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ABSTRACT

There is a general agreement that academic standards in Papua New Guinea high schools are below those in many other countries. This paper will examine this problem generally and also in relation to the teaching of mathematics and science. At Goroka Teachers' College, which is the only teacher training college for secondary school teachers in Papua New Guinea, this has been recognised as a problem for many years. In the last few years a number of innovations have been attempted, some of which have tried to improve the quality of teachers and teaching I whilst others have been more concerned with producing sufficient teachers. This paper will attempt to describe five of these innovations which are:

1. The Conversion Course

2. The six month S.M.I. Course

3. The Double Subject Science Course

4. The additional year at Waigani

5. The Distance Education Advanced Diploma Course.

It is premature at this stage to comment in detail on the success of these attempts, but the continuing efforts by a number of different people underline the determination of the College to produce sufficient teachers and to improve academic standards, both within the College and amongst secondary teachers as a whole. An appendix to the paper summarises the main points of the paper.

The progress of five attempts to improve the quality of secondary teaching in Papua New Guinea.

W. P. Palmer, Goroka Teachers' College

Some Background Information

The first European contacts with what is now known as Papua New Guinea (PNG) took place in the early 1870's. By 1875 the first Mission primary schools had been started and education in Papua New Guinea remained largely a missionaries' preserve until the end of the Second World War. By 1962 a limited, but effective, system of primary education had been established throughout the country but there were only a few secondary schools and no tertiary institutions.

The United Nations Mission, led by Sir Hugh Foot, visited PNG, as New Guinea was then administered by Australia under a United Nations Mandate. The United Nations team were disappointed by the lack of educational progress and insisted on a rapid expansion of secondary education. They also insisted that planning for tertiary education should begin (Smith 1975). As a result the Currie Commission (1964) was set up and it recommended the establishment of a University for Papua New Guinea. Its recommendations were implemented and the University of Papua New Guinea took in its first preliminary year students in 1966.

Goroka Teachers' College (GTC) had been established as a primary teachers' college in 1960 and was upgraded to a secondary teachers' college in 1967, through it still continued for a few more years with some primary teachers' courses. (Solon, 1980). However it remained under the control of the Department of Education.

By 1971 only 138 out of a total of 869 secondary teachers were PNG nationals (Smith 1975, p. 38). The Commission of Inquiry under Sir Allen Brown (1971) made recommendations which eventually led to GTC being made responsible for the course leading to the Diploma in Secondary Teaching which now provides the bulk of secondary teachers for PNG's schools. These recommendations also led to GTC becoming incorporated in the University of Papua New Guinea on 1st January 1975. (Tinsley 1977). The precise status of GTC within the University still seems uncertain (Palmer 1984) but for all practical purposes it is as though GTC is simply another Faculty of the University on a separate campus. GTC is situated some 300 miles away from the Taurama and Waigani Campuses, which are both in Port Moresby, the capital of Papua New Guinea.

Goroka Teachers' College trains secondary school and technical college teachers. Although GTC is the main source of such teachers for the country's educational system, the Education Faculty at Waigani also trains about 10% or so of secondary teachers, but there appears to be a high

attrition rate amongst Waigani graduates so they make up only a very small proportion of the secondary teaching force.

The major point to note is that ‘Western Education’ above primary level is a very recent innovation and although this paper will in general be extremely critical of standards of education within the country, an equally valid viewpoint would focus on the very great achievements which have been made in the field of education. The next section will indicate what factors have affected standards of academic knowledge within the education system.

Standards

In the late 60's the secondary school curriculum was largely Australian with academic standards similar to those in Australia but the advent of Independence in 1975, the shortage of national teachers, and a sudden exodus of the experienced Australian expatriate teachers from schools, caused a radical rethinking about the curriculum. It should be noted however that although academic standards were then high, secondary education was confined to very few people. Thus the early 70's were a period of curriculum change in which subject areas were combined with one another and their content simplified.

Although very many plausible arguments have been put forward to explain this localisation of the curriculum, the fact was that the country could not afford to pay large numbers of Australian teachers to stay, nor could it train sufficient numbers of national teachers to the same standards in a few years. The curriculum had to be simplified so that it could be taught by national teachers with only a short period of training.

