lesson content to available time and student learning ability to learn at the same time. Some of them matched content with time. Others matched content with student ability. The reported causes of mismatch included inadequate teacher training, teacher inability to manage time and mixed ability classes. **According to them teacher preparedness to teach and student preparedness to learn were the prerequisites for a good fit between preactive planning and interactive teaching**. It meant that teachers' knowledge of student readiness to learn a lesson was essential for successful lesson plans.

The most significant lesson I learnt from this study was teachers needed a conceptual framework to learn from their experience. Without such a framework and written lesson plans they had great difficulty in reflecting on their plans systematically.

They reported to have learnt the importance of written plans for reflections in and on interactive teaching and the importance of building flexibility in their preactive plans. I learnt that if it was difficult for teachers to match their own preactive plans to their own interactive teaching, it might be extremely difficult to match the planned curriculum to the operational one in an institute.

It became obvious to me that trainee teachers needed professional guidance in solving their lesson planning problems during implementation of their preactive plans and I became involved in this task. This led me to the next study of teachers' problems in using their preactive plans in real settings.

7. Lesson Planning Implementation Problems of a Group of Inexperienced Vocational Teachers

This study taught me a useful strategy to support teachers' interactive teaching from a distance. Seventeen vocational lecturers with 0-3 years of teaching experience attending an in-service programme for a Technical Teachers' Certificate offered at F.I.T. were involved in this study. I asked each teacher to describe a significant problem in implementing their preactive lesson plans during each week and to bring it to a teacher training session for discussion with me and with colleagues. The respondents described their problems on a blanked questionnaire for six weeks. They reported the following problems in one week.

- Contextual problems including lack of need to plan and time to plan.
- Student problems including mixed-ability classes
- Teacher training problems including teacher's difficulty in matching objectives, content, method and student evaluation as an integrated system and experience and training in matching preactive plans to interactive teaching.

This study taught me that effectiveness of teachers' lessons depended on collaborative action from all the stakeholders such as teachers, students and the management of the Institute. It depended on teacher preparedness to teach, student preparedness to learn and availability of time and other resources teachers needed to teach effectively. However, there is no generally accepted definition of lesson effectiveness amongst policy makers, teacher trainers and teachers. The next study explored teachers' concerns and perception of effective lessons in real settings.

8. Vocational Teachers' Perceptions of Effective Lessons

Nineteen in-service vocational lecturers attending the Technical Teachers' Certificate programme participated in this study. I asked the teachers to describe one of their most successful lessons on a blanked questionnaire. They described: (1) the context of the lesson, (2) teacher behaviour during the lesson and (3) the effects of teacher behaviour on student learning.

These teachers reported that teacher's ability to achieve student involvement in the teaching- learning process and teachers' ability to present content to his students in a meaningful way were the most important ingredients of an effective lesson. There was no mention of student learning in terms of learning objectives from the planned curriculum.

From this study I learnt that teachers had a more realistic perception of their situation. It is indeed unreasonable to hold teachers responsible for the achievement of students' learning objectives without full co-operation and support from the students, the management, the industry and the policy makers. I later discussed this finding with other stakeholders at FIT to take an appropriate action.

In FIT teacher trainers assessed teacher performance in classroom teaching based on certain skills on a checklist. However the validity of these skills in practice had never been tested for practical use. In the next study I tried to capture teacher perception of teaching skills useful for interactive teaching.

9. Vocational Teachers' Perception of Teaching Skills in Effective Teaching.

The term skill had special meaning in this study. It meant elements of a lesson such as opening a lesson, closing a lesson, logical sequence in content and so on. Each element involved knowledge, skills and attitudes. Perhaps competence might be a better term to use instead of a skill. In this study I had two goals. Firstly, I wished to validate the criteria used to evaluate teachers' classroom teaching. Secondly, I wished to evaluate the content of the Microteaching programmes used to train teachers in teaching skills.

