Technical Teacher Training

Report of a
Commonwealth Regional Workshop
Mombasa, Kenya
April 1980

Commonwealth Secretariat

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I N T R O D U C T I O N

One of the most serious problems affecting the development of technical education in the Commonwealth is the shortage of well qualified and experienced teachers. The Seventh Commonwealth Education Conference, held in Accra in 1977, recognised the urgency of this problem among others and recommended that the Commonwealth Secretariat should hold regional workshops with a training component to identify needs and priorities in the training of technical teachers. The Conference also requested the Commonwealth Secretariat to organise a programme of regional workshops on in-service primary and secondary teacher education throughout the Commonwealth. Three such workshops were organised by this Division in the period 1977-80 : in Barbados (1977), Sri Lanka (1978) and Swaziland (1979). The design of the workshop held in Mombasa in 1980 on in-service staff development in polytechnics, which is the subject of the present report, draws on the experience and conclusions of all three previous workshops.

One important correlation between the primary/secondary teacher workshops and the workshop on technical teacher training is the concern to find ways and means of renewing the skills and knowledge of teachers in order to meet the constantly changing demands of their vocation. As the Eighth Commonwealth Education Conference recognised, in-service teacher training carried out on a planned and systematic basis offers a practical way to satisfy such a need.

The choice of the Africa Region to host this workshop was largely due to the existence of the newly formed Commonwealth Association of Polytechnics in Africa (CAPA). This regional association, based in Nairobi, Kenya, was established in December 1978 following a recommendation of the Seventh Commonwealth Education Conference. Staff development in the member institutions of CAPA is a major element in the aims and objectives of the Association and its Executive Board welcomed the opportunity to collaborate with the Education Division in the planning and execution of the workshop.

Participants included principals and senior staff of polytechnics as well as Ministry of Education staff responsible for technical education. A total of 28 participants from twelve Commonwealth African countries attended the workshop, thus bringing together a very substantial body of experience on technical education, particularly on the African continent.

The workshop programme was designed to make maximum use of this experience by means of intensive work in study groups, followed by plenary sessions. The resulting recommendations, including the training analysis and model staff development schemes were thus produced by technical education administrators and by practitioners at the workbench. They are set out in the following pages in the hope that member states will find among them practical measures to assist in the design and implementation of schemes for polytechnics and technical college staff development.

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The Eighth Commonwealth Education Conference which received a report on the Mombasa Workshop welcomed its contribution to Commonwealth co-operation in technical and vocational education and recommended similar workshops on technical teacher training in other regions of the Commonwealth with appropriate modifications to suit their needs. This report is now offered to the wider field of policy makers as well as practitioners in the context of our programme of dissemination of Commonwealth experience.

Rex E O Akpofure
Director, Education Division

WORKSHOP RECOMMENDATIONS

The following recommendations are offered for consideration by Governments, Polytechnic Institutions, the Commonwealth Association of Polytechnics in Africa and other regional and international organisations.

Recommendations to Governments

1. Governments should constantly reaffirm the strategic importance of polytechnics by actively encouraging and committing resources to continuous staff development programmes in such institutions.

2. Governments should ensure that the manning levels in polytechnics reflect a realistic awareness of the manpower necessary to establish and actively sustain staff development, and should make appropriate provisions in budgets and actual expenditure.

3. Governments should recognise the cost-effective benefits of well designed and executed staff development schemes in polytechnics when taking decisions on the employment and advancement of polytechnic staff.

4. Government funding of training for polytechnic staff should be conceived in terms of overall staff development policies operating at both national and institutional levels.

5. Overall national manpower development plans and targets should provide for an adequate supply of specialised personnel, to enable polytechnics to recruit staff on favourable terms, in competition with industry.

6. Governments should actively encourage co-operation on staff development matters between polytechnics enjoying membership of the Commonwealth Association of Polytechnics in Africa, and other similar institutions.

Recommendations to Polytechnic Institutions

1. Polytechnics should recognise that planned staff development is essential as a means of achieving institutional goals and should demonstrate a firm commitment to the aims of staff development through their approach to planning, personnel management and the deployment of resources, even when such resources are in short supply.

2. Institutional policies on staff development should be subject to regular review and modification in the light of change and evidence gained by evaluation.

3. Polytechnics should develop an organisational climate favourable to staff development. In this respect the institution should promote and foster an awareness of the need for an active and continuing participation in staff development processes.

4. Measures introduced by polytechnics to promote staff development should be appropriate to the development of, (a) individuals, (b) institutions, and (c) national needs and considerations.

5. Staff development initiatives promoted by a polytechnic should demonstrate an awareness of and a sympathy for regional activities in polytechnic staff development.

Recommendations to the Commonwealth Association of Polytechnics in Africa

1. The Commonwealth Regional Workshop on Technical Teacher Training welcomes the establishment of the Association, with its stated aims and objectives and calls upon it to pursue those aims and objectives, particularly in the field of polytechnic staff development programmes in member institutions, by exploring ways and means of securing external aid in addition to its own resources.

2. In order to promote common standards applicable to the professional training of polytechnic staff within the membership body, the Association should take a leading role in the formulation of agreed guidelines on the nature and standard of training applicable to the various levels of personnel and should offer advice on the form of training inputs.

International Organisations

1. Developmental Agencies should recognise the need for the healthy development of polytechnics in Commonwealth African countries as a means of promoting economic stability and well-being in those states.

2. Aid programmes carried out by developmental agencies should take account of the natural growth patterns of a national system of education, particularly when these are directly related to the life and work of the polytechnics.

3. Because staff development is an effective means whereby polytechnics secure their resource base, the developmental agencies should give high priority in their aid programmes to this form of activity.

4. The Commonwealth Secretariat, in maintaining its interest in and support of the Association, should provide practical assistance to promote effective staff development within member institutions.

5. Developmental agencies should recognise the advantages to be gained by using the Association as a co-ordinating agency for bilateral or multi-lateral aid programmes for staff development, in addition to individual or national arrangements.

LEAD PAPER

TECHNICAL TEACHER EDUCATION:

SOME CONSIDERATIONS FOR THE FUTURE

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"Continuing education should be an integral part of the teacher education process and should therefore be arranged on a regular basis for all categories of educational personnel."

Recommendations of UNESCO Conference on the Teacher's Role and Training - Geneva 1975.