In addition, because of staff shortages and administrative difficulties in appointing specialist teachers to schools, ‘generalist teaching’ was implemented. A virtue was made out of necessity, as is described by Field (1981), but the introduction of generalist teaching had a strong adverse effect on academic standards. For generalist teaching, student teachers at GTC were trained in three subjects over the two year diploma course which allowed only six hours per week in each subject over three ten week terms per year.

In fact teachers were often asked to teach subjects for which they had received no training. Suggestions were even made to train all teachers in four subjects (Saul 1976), but fortunately this suggestion did not eventuate.

Generalist teaching, combined with many other practical problems such as lack of provision of equipment, books, curriculum materials etc, combined with a steady expansion of secondary education and a shortage of skilled and qualified staff, led to a general and continuous decline in academic standards throughout the late 1970's, from which the educational system may now just be recovering. This is, of course, partly a matter of opinion as little in the way of concrete evidence has been produced, though the next section of this paper will produce some evidence for believing that standards in mathematics and science have fallen.

A series of committees have looked at the problem of academic standards of which the most recent was the Kenehe Committee (1981). The Committee was asked to find out as one of their terms of reference whether standards had in fact risen or fallen. Bray (1982) has pointed out that they completely failed to do this, although the tenor of the report indicates that the Committee considered that standards had fallen, but this was never substantiated by evidence.

A further factor which the author considers contributed to the decline in standards was the examination system called the Mid Year Rating Examination (MYRE) which attempted to test general understanding rather than subject content. Secondary School students soon realised that there was little point in learning the course materials, as they would not be tested on them, and this contributed to the decline in standards.

More recently (1982) the Education Department scrapped the MYRE and replaced it with an examination near the end of the school year, based on the content of the subject syllabuses in core subjects. The author considers this a tremendous advance as it gives students the motivation to try to understand course materials. The examination is not ideal yet; for example it would be preferable to have some other format apart from multiple choice, but it is a great improvement.

The author is a science (chemistry) lecturer, so examples concerning the effects of policy on curriculum will frequently concern the Science curriculum. Science was particularly severely affected because of the nature of the subject, which demands problem solving skills, mathematical ability combined with the ability to recall considerable amounts of factual information. To meet the lower capabilities of teachers in the early 1970's, the science curriculum was changed by reducing its size and by introducing the idea of ‘non quantitative science’. For the physical sciences, in the author’s view, this simply makes a mockery of the subject, as almost all advances in the physical sciences are ultimately dependent on measurement.

What evidence is there then of low standards of achievement in Papua New Guinean secondary schools in mathematics and science?

Standards in Mathematics and Science

In mathematics, Ros has carried out a longitudinal survey of Grade 10 students by testing them each year since 1974 with a series of mastery tests. Scores have been comparatively low in PNG, particularly when compared with the results using the same test carried out on students at the same level in five other developing countries (Ros, 1981).

Ros (1983) indicates that he has found little significant change in mathematics standards at this level over the years, but this year Ros (1984) has found small but significant improvements in standards of mathematics at Grade 10 level.

Hayter (1982) has recently carried out a full study of the Provincial High School mathematics syllabus and considers the content at Grade 10 matched the 3rd Form (Grade 9) syllabus for CSE pupils in the United Kingdom. When comparing the mathematics and science curriculum, he indicates some areas of mismatch and points out that those new to PNG are surprised by the non-quantitative approach to the PNG Science curriculum. Indications that it may have been a mistake to remove so much of the quantitative work from the science curriculum leaving mathematics as practically the sole element of numerical work in the curriculum come from a variety of sources. For example, Ellis (1981, p. 27) explaining problems in training teachers in home economics writes that only half her classes at GTC seem able to divide by four when making dress patterns. All areas of the curriculum should stress numerical work and were this done we might not find science teachers who are prepared to express the following opinion seriously: 'The trouble with you is that you want to count everything. Why?' (Hayter, 1982).