I asked twenty in-service trainee teachers to describe a case of an effective interactive teaching skill from their personal observation. I provided them with a blanked questionnaire. I listed and categorised the reported skills to analyse their reports. **The most frequently reported skills were the use of visual aids to improve teachers' explanations and the use of a variety of methods in lesson presentations to improve student involvement in the**

learning process. Again these teachers did not seem concerned with the achievement of leaning objectives. They were mainly concerned with pedagogical-content-knowledge, particularly to achieve student involvement in the teaching-learning process.

This study provided me with a useful list of teaching skills from teachers' perspective. Teachers in an earlier study had indicated that the lesson effectiveness largely depended on teacher preparedness to teach and student preparedness to learn. This statement prompted me to inquire into teachers' perception of a good student in the next study.

10. Vocational Teachers' Perception of Good Students

Twenty in-service trainee teachers from F.I.T participated in this study. I asked each participant to make a list of the attributes of a good student in their classes. I synthesised the individual lists with frequency counts of each item. Most frequently reported items were considered the most significant. I was aware of the limitations of this method. To provide a degree of reliability and validity, I thoroughly discussed the findings of the research with the group.

According to these teachers reports good students were interested in learning, punctual in attendance and they actively participated in the teaching process. This was the order of importance of these items. Interestingly the skills reported in the previous study were also directed towards these ends. They made no mention of student intelligence and success in examinations. Teacher responses in this study fitted the findings of the previous studies.

These studies extended my experience of teacher training and curriculum development significantly. I made use of it to improve the current situation in FIT (Punia 1992) They made a useful contribution towards professional knowledge base on curriculum development in vocational education and training. The next section presents my interpretation of these studies to illuminate the current state of curriculum development in FIT.

Part Three

Interpretation of The Studies, Development of The Curriculum Development Problem & Its Solution

Interpretation of The studies

This section outlines my major interpretations of the studies in relations to his aims of the studies.

1. The F.I.T. teachers used the imported syllabuses from a variety of sources, which did not fit local needs. The planned curriculum did not meet the criteria set in Stenhouse (1975). According to him, "curriculum is an attempt to communicate the essential principles and features of an educational proposal in such a form that it is open to critical scrutiny and capable of effective translation into practice" (P. 4).

2. Teachers implemented the imported curriculum without any support and control.

3. Teachers' prepared plans were for personal use. These plans were often idiosyncratic in form, partly written and partly in teachers' mind. Teachers' lesson planning consisted of problem finding and problem solving, very much like Schon's (1983) model of professional thinking.

4.There were marked differences in teachers' planning. Experienced teachers' planning was reflective, aimed at curriculum and teacher development. Untrained and inexperienced teachers planned to avoid problems during interactive teaching. They needed comprehensive training in instructional planning as action research. Generally teachers' concerns changed with experience from establishing good relation with students to pedagogy of clear teaching to effective teaching to achieve learning goals.

5. Teachers needed adequate time to plan, adequate training and on-the-job support. It was very difficult for teachers to match their preactive plans to their interactive teaching due to contextual constraints. Teachers also needed adequate support in the form of teaching-learning materials, adequate training in the use of multi-media and multi-modes of teaching and learning.

6.Teacher perception of effective teaching as transmission of knowledge, skills and attitudes had to include student guidance in the achievement of specific learning objectives.

The Curriculum Development Problem & Its Solution

According to Robinson (1993), determining the constraints structure in the problem and the criteria for its solution solves problems. Once this information becomes available, a strategy can be developed to solve the problem (Robinson 1993, Haig 1989). Ten studies of teachers' planning provided me with adequate information on the constraint structure and to define the curriculum development problem as a gap between the present and the desired state of curriculum in FIT (See figure 1).