Introduction

In seeking to explain the circumstances which promote the disparity between the needs of society and the aims and outcomes of education, Coombs (1) identifies (a) the "intrinsic inertia" of education systems and (b) the short fall of essential resources for education as two of the principal causes. That the two are linked is self-evident, particularly if the notion of the teacher as an education 'resource' is sustained. The behaviour of teachers and educational organisations will do little to alleviate "inertia" unless change, strategies for change and the management of change are seen within new and evolving perspectives.

This paper aims to promote a framework within which "change", as applied to the context of technical teacher education, may be analysed. Necessarily, reference is made to established practice in the sense of policies, control systems, training priorities and training schemes.

Whilst 'stock-taking' is regarded as an essential pre-requisite in the sense of delineating the status quo, descriptions should extend beyond the limits imposed by legislative, administrative and course-content considerations. Involvement in the promotion, management and evaluation of change demands more than a mere curiosity regarding attitudes, morale, expectations and professionalism.

The catalytic role of the views expressed in this paper is both diverse and complex. Wisdom dictates, therefore, that the writing be directed to the promotion of innovatory ideas and rational plans for change, suitably couched in terms of reality and practicality. Prescriptions are, therefore, avoided'.

TECHNICAL TEACHER EDUCATION IN DEVELOPING COUNTRIES: AN OVERVIEW OF THE PRESENT POSITION

Present day provision is, for the purpose of this paper, significant for qualities and characteristics not normally revealed by straightforward description. Cross-cultural stock-taking demands that due attention be paid to the evolutionary sequence applicable to the system of technical teacher training in each of the selected countries. The model based on developments in England and represented in Appendix A, is compiled by way of illustrating priority shifts which occur during the sequential development. The views of Beeby (2) on the status of teacher education in the development of an educational system and with particular relevance to the quantity/quality dilemma are useful in this context.

Given the diversity of problems and opportunities in third-world nations it is questionable if much of substance can be gained from the formulation of generalisations. However, patterns of provision for the training of technical teachers display the respective influences of colonialism, size, economic structure and the sources of bi-lateral or multi-lateral aid programmes.

Early forms of provision in many ex-British colonies or protectorates were, for a number of obvious reasons, based upon the experiences and traditions of the four specialist institutions established in England for the training of technical teachers and based on Bolton, Huddersfield, London and Wolverhampton. Various reports compiled by Gailer, (3) Watts and Sparrow, (4) and others during the 1960s ensured that "cultural borrowing" had a direct or indirect influence on the genesis of aims and forms of provision in Kenya, Nigeria and Ghana.

Primarily the provision which was conceived out of consideration for the staffing of secondary technical schools recognised that training should aim to:

(a) Develop the general and specialist education of the prospective teacher such that he would (i) have an adequate grasp of the subject he professes, (ii) have a good command of written and spoken language, (iii) have the ability to develop his knowledge and skills.

(b) Ensure that the teacher has, on the basis of first-hand experience, a knowledge of work practice and an appreciation of the operation of work organisations.

(c) Develop an appreciation of teaching techniques and the theoretical foundations to which they relate.

The passage of time has witnessed the elaboration of training needs in keeping with improvements in the standard of general education, the diversification of technical/commercial courses and a recognition that the higher levels of study impose comprehensively different knowledge, experiential and skill demands upon teaching resources.

From humble beginnings has developed such present day provision as that represented in Kenya by the work of KTTC and the Kenya Polytechnic; in Nigeria by the Yaba Technical Teachers' College, the Kaduna Polytechnic and the Nsukka degree programme; in Ghana by the courses offered through the Advanced Technical Teachers' College of the University of Cape Coast.

It would be an injustice to gloss-over developments in such vague terms. An analysis of provision in the countries and institutions mentioned and further afield will reveal that maturation and innovation are being promoted by indigenous organisations on a unilateral basis or in collaboration with international funding agencies.

By contrast other and smaller third-world nations are still in the throes of establishing provision on the basis of a conservative approach to the definition of training needs as they arise in the work of relatively small groups of technical teachers. Appendix B outlines such a provision.

In recent times technical teacher training institutions have, by their actions, confirmed what amounts to a consensus view on changing and developing training needs. Quite clearly, changes arise in the light of revised organisational policies and in particular where such revision represents the search for enhanced status. Attendant needs emerge as new views develop on the role of the teacher and on the relationship between the teacher and the organisation.

Whilst accepting that the nature and level of awareness of emerging needs will vary region by region and nation by nation it would appear reasonable to represent common and recently up-dated needs in the following terms:

(a) Courses of initial professional training should reflect the diversification of technical courses as they are matched to the demands of the labour market; this calls for a more highly critical treatment of specialist subject matter and teaching methods as they apply to particular forms of knowledge and skills.

(b) Up-dating courses are necessary if teachers are to maintain or enhance their individual levels of efficiency and if the content and attitudes of education are to continue to relate, in realistic terms, to the vocational context.

(c) If teachers are to assume responsibility for a wide range of on-going decisions and, further, in organisational terms they are to behave in a more flexible manner, then a more liberal definition should be exercised in respect of the foundation disciplines of education; this by way of reference to the need for a more sophisticated appreciation of the relationships which may be conceived as between relevant 'theory' and desired 'practice'.

(d) In-service, modular-based in-depth courses respecting such topics as curriculum development, evaluation, the management of institutions, the management of change, the development and deployment of learning resource units are necessary in order that those who are destined to assume responsibility at the first level in line management (and above) are equipped to exercise the requisite leadership.

(e) Programmes of secondment aimed at developing a cadre of leaders and involving higher level studies (e.g. Master's degree level) in either a specialist discipline or Education.

The above list is not intended to represent any particular order of priority, for considerations of that kind are truly particular to the circumstances prevailing within a system at a given time. However, it may be that the perpetual search for relevance directs that (a) is a high-ranking priority. In the event, the situation is characterised by the need for precise information which, when collated, will illuminate the relationship between:

Occupational specification; knowledge and skill requirements

Specialist technical curriculum

Training of specialist technical teacher

Such a task may be confused by the operation of standard designations which, when extrapolated from their authentic cultural contexts, add to the irrationality of much of educational planning. A training survey of the kind conducted by Dr L S Chandrakant (5), Director of the Colombo Plan Staff College is helpful in this type of situation. Chandrakant adopts a comparative approach as a means of illustrating a variety of ways in which the term 'technician' is consistent with particular cultural contexts as represented by curriculum and institutional dimensions. He then proceeds to answer the question: "What guiding principles will help the countries in designing appropriate technician teacher courses?" by summarising the main factors to be respected when planning such courses.