Evidence with regard to standards in science at Grade 10 level is limited. Preliminary work on the Second International Science Survey (SISS) for field trials with comparatively small numbers indicated that questions suitable for Grade 8 students internationally might only by suitable for Grade 10 students in PNG. More reliable results for the study will not be available until next year. Also the staff in the science department at GTC have had experience of a number of other developing countries and are all agreed that teachers in secondary schools in most African countries would have a greater knowledge of science before being certificated as competent to teach. Shea (1978) sums up the research into science and mathematics achievement at various levels as follows, citing some nine different studies:

> Published studies of the achievement levels of PNG students have indicated major problems in the area of mathematics and science in spite of major attempts to produce adequate curricula. (Shea, 1978)

Ross (1982) who repeated a test first carried out in 1976 on mathematical and logical thinking (MLT) drew a number of conclusions, amongst which he states that 'there has been a decline in the mean level of performance in MLT since 1976'. This should be treated with some caution as there have been syllabus changes which may have affected the results, but taken with other research it is an indicator that PNG students still have considerable mathematical difficulties.

At university level, particularly within the fields relating to mathematics, science and engineering, there are many papers where the authors express concern at the quality of their intake with regard to their understanding of basic mathematical and scientific concepts. For example, in training students on a five year course in mineral technology, Blowers (1982) writes:

> Our standards are not as high as the majority of Universities in the developed world and must be improved. With most of our students we cannot reach, the standard we wish in the time allotted. There are too many problems being carried forward into the University.

> Problems with English - usually a second language- with mathematics - a lack of confidence in basic skills with study habits, expectations etc.
>
> The academic standard of students entering the course is too low. We are producing graduates who are a year or so behind their Western counterparts, but we are producing graduates on whom a great deal of training and teaching has been lavished. They are capable of doing a good job, but their training is not complete when they leave us. (Blowers, 1982)

In civil engineering Snell (1983) and Priest (1983) have expressed concern about the rote learning and survival techniques adopted by students who show a lack of understanding of basic mathematical processes.

Evidence also comes from the field of educational psychology, where a number of studies have been made of problems of understanding of Papua New Guinean students. In a recent paper by Wilson & Wilson (1983) referring to the Piagetian concept of the ability to think formally the authors write:-

> Teachers in PNG must be particularly careful not to assume a wider ability in formal thought among their pre and early tertiary level students than in fact exists. (Wilson & Wilson, 1983)

This section of the paper indicates that there are real problems in the understanding of mathematical and scientific concepts in PNG. There are some signs that standards in mathematics and science are slowly improving, but the author's view is that further improvement can only be achieved by improving the quality of secondary teaching and at the same time putting more mathematically based concepts into the secondary science syllabus. In other words there must be a greater emphasis on numeracy, on doing experiments in which objects are measured and for which numerical solutions are required. Speed at solving problems should also be encouraged as the small amount of material covered at lower levels causes university courses to take much longer than they would elsewhere, because much elementary material has to be repeated. Lengthy university courses are a luxury that the country cannot afford for ever. However, although there are faults in the secondary school system, many more fundamental problems lie within the primary school system. There is a good basic syllabus for science in primary schools (Wilson 1979), but shortage of resources and competent teachers limit the amount of effective learning that can take place, particularly in remote areas. The solutions to this problem however are beyond the scope of this paper.

Secondary Teacher Training in PNG

As previously stated almost all national secondary school teachers in PNG are trained at Goroka Teachers' College. Thus any suggestions for improved curricula in Provincial High Schools must

start off by tackling deficiencies in teacher training. Before expanding on this, the paper will just indicate the basic structure of the educational system in PNG.

Only sixty-four percent of PNG children actually start their six years of primary education at community schools, (1978 figures) whilst the remainder never get the opportunity. About one quarter of these drop out during their community schooling (Tuppen, p. 11) and about one third of those who sit the Grade 6 exams after community schooling will go on to a Provincial High School. The Provincial High School course lasts 4 years, covering Grades 7-10. After Grade 8 about sixty percent of high school students will be selected by internal assessment to go on to Grades 9 & 10, though this hurdle is in the process of being removed. In Grade 10, students take their school certificate examination which allows about ten to fifteen percent of those sitting the examinations to go on to National High School (Grades 11 and 12) or to University.

The intake of Goroka Teachers' College courses is partly recruited from Grade 10 students who do one year of preliminary studies and partly recruited from those who have successfully completed Grade 12. Both groups then complete a two year course of teacher training. The proportions of these two groups admitted to the College have changed considerably over the last seven years. The enrolment output figures for Goroka Teachers College for this period are as follows for the Diploma of Secondary Teaching courses.

TABLE COMPILED FROM INFORMATION BALDWIN (1983), DUNFEE (1983), AND NPO (1981).