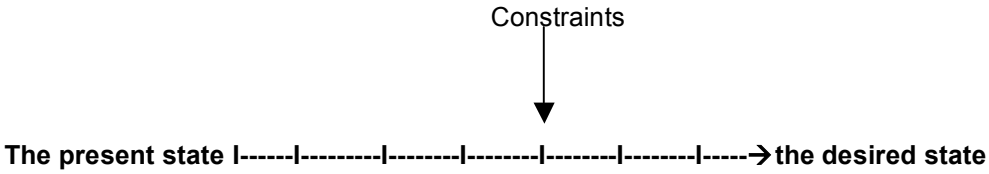

Fig 1- THE DEVELOPMENT PROBLEM AS CONSTRAINT STRUCTURE

According to the present state of curriculum development the planned content-based curriculum was not linked with the needs of the employers and students and the operational curriculum enacted by lecturers in classrooms was not linked with the planned curriculum. An integrated system involving the three components as conceptualised in Stenhouse 1975 was missing. If the Institute was to offer training programmes meeting the needs of the local context the planned curriculum and the operational curriculum had to match as in **fig. 2**.

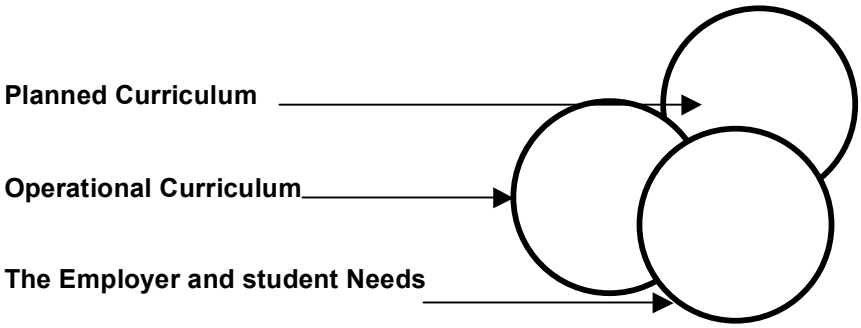

FIG 2-THE CURRICULUM DEVELOPMENT SOLUTION

It is difficult to match the three domains of **figure 2** in vocational education and training. An integrated system designed for continuous learning and improvement of curriculum was necessary. The next section presents how such a system was generated.

The School-based Curriculum Development Model

Based on the research the findings from teachers' planning as thought/action interface and the Tyler model 1949 I created the following model of institution-based curriculum development. The simplified version is illustrated and explained below in **fig 3**.