TECHNICAL TEACHER EDUCATION IN DEVELOPING COUNTRIES: A RATIONALE FOR DEVELOPMENT

The rationale of a national training system is, of necessity, couched in terms of principles and global considerations. For those who translate the rationale into objectives and action there exist considerations and implications which are peculiar to sub-systems, to an institution of technical education and to particular groups of teaching personnel. This is a crucial point of articulation. The manner in which contingencies are accommodated will clearly delineate the training role envisaged for the technical school or polytechnic within the overall training scheme.

It is, perhaps, wise to emphasise that "training" is not used in the narrow sense of perpetuating existing practice, standards or attitudes. On the contrary, "training" is applied in this context to refer to the education and development of the technical teacher in the most comprehensive sense and is certainly inclusive of teacher self-help initiatives, experiential learning and distance learning.

At the national level decisions are necessary on the basis of distinctions which may be drawn between the various levels of technical and vocational education. Distinctions may serve the purpose of highlighting the skill or, alternatively, the academic bias of courses, in a manner which permits conclusions to be drawn vis-a-vis the training needs of teachers and instructors. Such a statement may be seen in terms of 'splitting hairs', but to counter such a claim this paper would see a clear definition of teacher function to be a pre-requisite of training specifications.

Validation of courses with all the ramifications of status, currency and system morale, should be seen in the related contexts of administrative expertise, academic standing, independence and political power. Clearly the advantages which are to be gained through affiliation with a University have been demonstrated by developments in Fiji (in collaboration with the University of the South Pacific) in Ghana (in collaboration with the University of Cape Coast) and in Nsukka, Nigeria (in collaboration with the University of Nigeria). Decisions on affiliations of this kind appear to presume advantages similar to those enjoyed by the Colleges of Education (Technical), England, through their links with the Universities of Manchester (Bolton), Leeds (Huddersfield College and London (Garnett College).

Issues of validation, by their very nature, relate to the extent and nature of central control exercised by government in respect of institutions of technical education and technical teacher training. Where a decentralised or federal system is in operation the credence and stability of a University may do much to enhance the standards and status of the provision. Affiliation of this kind may lead to the desired flexibility being an inherent feature of technical teacher training.

Programmes for educating technical teachers in developing countries should differ among themselves and, as a group, they should depart in significant ways from programmes in countries with more diverse systems of social institutions and with more sophisticated technologies. Technical education everywhere is trying to adapt more effectively to changing economic and social needs. If education is to respond realistically to present and future demands the whole philosophy, organisation, content and method of technical teacher education should be re-examined.

Examination of the view expressed by Peshkin (6) that: "... rote learning appears to be the major student reaction to the demands of education - a behaviour which is clearly reinforced by the dominance of certain forms of examination," leads one to dwell further on the matter of course validation.

The rationale for training, whether viewed at national or institutional level, is therefore conceived as an instrument of change. It clearly directs attention to the policy decision that action is necessary in order to:

(a) Improve the effectiveness and efficiency of institutions providing technical education.

(b) Ensure that the individual teacher is adequately qualified and competent to satisfactorily undertake his current responsibilities.

(c) Assist the teacher in preparing to undertake new tasks.

(d) Prepare the teacher for career advancement.

(e) Ensure that personnel gain high level job satisfaction.

(f) Prepare both the organisation and the individual such that adaptation to the changing environment takes place on a rational basis.

Pursuit of such a rationale will, no doubt, result in the emergence of conflicts. But the energy of conflict can be harnessed and utilised for the well-being of all interests if due attention is paid to the institutionalisation of ideas and policies. To make the point. Many well-meaning training plans fail to take realistic account of the effect of training upon:

(a) The relationship between the organisation and its environment.

(b) The relationship between groups in the organisations.

(c) The relationships involving the individual and his work reference group and the individual and the total organisation.

Thoughts on a reform of training, therefore, demand complementary thoughts on the implications for organisational behaviour and subsequent decisions on the strategy for the management of change. In this manner planning considerations expose areas of training need which are identified with those

in the management hierarchy. More on this matter later.

In most third-world countries technical education has been entrusted with the related responsibilities of transmitting certain essential forms of knowledge and providing adequately trained manpower for the economy. The existing or envisaged relationship between tehcnical education and the labour market will be subject to change. Notions of 'relevant' knowledge will change. The rate at which acquired knowledge may become obsolete requires that the teacher redefines his role in the direction of assisting learners learn how to learn!

Here are two factors which bring pressure to bear on existing institutional policy. How an organisation responds to such pressures is regulated by extrinsic and intrinsic controls. The former comprises socio-political and economic determinants. The latter are represented by the existing organisational structure and the manner in which the organisation quantifies, categorises and articulates its resources.

The definition of training (or development) needs and the ordering of priorities will arise from training surveys and the collation of the resulting data which in particular relates to:

(a) The immediate and longer term development policy of the organisation with detailed reference to the magnitude and orientation of changing functions.

(b) An inventory of existing resources and expertise.

(c) An objective estimate of new resource needs with particular reference to teaching expertise and necessary back-up services.

(d) The concerns, attitudes and aspirations of existing personnel.

(e) The existing management/decision-making structure as it relates to the allocation of authority and the discharge of responsibility.

(f) The transitional time-scale, the number of teaching hours which can be committed for training or re-training and the availability of in-house or external training services.

In this way, training targets have relevance and authenticity in terms of the developmental goals of the organisation. That the training targets relate to considerations beyond those of curriculum and teaching methods can be deduced from the data inputs (a) to (f) above and the need areas represented in Appendix C.

Training need surveys are the means whereby an organisation may identify the nature, scale and status of necessary training inputs. As stated earlier, such defined inputs may reflect the unsatisfactory manner in which the organisation is currently fulfilling its prescribed role or alternatively (and far more healthily) the realism and objectivity being directed to the business of preparing for a new and future role.

On the basis of recent third-world training need surveys carried out by the Overseas Unit of Bolton College of Education (Technical) it would seem that priorities can be represented, without reference to particular national hierarchies, in the following terms:

(a) Need for further development in terms of subject-matter knowledge.