Enrolment & output at GTC			Dip. S. T (1978-1984)			
	Students at Grade 10		Students at Grade 12	Agriculture Students	Total * Intake Dip. S.T	Students graduating Dip. S.T
Year	School leavers	Non-School leavers				
1978	122	-	56	-	178	119
1979	132	-	36	28	196	234
1980	93	-	34	20	147	195
1981	86	-	49	33	158	184
1982	101	18	73	37	229	142
1983	65	41	103	34	243	154
1984	32	12	84	35	263	(215)?

In the table above, the school leavers are students who come to College direct from school, whilst the non-school leavers are more mature students, who have not come directly from school. In the total intake* it should be noted that allowance not made for conversion course numbers within these figures.

The intake for students at Grade 10 level has been gradually diminishing, whilst that of students at Grade 12 level has been increasing. The question of which group performs better has been the subject of considerable research at UPNG (Murphy 1981), and Unitech (The University of Technology, Lae), (Jones and Wilson 1981), but the answers even for pure academic subjects are by no means clear cut. At GTC there are a variety of opinions varying with the teaching subject

being considered, with the more vigorous academic disciplines preferring a Grade 12 intake. The figures in the table above show that the trend is for the Grade l0 program to decrease anyway and if this trend continues the preliminary year will probably be phased out within the next few years.

In 1980 and 1981, particularly, there was great difficulty in obtaining sufficient students, and standards of entry were less strictly enforced However for 1983 and 1984 it has been possible to insist upon higher entry requirements, probably due to the effects of the 'world recession' as jobs have become more difficult to obtain. GTC has even had considerable numbers of mature students (see Non School Leavers in Table) some of whom are willing to pay their own fees. This situation thus parallels the case of teacher training in the United Kingdom (Hencke, 1978) and Howell (1980) where unfavourable economic conditions have increased the supply of teachers. However an important point derives from this, in that this paper will report a number of attempted innovations at GTC, yet in the end the straight forward economic factors which affect the supply of intelligent youngsters looking for a career may well be much more significant than our attempted innovations, both in the numbers and in the quality of teachers that GTC produces.

In terms of output of teachers, the National Planning Office (NPO 1981) expects GTC to produce about 170 secondary teachers per annum and expect the Education Faculty at UPNG Waigani to produce 40 graduate secondary teachers per year. Although the output from GTC has varied widely, it is close to the target set, whilst the Waigani output has been so low, that the total output of secondary teachers is well below the numbers required.

In the two year GTC Dip S.T. course, students may choose any two of the following subjects: Language Studies, Mathematics, Social Science, Science, Home Economics, Design & Technology, Commerce, Physical Education & Expressive Arts (three different Options). In addition to this students also have to take courses in Professional Studies, Language Skills and Arithmetical Skills. The year contains four terms, but the third term each year is entirely devoted to teaching practice in a provincial high school, whilst the other terms are spent on academic subjects. Assessment procedures vary widely between departments, and are based on a mixture of course work and tests, with some departments having additional examinations.

Agriculture is not offered on the two year Dip S.T. course, in spite of recommendations by Colyer (1981 p. 10), but a special one year teaching qualification is offered for those already qualified in Agriculture or Fisheries.

The paper has already indicated the reasons for concern about the quality of the teachers being produced at GTC. The major research in this area is by Guthrie (1983) who has tried to evaluate the comparative quality of GTC and Education Faculty (Waigani) graduates. Considering the shorter period of training which GTC graduates have, the conclusions which Guthrie (1983, p. 107) reaches reflect considerable credit on GTC graduates in the field:-

> The empirical findings of the evaluation clearly indicate that the approach to teacher training undertaken at Goroka Teachers' College is more successful in manpower terms than the Faculty of Education's and is as successful in professional acceptability terms. Guthrie (1983, p. 107)

However Guthrie also finds that GTC graduates lack academic knowledge and that this lack of knowledge is due to the comparatively short period of training they receive. The conclusion is that the only real means of obtaining a substantial improvement in quality in the secondary teaching force is to give all GTC students a three year course (as foreshadowed in the 1980 Rogers Report)

Although almost all parties accept this, the necessary finance to implement such a policy is just not available. This should explain to the reader why GTC has looked to a series of cheaper, smaller innovations which will now be described. What may be of interest is that most of these innovations have come directly as ideas by individual college staff and have come up from the 'grass roots' rather than being imposed from the top.