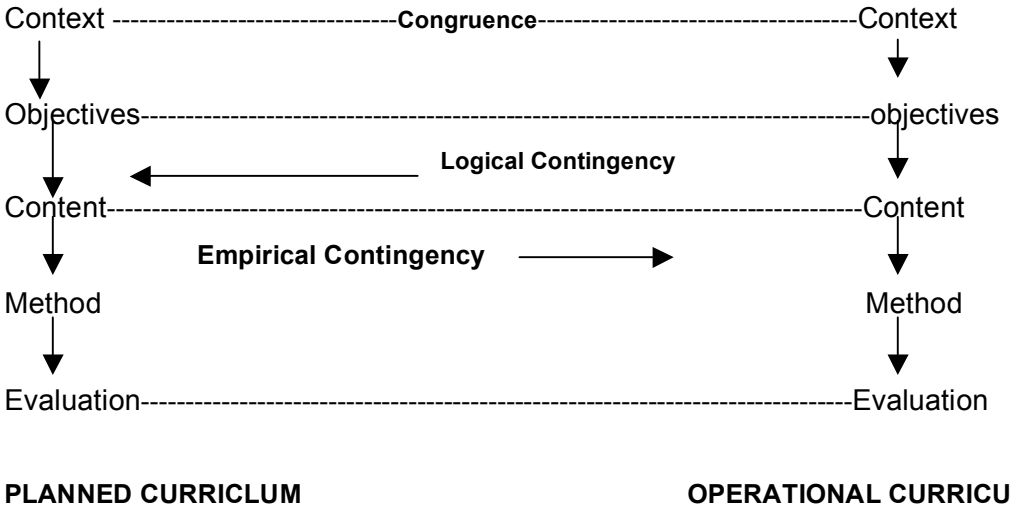

Fig 3- The School-Based Curriculum Development Model

I retained the use of the Tyler model with adaptation providing learning objectives as a useful tool to link the planned curriculum with employer and student needs. The above model is an extension of the Tyler Model (1949). The relationship between objectives, content, method and evaluation in this model **is a dialectical one, not linear as shown and there has to be consistency amongst the various components**. Unlike the Tyler model this model is more sensitive to the context, teacher ability, teacher support and to a collaborative culture amongst stakeholders to achieve the planned goals. Also the interaction between the operational and the planned curriculum is a dialectical one. And the planned curriculum influences the operational curriculum and mutual adaptation takes place between them. The management and the teachers monitor the gap between the two forms of curriculum with written records and reports.

This conceptual model first came to my notice from the experienced teachers' lesson planning described in study four. Later academic literature from elsewhere also validated this kind of thinking. For example, Stake (1967) first used the idea of comparing the "intended" curriculum to the "actual" curriculum in his countenance model of educational evaluation.

Skilbeck (1981) had proposed a prescriptive model for school-based curriculum development commencing with a thorough analysis of the context. Recently Marsh et al (1990) proposed a model for school-based curriculum development based on the analysis of a series of case studies. Their model emphasises the degree of stakeholder involvement and commitment to initiate curriculum change. Each model focuses on a specific factor in a particular situation.

The model in **figure 3** is different from other models. It is a form of action research in which teacher development and system development were integral parts of the development process. This model links the planned curriculum and the operational curriculum with the context and teacher development as an integrated and a dynamic system.

Institution-based models have some advantages and disadvantages. Curriculum development is likely to be less costly. The disadvantages include an idealised image of teacher professionalism; lack of public knowledge of curriculum development and exclusion of other interest groups from curriculum development. These disadvantages did not apply to this model. The top-down models, particularly imported from developed counties, do not match the local needs and culture and are difficult to adapt by the teachers.

The Principles of Procedure for implementing The SBCD Model

The first principle assumes distributed leadership in curriculum development. This principle is the basis of all the theories developed in this paper. Teamwork was a new experience for the management and the teachers of this institute working in a hierarchical organisation structure. For instance, when the findings of the studies were discussed in the Academic Board of FIT, the management agreed to support the teachers' planning in the form of more time to plan and training. However, they were reluctant to be involved with the operational curriculum. The teachers were quite happy to accept these concessions without any accountability and management involvement in their area of responsibility. This traditional structure had to be replaced with a new structure.

I cogently argued against the traditional assumption that teachers were responsible for the achievement of planned learning objectives. Teachers needed the co-operation and active involvement of the students, the management, the industry, the ministry and the advisor and other stakeholders as a team to achieve worthwhile learning objectives. After a long discussion and trust in the advisor to lead the management, the teachers agreed to work as a team as far possible.

There was a real need for teachers, the principal and the heads of schools to co-operate with me to tackle this problem. As mentioned earlier, the senior lecturers initiated the change for improvement. The principal was new to the Institute. He was anxious to make his mark on the Institute. Most importantly the management and the teachers had trust in the advisor to lead them in this task. **A good match between the insider and outsider relationships and a shared vision developed spontaneously.**

With the advent of the post-modern culture in industry and in schooling a collaborative culture may become easy to accomplish in future. In the bureaucratic public sectors it is extremely difficult to achieve such a culture. Hargeaves (1997) highlights this issue thus:

At the heart of ---- is a fundamental choice between restructuring as a bureaucratic control, where teachers are controlled and regulated to implement the mandates of others, and restructuring as professional empowerment, where teachers are supported encouraged and provided with newly structured opportunities to make improvements their own, in partnership with parents, principals and students (p. 341).