(b) Need to educate serving or aspiring teachers in terms of the diversifying educational and social roles of the teacher with particular reference to the inter-related activities of teaching and learning; training should aim to dispel the notion of the teacher as a mere source of information and instead, seek to confirm the various facets of his role as a promoter of experiential learning; changes in teacher behaviour should lead to the rejection of rote learning as the major reaction to the demands of education.

(c) Need to recognise the comprehensive parameters delineated by the curriculum as a means of moving away from the more ritualised and prescriptive guidelines traditionally provided by syllabuses and examination papers.

(d) Needs as they apply to effective communication as the basis for human learning; training as a means of ensuring the more effective utilisation of instructional aids.

(e) Needs in terms of the theoretical and skill aspects of evaluation, particularly in as much as that process applies to the curriculum and to learner achievement respectively.

(f) The need to identify and provide training in respect of the management function of the teacher; particular attention to be directed to the management of learning activities, resources, curriculum change and team-teaching.

(g) The need for a more sophisticated and adaptable approach to the preparation of lesson plans, teaching strategies and the design of learner tasks.

(h) The need to respect new priorities in terms of the in-service development of teachers as a means of maximising resources represented by existing personnel and, further, in the interests of enhanced job satisfaction.

Policy decisions as they affect the balance between pre-service and in-service training in African countries are complicated by the shortage of qualified personnel in industry and commerce and the resulting persistent movement of trained personnel from the education service into other sectors of the economy where considerably higher rates of remuneration apply. The amelioration of this fundamental problem cannot be brought about by the apparently simple remedy of paying higher salaries but a more highly personalised approach to the professional development of technical teachers, mounted on a continuing basis, could do much to counter the effects of the unsatisfactory or frustrating elements in the work environment.

In formalising the rationale a clear commitment to the ideal of an integrated training system should be demonstrated. Existing and somewhat arbitrary distinctions between pre-service education, pre-service training and in-service training should be reviewed with a view to achieving higher and more beneficial levels of integration. Aims and tasks associated with the various 'elements' of the system should collectively demonstrate coherence.

Summarising, therefore, the rationale should clearly identify the constituents of the system in such a manner as to propose a continuum of training which, beyond articulating a variety of responses to the training needs identified by 'market research', represents a compendium of training frameworks which are supportive of long-term career projections.

The principal constituents or training inputs of any system may be categorised as follows:

Constituent	Location in scheme
(i) Technical education aimed at achieving the necessary levels of specialist competency.	(a) Pre-initial teacher-training - to provide career entry status. (b) In parallel with teaching duties either through part-time course attendance, correspondence courses, distance/informal learning. (c) Secondment through sponsorship to read for higher qualifications and undertake research. (d) Short/intensive highly specialised study and skill acquisition in collaboration with manufacturers or international training agencies
(ii) Teacher education of a general nature.	(a) Initial, highly skill-centered programme of professional training for teaching. (b) In-service courses of higher level study in pedagogies - to include in-depth specialist curriculum studies, an introduction to investigatory methods in education, evaluation processes and communication - probably leading to the award of Bachelor degree. (c) Intensive/modular-based courses designed to serve a remedial function in respect of particular skill needs, e.g. interpersonal skills, counselling, communication, lesson planning and the evaluation of teaching strategies.
(iii) Modular teacher education courses relating to emerging areas of national need.	In-service courses designed to react to demands imposed by curriculum reform, new examination schemes, the promotion of new courses, etc.

Constituent	Location in Scheme
(iv) Short course provision.	Essentially concerned with the dissemination of information on new developments, research outcomes, experimental schemes and projects.
(v) Linear and modular-based courses leading to further qualifications and the acquisition of leadership skills.	In-service provision related to: (a) Management in education. (b) Curriculum development and evaluation. (c) Research design and application. (d) The role of teacher mentor or professional tutor. (e) A systems approach to course planning and control etc.
(vi) In-house development schemes.	Aimed at utilising the collective expertise of the employing institution, e.g. (a) Task group activity related to the production of learning packages. (b) Group projects concerned with the evaluation of the utilisation of available educational technology. (c) Staff seminars.
(vii) Industrial/commercial experience - up-dating programmes.	(a) Periods of industrial attachment prior to commencement of full-time teaching. (b) Assumption of in-service role of liaison officer operating between specialist department and appropriate sector of local economy. (c) Secondment for experience of advanced technology in developed country. (d) In-service attachments to manufacturers through opportunities afforded by trade agreements.

Constituent	Location in Scheme
(viii) Co-ordinating activity exercised by employing institution in collaboration with appropriate Ministry department.	Employing college - as represented by the development function of the teaching organisation. (see subsequent section of paper)

THE ROLE OF THE EMPLOYING INSTITUTION WITHIN THE TRAINING SYSTEM

The recent Report of the Haycocks Committee (7) on the training of full-time teachers in establishments of further education in England and Wales contains recommendations which have far reaching implications for employing institutions and the role they will assume in the total and continuing teacher development process.

In recognition of the back-long of untrained personnel and out of a desire to improve the quality of in-service technical teacher education, the Committee prepared recommendations based upon the assumption that advantages were to be gained by (a) more directly relating courses of professional development to the place of work, and (b) expanding the resources available for in-service teacher education by involving suitably experienced and qualified technical college staff in a joint training venture alongside colleagues in colleges of education (technical) or equivalent regional centres. The recommendations, which have received wide acclaim, have been, or are being, coverted to action through schemes promoted by regional organisations established for the purpose.

The schemes will develop the capacity of in-service training alongside the traditional pre-service schemes though it is assumed that the latter will undergo substantial contraction.

Provision developed by the North West Region and based on the Bolton College of Education (Technical) as the designated Regional Centre will comprise a three-phase course for newly appointed and untrained full-time teachers and take the form set out in Appendix F. Phase I (thirty hours) will be undertaken in the employing institution; Phase II (270 hours) will be provided through one of a number of designated area centres; Phase III (300 hours) will be based on the Regional Centre. Executive action rests with the Bolton College through its relationship with the University of Manchester (the validating body) and the Regional Board for the scheme (responsible for policy, planning and overall control).

Should the reality of the scheme keep faith with the spirit of its rationale then there would appear to be little doubt regarding the future cohesion of traditionally diverse training activities. Clearly a participative scheme of this kind should provide sensitivity of the kind necessary to accurately and promptly relate training activity to prevailing needs.