The Conversion Course

This one year course was started in 1977 to convert good primary school teachers into secondary school teachers, as there was a small surplus of primary school teachers and insufficient secondary school teachers. This innovation is different in nature from the others described in that it certainly did not aim to improve the academic quality of teaching and the idea originated within the Department of Education (Guthrie, 1983, p. 60) rather than within GTC. The course aimed to train the ex-primary school teachers to be able to teach grades 7 and 8 in Provincial High Schools. After some teething problems, mainly due to poor selection of candidates for the course, a steady but small stream of secondary school teachers was produced by the scheme. The scheme ran its full five year term, but only just, as there was considerable criticism of the ability of some of these teachers. The author's own experience after seeing some of these teachers in action is that the secondary school system has obtained some very good teachers, though many had considerable weaknesses in academic knowledge. Overall about 60 secondary teachers were produced, and the scheme can be considered at least a partial success.

The six month subject Masters In-Service

This course aimed to train experienced secondary school teachers in the organisational skills and knowledge required to run a department in a Provincial High School. After attending such a course they would be suitable for promotion to take charge of their subject in schools.

The success of the scheme was obviously dependent on choosing teachers of the right calibre to undertake them. Four SMI courses each for a different subject were arranged for 1981 and it was the intention to repeat this pattern each year thereafter, but in 1982 insufficient applicants were found, so only two courses actually took place. Thereafter no more SMI courses have been run.

Why did these courses fail? GTC believes the reason for the failure of these courses was insufficient publicity, the wrong applicants being chosen, administrative inefficiency and schools discouraging their teachers from taking part. Teachers point out that there was no salary increment after attending the course and no certainty of promotion. Schools point to the difficulty of funding replacement staff while someone is away for six months, and to the problems caused if the staff member leaves his family in a school house over that period.

This attempt at innovation certainly met a perceived need of teachers, yet it was unsuccessful. Since the reasons for its lack of success are known, it should be possible to organise future schemes in such a way that at least some of these difficulties are neutralised in the planning stages.

Double Subject Science Course

This course, in which students take only science p1us professional studies, language skills and arithmetical skills, can best be seen as the outcome of the historical trend to greater specialisation which has in general been espoused by GTC and opposed by the Department of Education eg.

> Clearly the administrative requirements of the country necessitate the preparation of secondary teachers for three subject areas. (Tololo, 1977).

Later in the same letter Tololo said he was prepared to make an exception in the case of mathematics and science, because research indicated that Papua New Guineans have great difficulty in reaching international standards in these subjects. Within two years GTC was training all students in just two subjects. After considerable efforts, described by Bunker and Palmer (1983) and (1984) the regulations for the course were approved by the University and the course started in February 1984. However in April 1984, after previously agreeing to allow the course, the Department of Education publicly threatened not to register the students enrolled in the course, so the students concerned changed courses to ensure registration as teachers. However the Department has conceded that fourteen hours science with not less than four hours mathematics would be acceptable to them, whereas the existing course had sixteen hours science and two hours mathematics. It is likely that a new course along the lines suggested by the Department of Education will be approved and will run as from 1985. A lesson does seem to have been learned from this as the Department of Education will send a representative to take part in the Faculty Planning Committee of GTC so that agreement is reached in the planning stages for new ventures.

Additional Year at Waigani

The scheme, which proposed that some forty of the best Goroka graduates each year should continue their studies at UPNG, Waigani, started in February 1984 with just two students. The proposal for the scheme, which was made formally to GTC in March 1983 (Core & Wilson) by the Faculty of Education Waigani, and supported by the Department of Education, caused

considerable dismay at GTC. The main justifications for the scheme were that there were about forty unused scholarships each year and under-utilisation of Waigani facilities, so the scheme would have no additional costs and should improve the quality of a few teachers each year. GTC argued that it too had under-utilised capacity, that students would find moving disruptive to their studies, that some established posts representing under-utilised facilities at Waigani could be transferred to Goroka, and most importantly that the setting up of the scheme would delay the time, when GTC offers its own degree courses and eventually becomes University of the Highlands of Papua New Guinea. (Rogers 1980). Opposition to the scheme was officially withdrawn in September 1983, when the proposers accepted that it would be an interim measure subject to yearly review.