The situation in the Fiji Institute of Technology was a blend of bureaucratic control and professional empowerment. The participants to this project had to play new roles. The advisor was to provide leadership in the technology of change and training at all levels. The principal was to provide policy support and liase with the outside environment. Middle management was to be actively involved in curriculum development in their schools. The teachers were to focus on improving classroom teaching and learning as instructional development. The students, the industry and the ministry were to be consulted in decision-making, whenever necessary.

The second principle involved incremental strategy of development. The third principle stated that support and accountability were to go hand in hand. The fourth principle The focus of development was on the work of teachers. The fifth principle demanded a thorough knowledge of the context. Context provided opportunities and constraints in the development work. It meant that the Institute was to learn to meet the emerging needs from its environment and to be proactive in capitalising on emerging opportunities. The sixth principle required that the planned and operational curriculum had to be linked as a dialectical process designed for continuous improvement in response to changing context.

Part Four

Implementation of The Curriculum Development Strategy

To summarise, the nucleus of these changes was to improve the quality of classroom experience of students as operational curriculum by linking it with the planned curriculum as a form of action research in a collaborative culture amongst the management, the teaching staff and the advisor. It was a creative process.

I borrowed the implementation process from the construction industry from my previous experience as a project manager of construction projects. It was basically the design process architects use in construction projects. The sequence was largely determined by the interplay between constraints and the opportunities with sensitivity to local context and professionalism. The implementation process is fully presented in (Punia1992) with adequate evidence to support it. The changes in the planned and the operational curriculum are presented below with the possibility of a new model of school improvement and development.

The Planned Curriculum

The format of the planned curriculum changed from lists of topics and sub-topics to proper specifications of the context, the learning objectives, content/ subject matter, teaching-learning strategy and an appropriate assessment strategy as an integrated system. At that time the Technician Education Council (TEC) in the U.K. also used a similar format for the planned curriculum. Now validating bodies such as BTEC in the U.K. now demand more information in the documented planned curriculum. In addition to the information stated above, they demand information about the course management structure; course review and evaluation procedures; quality and quantity of required human and non-human resources; mechanisms to liase with receiving institutions.

The social structure of curriculum planning consisted of teams made of the senior staff from the Institute, industrial representatives, a representative from the ministry of education, heads of the school and the advisor. Team made decisions about the needs, aims, objectives, subjects/units, structure, teaching-learning strategy, student performance assessment strategy and student entry requirements for the various programmes. The trained teachers in various schools converted the team decisions into programme specifications. Once the Academic Board approved this preliminary design, it became an official document.

Later specifications for the individual units were written and added to the preliminary design. The documented planned curriculum included the preliminary design and the unit details bound together in one document. The Academic Board gave final approval to the final product. According to the principal the local industry and similar technical institutions overseas highly commended the format of the planned curriculum. This task involved much time and effort from teachers and other stakeholders but a large numbers of local educators gained the experience of curriculum planning through training and personal involvement.

Linking the Planned Curriculum and the Operational Curriculum

Teachers received adequate time and training to plan their work systematically. They decided to standardise the format of term plans, leaving the form of lesson plan to individual discretion. Most importantly teachers planning was to be a nested process, where short-term plans were to be consistent with the long-term plans.

The advisor designed a special **"Teachers' Record Book"** in which teachers kept brief records of what they planned, taught and deviations from the planned curriculum giving reasons for the deviations. I supported the system with formal training in implementing the system. I have described the whole system in a booklet called 'The Operational Curriculum' in IVTB.