The Report further recommends that professional tutors should be appointed to serve in technical colleges to form a key element in the arrangements proposed. The professional tutor is seen as a counsellor of teachers with a responsibility for maintaining liaison with training centres and others involved in the training process. He will also co-ordinate and overview the induction of new members of staff.

It is intended that the regional schemes be developed to provide comprehensively for the post-initial training of teachers through the provision of long-term award bearing courses, modular-based programmes catering for specialist needs and short-courses intended to provide information and skill inputs in response to limited but important shifts of policy.

The principal attractions of the new schemes lie in the emerging regional frameworks, which formally bring together 'providers' and 'consumers'. It is conceivable that the new frameworks will render dissemination

of ideas and information on training opportunities and resources more effective.

Direct involvement in such a regional scheme is but one facet of the training function of the technical college. In common with technical schools and polytechnics in developing countries, the English technical college has, in varying degrees, developed in-house training and development services as part of its total educational remit.

The staff-development strategy of an organisation aims to identify and co-ordinate the needs and goals of that organisation with those of individual personnel who serve within it. Staff development processes may be seen as both diagnostic and remedial. The basic strategy may take the form represented diagrammatically in Appendix E and subsequently define the sort of goals represented in Appendix D.

The scope and intensity of a development strategy will be influenced by such factors as organisational scale, the 'spread' of courses offered in terms of level and nature, the relative geographical isolation of the institution and the level of managerial competence. Useful examples of case studies in staff development in African institutions of higher technical education are those provided by Githinji (9) and Fishwick (9).

Irrespective of the size and complexity of the organisation, formal procedures of the kind being recommended have potentially a number of advantages:

(a) Newly appointed staff (academic and ancillary) join an institution which is known to value staff development, which makes in-service provision for such development and which expects participation.

(b) Established staff know that their job satisfaction, both current and future, is recognised to be of major importance, and that they have ample opportunity to discuss the prospects and develop themselves accordingly.

(c) Development needs are identified across the institution so allowing the allocation of priorities and the organisation of self-help through in-house courses, the rotation of responsibilities and the promotion of task group initiatives, etc.

(d) Problems which arise from the divergence between the ambitions of staff and the development plans of the institution can be identified and dealt with.

Securing advantages (c) and (d) will depend upon majority participation which in turn will hinge on whether what is implied by a staff development programme can generate satisfactions which compensate for a presumed loss of autonomy. This raises the whole question of incentives and rewards and the extent to which teachers can change the basis of their professionality to an extended form.

A comprehensive intrinsic staff development provision will embrace activities of the kind listed below:

Organisational

- Induction provisions for newly appointed personnel.

Teaching

- Support services for staff undertaking external/internal in-service courses of professional training for teaching.

- Support in respect of the up-dating of specialist knowledge including staff sponsorship for specialist subject courses on a planned basis.

- Support for an extension of specialisation into other subject areas promoted on the basis of inter-faculty links.

- Support in experimentation with new teaching methods.

Administrative

- Essentially related to administrative processes as they involve members of academic staff; namely:

  (a) Organisational (timetables, examination arrangements, selection procedures, etc).

  (b) Financial (production of sub-estimates, purchasing procedures, keeping of stock records etc).

  (c) Communication and office procedure (drafting of internal memoranda and instructions, dealing with external correspondence, preparation of reports and minutes, establishing an efficient storage/retrieval system).

Personal Development

- Activity principally concerned with the development of personal qualities such as confidence, leadership, initiative etc., experience of this kind to be gained from:

  (a) Service on college or other committees.

  (b) Experience as an officer of such committees.

  (c) Discussion group leadership.

  (d) Small scale research into educational problems, e.g. student problems.

In the interest of good staff relations it is important that the aims, nature and method of implementation of a staff development policy should be clearly understood by all those for whom it is intended. Details of the scheme should, therefore, be circulated in advance and time allowed for comment and structured discussion prior to implementation.

It can be seen, therefore, that a staff development scheme of the kind described has, by virtue of how it relates to all aspects of organisational

life rather than its 'volume', the potential to generate the difference between mediocrity and excellence. An activity of such scope and importance cannot successfully accomplish the pre-determined goals if controlled out of partisan interests.

In a larger organisation it is conceivable that the scheme will be co-ordinated by a staff development officer who is directly responsible to the director of the institution. It may be that on account of size and diversity of function collaborative roles are defined for the staff development officer (logistics) and the professional tutor (pastoral) respectively. In a smaller organisation the responsibilities can be merged in one appointment or, alternatively, assumed by the vice-principal or deputy director.

CONCLUSIONS AND RECOMMENDATIONS

Article II (Aims and Objects) of the Constitution of the Commonwealth Association of Polytechnics in Africa clearly states the nature of Polytechnic interest in matters pertaining to the training and further development of technical teaching personnel. The conclusions and recommendations which follow are formulated out of respect for Article II and the achievements of African Polytechnics to date.

1. Notwithstanding the decision of the United Nations Economic Commission for Africa to establish an African Institute for Higher Technical Training and Research (location to be decided, July 1980) it would appear timely to consider the case which can be made for an African Technical Education Staff Development 'focus' of the kind currently provided in South-East Asia (Singapore) by the Colombo Plan Staff College or in England by the Further Education Staff College at Coombe Lodge.

Such a centre would be resourced in a manner which would render it capable of:

(a) Processing and disseminating information through the media of news-sheets, research abstracts, and discussion papers/articles submitted by teachers and administrators.

(b) Promoting, co-ordinating and reporting on, training surveys, educational investigations and research.

(c) Providing intensive short courses, confrerences and workshops as responses to the in-post needs of senior personnel.

Such a 'focus', being principally resourced by personnel seconded from participating African Polytechnics, could be expected to develop the necessary empathy for the developmental circumstances, problems and training needs of the diverse range of institutions enjoying membership of CAPA.

2. Short-term and longer-term considerations related to the present developmental status of many Polytechnics would recommend that the procedures utilised for the development of leadership be reviewed. This is not to indict the present leadership but rather to recommend that measures aimed at preserving high standards in the future be secured.

Particular attention could, with advantage, be directed to the further development of established and aspiring senior personnel through the provision of long and short base study programmes in:

(a) The management of education, including the management of change, of resources and of curriculum reform.

(b) Personnel management, including a study of staff appraisal systems and techniques.

(c) Curriculum development and evaluation.

(d) The planning of resources for education including work on the design of learning resource centres, laboratories and workshops.