This scheme certainly has as its central purpose the improvement of quality of some secondary teachers in Papua New Guinea and could be valuable were there within the scheme some mechanism for gradually moving the course, once established, from Waigani to GTC. At the present time however it represents an imposed solution and cannot yet claim any degree of success.

The Proposed Advanced Diploma Course by Distance Education

A proposal by Collins (1982) for a reorganisation of existing In-Service arrangements received comparatively little support when proposed. The Faculty Planning Committee of GTC reconsidered the proposals early in 1983 and with further input of several interested members of staff, including the Principal of GTC (Solon, 83), put forward a modified set of proposals to establish an In-Service Unit at GTC. These proposals were then considered by the Education III team, seemed in tune with their thinking (Education III Project 1983), and have now been accepted in principle as a part of the Education III Project. The proposals will cost in excess of one million kina over a five year period and aim at providing further academic background in one subject plus a course of professional studies for all GTC graduates still teaching in Provincial High Schools. If successful, they should improve the quality of the 1200 national teachers within the system across a broad range of subjects by means of a combination of correspondence education and residential courses. It is also aimed to ensure that some credit be given for successful completion of these courses towards the Waigani B.Ed degree so that further progress is possible.

The author notes that this important decision affecting the future of all Papua New Guinean teachers has come about not through administrative fiat from the top but from the ‘grassroots’, upwards. The University including GTC has been widely criticised for its ‘overdemocratic’ procedures in which most committee positions are elective; it has recently introduced legislation to ensure a more hierarchical system (Rogers, 1984, p.5). However, it should be made clear that this particular innovation, which has the potential to make a considerable change within the education system of Papua New Guinea, is very much a product of the democratic process.

Conclusion

With regard to the general outlines of the innovations described in this paper, there can be few general conclusions as the programs are different in type, structure and scale. Greater consultation with the Department of Education could well have led to greater success with some of these programs. In fact the Department of Education has now agreed to be represented at the Faculty Planning Committee of GTC so that it can influence the College's planning, and also be aware of suggested innovations at an early stage of planning.

Finally as Klassen (1982) points out ‘teacher education is a major element in a nation's hope for educational progress’. Papua New Guinea is no exception. Quality for teacher education should be the major goal but there are many problems in achieving this.

Similar advice to the above comes from a well known and experienced administrator (Beeby, 1967):-

> If I were asked to give the key points in which a developing country limited in funds and skilled manpower, might begin to improve the quality of its teaching in its schools I should choose;- 1. The training college. (Beeby, 1967)

Furthermore the former Prime Minister, Sir Julius Chan (1980), pointed out the need for high standards of technical competence in the modern sector of the economy with his remark that ‘There can be no Melanesian way to pilot an aeroplane’.

Goroka Teachers' College has tried to follow the advice above and has been conscientiously seeking out innovative ways to improve the quality of secondary teacher education in Papua New Guinea. Some of these innovations may be successful, but in the end only time will tell.

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APPENDIX I

A Summary of Major Points Made

1) General standards of education in Provincial High Schools in Papua New Guinea are extremely low.

2) Student's understanding in Science and Mathematics give particularly severe problems.

3) The way to improved learning is through improved teaching.

4) Teacher trainees in Papua New Guinea require a greater knowledge base to improve their teaching. Greater specialisation during teacher training should aid greater subject knowledge. Eventually this should allow new more demanding syllabuses to be introduced in schools, particularly in Mathematics and Science.

S) Inadequate and undemanding syllabuses combined with poor learning strategies by pupils at Provincial High Schools lead to long and expensive courses (including remedial work) in tertiary education.

6) There is a continuing shortage of applicants of reasonable calibre wishing to enter GTC, though this is not as severe as it has been.

7) In response to the problem of a shortage of suitable applicants, GTC, the Department of Education and the Faculty of Education have made a number of innovations described in the paper.

8) These innovations would not be necessary in an ideal world, but are a response of the failure of government to find what is now considered the best solution, which is a three year course for all students from Grade 12.

9) The innovations described have been allowed to go ahead as they all have low or zero costs.

10) The major conclusion to be drawn about the success or failure of the innovations described is that greater consultation would have led to greater success.

11) The democratic structure of GTC has allowed it to develop a series of flexible responses to problems of teacher education in PNG which would have been less likely in a more authoritarian system.