The system achieved a moderate success within the available time. The teachers and management began to keep records and meet regularly to discuss problems. The emergent implementation problems included teacher reluctance for keeping records, lack of my time to guide the schools in implementing the system and lack of confidence of the senior staff in monitoring the work of the teachers. **This experience illuminated to me the need for programme directors/coordinators with adequate curriculum development training and experience**. The universities might train such people in the future. The system had a great potential to improve the quality of the planned and operational curriculum but it had not been used long enough when I left FIT.

Project Evaluation and Generation of Professional Knowledge

The Summative Evaluation by the Stakeholders

The project had inbuilt evaluations as an integral part of the principle of reflective practice in all interventions. At the end of this project, I held several half-day sessions with the

stakeholders of the project to evaluate the achievements, to learn from the experience and to generate and disseminate knowledge to the professional community in the form of seven papers. A few powerful indicators of the success of this project are presented next.

According to the employers the gap between the planned and the operational curriculum had closed considerably. According to the principal the failure rate amongst students had dropped from 20 % to 10%. And that this project was a mammoth staff development project. I am aware of the limitations of the evidence from the soft data. To measure the gap between the planned and the operational curriculum is difficult. However, it was not difficult to compare the format of the planned curriculum before and after change. Most importantly the principal began to report commendations from stakeholders on the work of the institute instead of previous criticism of the work of the institute.

The main beneficiaries of FIT project were the students, teachers, the management and the advisor involved in this project. This project had produced a large number of professional teachers, now scattered all over the world. They had learnt to improve their practice and themselves. A few years later the principal joined the advisor as a consultant on another project in another country. I later met several other members of the FIT staff from this project working as consultants for aid agencies. Some of them migrated to developed countries such as New Zealand, Australia and USA on the strength of their experience in this project. The project was a mammoth staff development project. The Institute changed from a reactive one to a proactive one. Here is a powerful indicator to support this statement.

Intermediate Evaluation by An External Team

Two years after the commencement of the project a new minister of education was appointed. According to some rumours this minister wanted to replace the principal of F.I.T by his own man. To gather public support he started to criticise the work of the Institute in his speeches and statements to the press.

Eventually he appointed a large committee headed by a man from New Zealand to evaluate the work of the institute and to report the findings to him. The Principal came to me for advice and to work out a strategy to handle this precarious situation. I assured the principal that the quality of the work in his institute was good under the present situation and that in an evaluation based on valid information, he had nothing to fear. The principal had full confidence in my judgement. However, he surprised me with his next move.

The members of the evaluation team came to the principal indicating their intentions to move about the institute freely to meet the teachers and the students to ask them open questions about the state of the institute. The principal refused their request on the grounds that it was not the way to evaluate the work of an institute. He made an alternative suggestion to the team. He asked the team to present to him in writing the in formation they needed to evaluate the work of the institute and that he would make sure that this information was made available to them. They were not to move about the institute without his permission. The Committee members reluctantly agreed to principal's request.

Next day he called all his senior staff to a meeting and informed them that the institute had every reason to be proud of its work and that here was an excellent opportunity for them to publicise their work. The advisor was astounded at the strategy of the principal to infuse positive attitude in his staff who seemed perturbed.

As mentioned above a considerable development work had been executed in the Institute systematically and all information was available to support it. The members of the team received the necessary information. They also met me to seek my opinion about the suitability of the principal to head the national institute. On the basis of the valid information the committee had to praise the work of the institute and a favourable report went to the minister. According to the people close to the minister, he threw the report in a waste-bin and dismissed the head of his evaluation committee. As predicted by the principal, the staff of the institute and the advisor received free publicity for its good work. This incident infused new life into the project and teaching staff became confident of their work under the leadership of the advisor. The Institute had indeed changed from being a reactive one into a proactive one, an accomplishment difficult to achieve.

Creating & Reporting Professional Knowledge

The production of knowledge is not a normal practice for advisors. CFTC, my employer, deserves commendation for encouraging such a practice in eighties. To make my contribution towards the professional knowledge base and to provide a base for future growth of the institute, I produced seven booklets containing the theory, practice, accomplishments and recommendations for the future development of the institute. The accounts of the various interventions involved in this project were fully detailed in seven booklets with the following titles and content.