(e) Methods of educational enquiry, with particular reference to training need surveys, 'market' research, the evaluation of education systems (comparative) and so on.

Such provisions could be secured through individual in-house schemes (Larger Polytechnics), the facilities afforded by the proposed 'Staff College' or bi-lateral arrangements.

3. Further to (2), consideration should be directed to the advantages accruing from the development of Master's degree study programmes for suitably qualified polytechnic personnel and based upon courses of study/research having particular relevance to the sphere of polytechnic involvement. The courses could be seen as the technological sector equivalents of courses currently offered for teachers in primary and general secondary education. The courses should be based within the geographical sphere of CAPA influence and could, in the first instance, seek to take advantage of collaboration with experienced personnel currently tutoring such courses in the United Kingdom and even contemplate the advantages of early validation through an English University. (The University of Cardiff has, for some time now, been involved in the validation of home-based courses for teachers serving in Nigerian schools).

4. Individual polytechnics can, irrespective of size and resource limitations, do much to improve organisational 'health' through the development of new, or the improvement of existing, staff development schemes. Such schemes do, however, have complex implications for existing organisational arrangements, attitudes and the autonomy of the teacher.

Clearly, contextual considerations should be exercised in advance. Organisational structure and management style must provide a climate favourable to the introduction of such a scheme.

Given that the scheme operates in an effective manner, it is reasonable to expect that the nature of interpersonal competition and individual career aspirations will be modified. Such outcomes are not necessarily dysfunctional when considered in connection with scheme 'inputs' aimed at developing organisational cohesion and a more effective corporate identity. Sufficient to suggest that a recognition of the full range of possible outcomes should directly influence the manner in which the scheme is planned and implemented.

APPENDIX A

THE PHASES OF DEVELOPMENT IN TECHNICAL TEACHER EDUCATION IN ENGLAND

PHASE 1

Emergency Response

Characterised by:

(a) Generally invalid assumptions regarding familiarity with specialist subject matter; technical qualifications possessed taken as an indication of level of knowledge and understanding acquired.

(b) Emphasis upon pre-service training.

(c) Within pre-service training schemes, emphasis placed upon the traditional theoretical foundations (philosophy, psychology and sociology), teaching methods, lesson planning, evaluation of student work/progress, the organisation of the educational system and supervised teaching practice.

(d) Prescriptions and stereotyped responses to problem situations.

(e) A once-and-for-all attitude to teacher training.

(f) Training organisations being physically detached from the institutions of technical education.

PHASE 2

A Refined Response

Changes in character promoted by the rapid expansion and changing nature of technical and vocational education, the inability of earlier initiatives to comprehensively tackle the back-log of untrained personnel and the more overt attempts through policy to render technical education more responsive to the demands of the economy.

Characteristics of this Phase may be set forth thus:

(a) Invalid assumptions regarding specialist knowledge still prevalent though attempts at diagnostic and remedial activities are being made.

(b) Development of in-service training in parallel with established pre-service schemes; in-service provision tending to respect a variety of aims including subject matter and skill up-dating.

(c) Within courses, developing emphasis upon educational technology, examinations and testing, project work and curriculum development; moves to replace conventional theoretical

'strands' by integrated 'education studies'.

(d) Problems of relating the 'theory' and 'practice' of teaching tend to remain in more or less their original form.

(e) Development of wider range of diploma and degree courses for teachers causing some to change their perceptions of initial teacher training.

(f) Training still the responsibility of specialist establishments.

(g) Establishment of national staff College to act as a focus for the development of senior personnel.

PHASE 3

Involvement and Accountability

Escalating costs, changing patterns of provision, recurring need for re-training, democratisation of educational systems, the changing role of the teacher and the devaluation of qualifications have tended to promote a phase which highlights concern for:

(a) The continuing educational needs of teachers which has resulted in national provision of a more comprehensive form in terms of aims and patterns.

(b) A recognition that training for teaching and teaching are integrated parts of the same continuum.

(c) The development of the training role of employing institutions through their active participation in initial and post-experience courses.

(d) The development of induction and in-house training programmes by employing institutions (which has frequently resulted in the appointment of a training co-ordinator and the emergence of the 'mentor' role).

(e) The development of modular training schemes which respect clearly-defined objectives and may involve distance-learning and learning packages.

(f) New inputs to courses which more accurately reflect the professional needs of technical teachers, e.g. curriculum development and evaluation, study skills, counselling, research methods, education management, communication and interpersonal skills, data processing and self-appraisal.

(g) The role of education theory in teacher development courses.

APPENDIX B

MODEL OF TECHNICAL TEACHER TRAINING IN EL SALVADOR

PROMOTED BY BOLTON COLLEGE OF EDUCATION (TECHNICAL), UNITED KINGDOM

IN COLLABORATION WITH THE INSTITUTO TECHNOLOGICO CENTRO AMERICANO, EL SALVADOR

This in-service provision was designed with a view to flexibility and adaptability. By virtue of its 'unit' structure it may be viewed as (a) a collection of 'special need' packages, each being negotiated without a necessary reference to the others, or (b) as an integrated 'credit awarding' course which, in its complete form, can be seen as the equivalent of a more conventional and continuous approach to initial training.

The course was to cater for a population of academically well-qualified but professionally untrained teachers of mechanical, electrical and construction engineering.

The orientation of each unit may be judged from an appraisal of the aims proposed by the course planners and described in the following terms:

UNIT 1

First Year (Foundation Studies) 120 Hours

(a) To assist the participants make full use of their professional education and experience in their role as a teacher.

(b) To introduce participants to the idea of a systems approach to the design of 'formal' learning situations.

(c) To demonstrate the application and evaluation of various forms of audio-visual equipment in a variety of typical instructional situations.

UNIT 1

Second Year - Emphasis upon practice of teaching (90 hours)

(a) To observe the manner in which the participants are preparing, utilising and evaluating schemes of work, lesson plans and audio-visual equipment.

(b) To ensure that full and effective use is being made of available teaching aids.

(c) To promote individualised counselling sessions based upon observations of teacher behaviour in classrooms and workshops and aimed at increasing teacher efficiency.

UNIT 2

Second Year (120 hours)

(a) To develop teacher competence in:

(i) Design and application of workshop and laboratory instruction schedules.

(ii) A range of less formal methods of teaching.

(iii) Team teaching activity.

(b) To introduce course members to:

(i) Relevant theoretical perspectives for educational processes.

(ii) The management of learning.

(iii) The theory and practice of student counselling.

UNIT 2

Third Year - Emphasis Upon Practice of Teaching (90 hours)

Aims as for previous practice period.

UNIT 3

Third Year (120 hours)

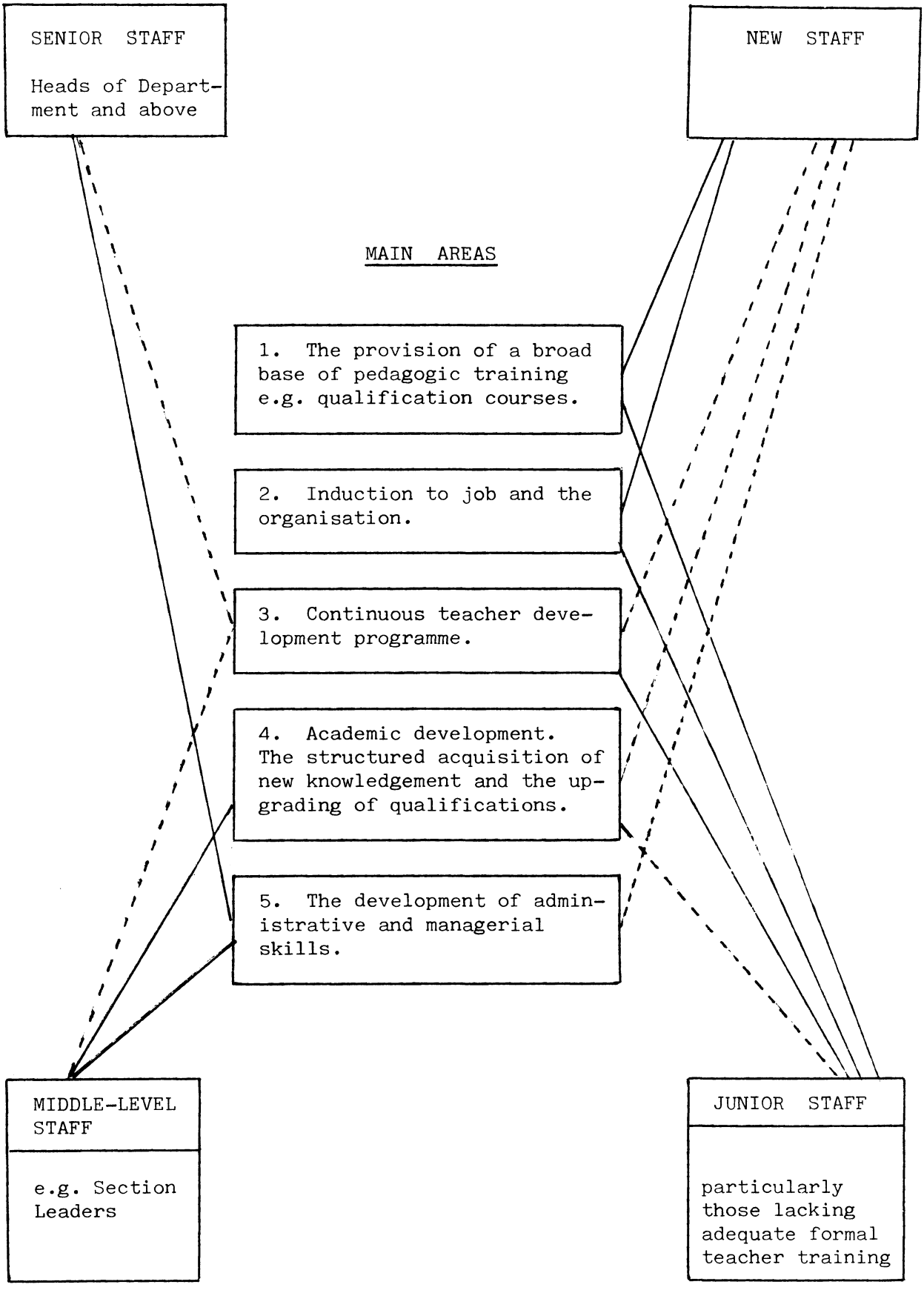
(a) To negotiate in-depth studies of the role of media in learning systems.

(b) To develop familiarisation with the techniques of writing objectives for courses and for specific tasks within courses.

(c) To analyse the resource needs promoted by individualised learning systems and to consider how such data may be utilised in the design of resource centres.

(d) To examine the uses and advantages of micro-teaching techniques.