(1) **The Planned Curriculum**: this paper presents the theory and practice used to prepare the planned curriculum in writing.
(2) **The Operational Curriculum**: this paper presents the framework used to link the planned and the operational curriculum with implementation results and the social structure generated to accomplish this task.
(3) **Student Performance Assessment**: This paper presents the theory and practice in integrating student assessment with curriculum development.
(4) **Evaluation**: this paper includes the various kinds of evaluations used for continuous improvement and public accountability.
(5) **Staff Development:** this paper presents the theory and practice of staff development as an integral part of curriculum development.
(6) **Educational Technology;** this paper presents the theory and practice of educational theory used to improve the quality of the operational curriculum in classrooms using a variety of methods and media in classroom teaching and the development of a Resource Centre.
(7) **Management of Change**: this paper provides glimpses into the philosophy, values, strategies and structures used in the management of change.

In addition to these booklets the Institute produced a monthly newsletter and an annual journal edited by me to make the knowledge public. According to the principal of the Institute these documents later proved invaluable to the host country in negotiating aid to continue the development work of the institute. FIT had become a Knowledge-Creating School and a learning organisation (Hargreaves 1999, Senge 1990) when I left this Institute in1985. However, Sadly the history of the country that followed these achievements failed to build on this work locally. But the people who participated in this project are in important positions in developed countries.

A Possible Model of Institute Development

Based on this experience I conceptualised institute improvement as an integrated system comprised of organisational structure, curriculum as creating learning experience for students and context as both a supporting and constraining system as illustrated in **figure 4**. The three circles rarely match in practice. The main task of leadership in educational institutions is to ensure adequate consistency in these vital sub-systems of the system as a whole. The three components are always in flux with a dialectical relationship amongst them. Monitoring requires technical competence in curriculum development, contextual knowledge and professional judgement from moment to moment.

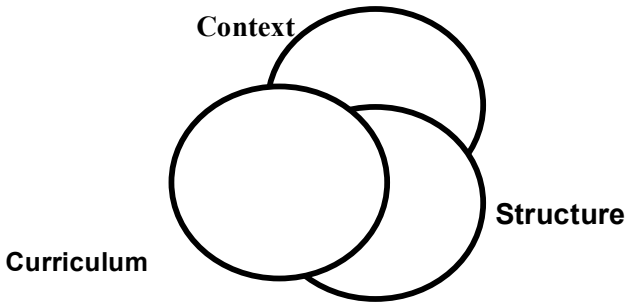

Fig 4: The Institute Development Model

Part Five

The Emergent Thesis & My Professional Learning

The emergent thesis is that in the past curriculum development projects, teachers' planning may have been the missing link. The use of the Tyler model (1949) based on rational thinking considered appropriate for curriculum development for vocational education is fraught with difficulties for implementers in public institutions. It focuses on system development without a due regard for people and other contextual influences. To overcome these difficulties a new theory of curriculum, staff and institute development emerges from teachers' and curriculum planners' perspective with the following features.

1. Teacher development, curriculum development system and context are integral aspects of the institute improvement as a social experiment.
2. A collaborative culture amongst stakeholders is a necessary condition.
3. Teachers, like other professionals, need external professional support, time to reflect on their work and adequate professional training and materials.
4. Teachers' planning is the nucleus of curriculum, staff and institute development.

Stenhouse (1975) declared that there was no curriculum development without teacher development. The thesis of this paper transcends Stehouse (1975) thesis. Teacher development is not enough for curriculum development. **According to this paper there is no curriculum development without teacher, technology and context development as an integrated system.**

This theory is a useful alternative to current top-down policies for school development with focus on management development to control teachers, prescribed curriculum and a heavy machinery and cost to implement the prescribed curriculum. Such policies regard teachers as technicians hired to implement other people's ideas. Darling Hammond (1997) deplored this situation in the USA. She writes: **"By investing in large superstructures to control the work of teachers rather than in teachers themselves, we have sucked resources out of classrooms where they could make a difference" (P. 335).**

Here I have tried hard to share my personal experience with other professionals engaged in similar projects elsewhere. However, there are always some loose ends in every idea and words fail to capture the spirit of reality. The personal experiences of the teachers, the management and my self as an advisor were far richer than what is presented in this paper. Fullan and Stiegelbaur (1991) provide a useful closure to my accounts in this paper as follows:

Changing educational projects is difficult and we do not know about it. There are no short cuts and there is no substitute for directly engaging in improvement projects with others. Like most complex endeavours, in order to get better at change we have to practice it on purpose (P. 350).

My Professional Learning from The Experience As a Whole

Sarason (1990) argues that by the criterion of classroom impact, most classroom reforms had failed. He identifies two factors influencing this failure. First, the different components of educational reform have neither been conceived nor addressed as a whole in their relationships as a complex system. Secondly, major educational reform cannot be successful unless it addresses the power relationships between teachers, administrators, students, parents, researchers and so on. The success of the FIT project might be assessed by the extent to which we managed to address these two issues. According to my professional judgement this project used a systematic approach to tackle the problem holistically in a collaborative culture created to tackle the local problem. In FIT project the advisor and his collaborators managed to resolve these issues to a large extent and this paper presents how this task was achieved. Of course always there are some loose ends. In this perspective there is no curriculum development without institute development.

The conditions of this model for transfer elsewhere include collaborative social structure, technical competence and character of the advisors and the leadership of the principals to provide administrative support internally and externally from the local context. This project was essentially a principal and a consultant led project.

The principal of FIT was a prominent administrator but he lacked previous experience and technical competence to run a technical institute with a real problem of curriculum development. I had a collaborative nature and vast technical competence in curriculum development, staff development, management development, educational technology, student performance assessment and programme evaluation. Combination of character and competence is rather rare amongst advisors. The principal appreciated the professional expertise and character ethic of the advisor and the advisor appreciated the leadership qualities of the principal as the head of the Institute. In aid projects school-based curriculum development and school improvement without a collaborative relationship between a consultant and the head of an organisation might only be a pipe dream.

Institutions have their own strengths and weaknesses and they grow at their own pace. One solution to solve improvement problems from the top does not always work and often it becomes a lengthy and an expensive experiment. This case study does not present any easy solutions to improve educational institutions. However, it does show that the management and teachers with experienced consultants can achieve remarkable results in improving themselves, their schools for the benefits of their students provided they own and contextualize student learning problems in a culture of mutual co-operation and trust. Thus, such Institutions have the potential to become learning institutions and teachers to become professionals like doctors, engineers and so on. This project offers a significant paradigm shift from prescribing ready-made solutions based on rational thinking derived from prescriptive literature to solving ill-structured problems as a form of collaborative action research.

Research on teachers' planning presented teachers' theories on instructional and curriculum development. We need more research on teachers' planning as a nested process linked with institute development plans. In the past teachers' planning has been studied mainly in the context of direct teaching and hierarchical structures in schools. We need to study it in other contexts as well.

The industrial ideology of the twentieth century and the advent of free and compulsory education has disintegrated teachers' role as a professional. This disintegration is apparent in the emergence of various titles like policy makers, researchers, teacher trainers, educational technologists, teachers, examiners, evaluators, curriculum developers and so on. Lasting improvements in the teaching-learning process are difficult to achieve without putting the teacher's role together again. Collaboration and networking amongst professionals and all the stakeholders including the governments, employers, parents, students, teachers and other

allied professionals seems to be the only solution to the current problems of education of the present century. The alternative is to play the power game mainly designed to control each other for achieving selfish goals.

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