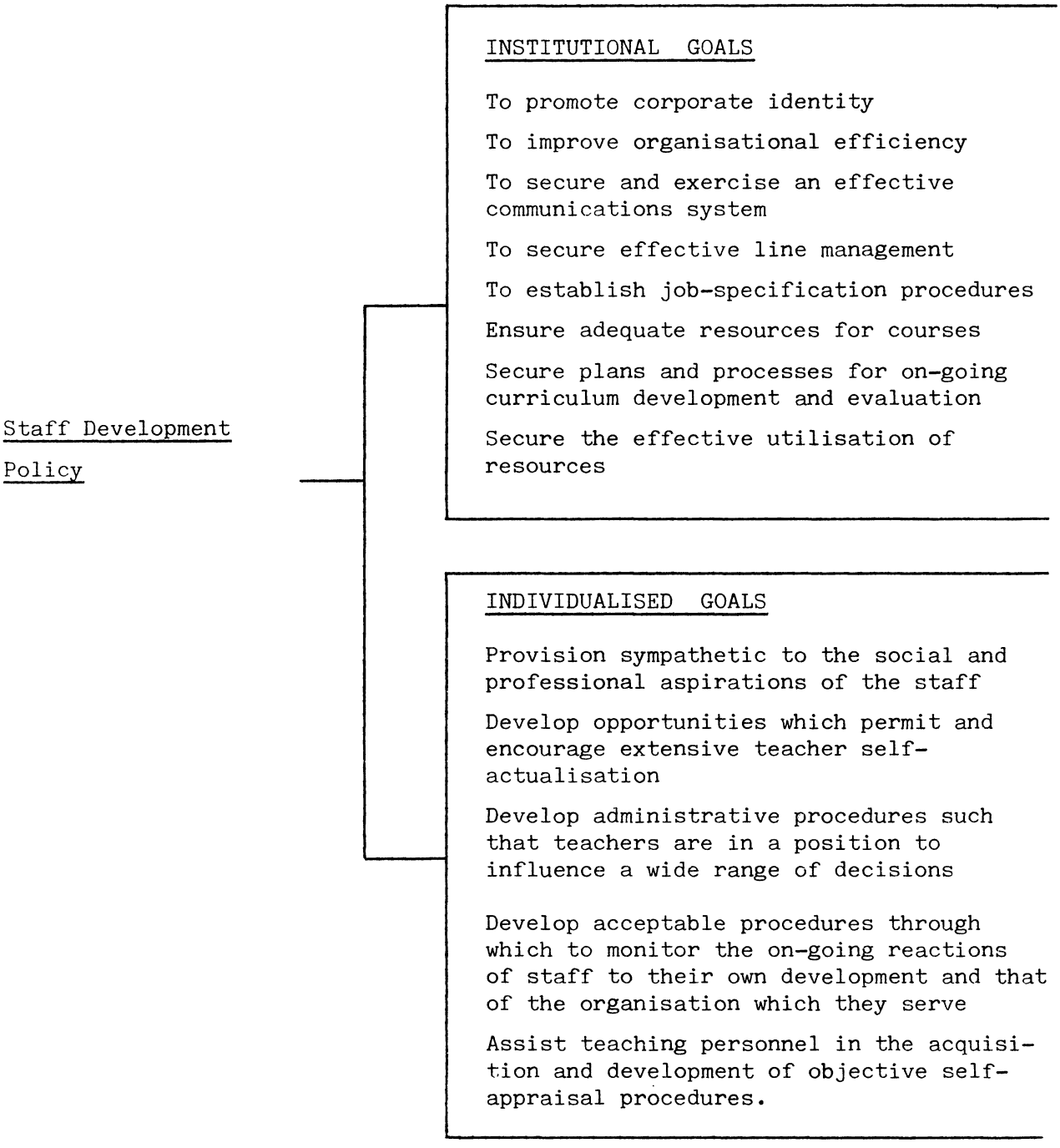
APPENDIX C



Key: _____ probable main needs

---------- other possible needs

APPENDIX D

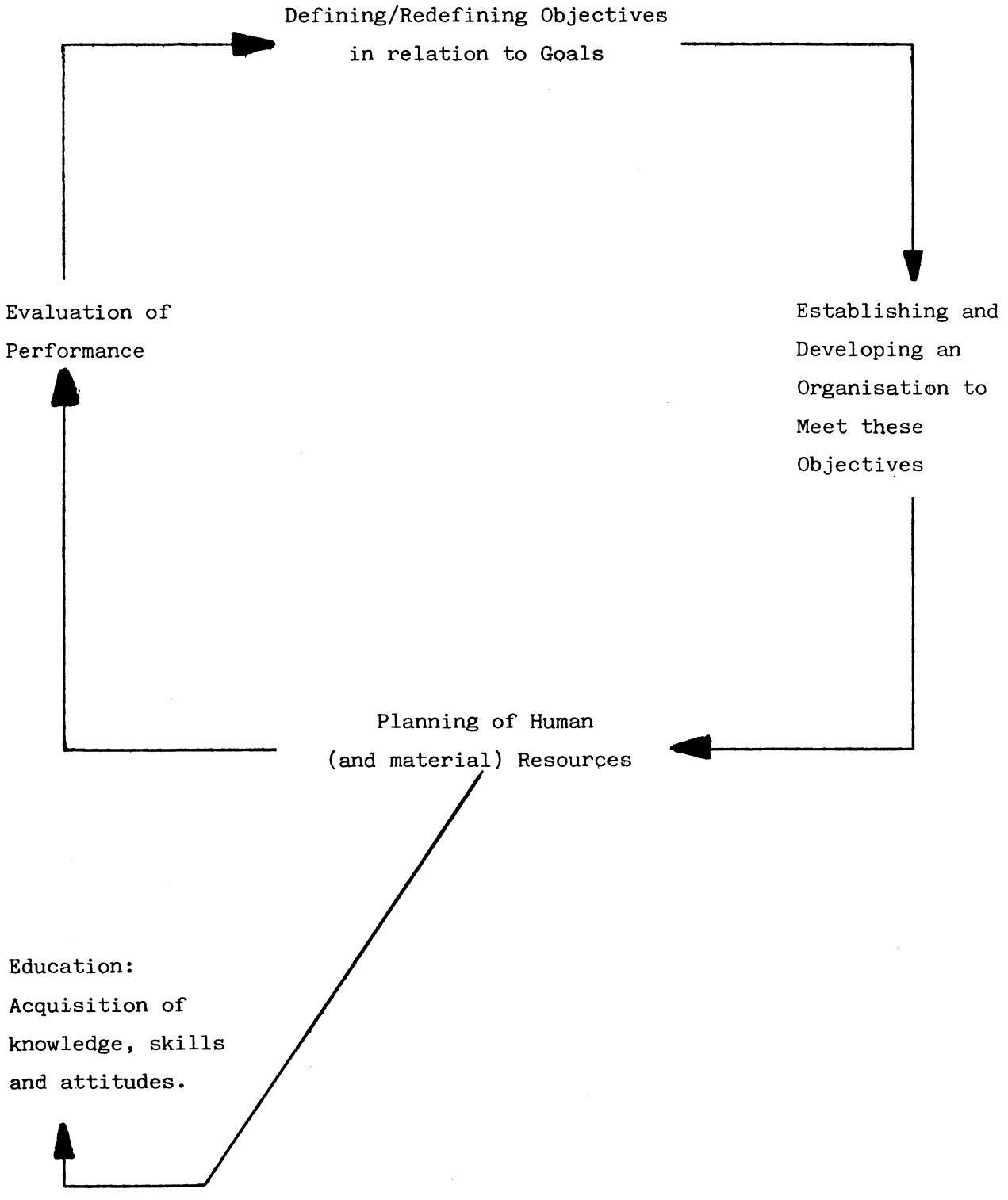


General Comment

Staff Development should be seen as an essential component of a "healthy" social system; an activity which is natural and occurs automatically as part of the management process. Components of organisational health are: (i) clear goals, (ii) adequate communications, (iii) effective decision-making structures and problem-solving procedures, (iv) resource utilisation, (v) intensiveness, (vi) high morale, and (vii) adaptability.

APPENDIX E

Ideas on a Basic Strategy for Staff-Development



With acknowledgements to A J Light

"Staff-Developmenting Education: The Search for a Strategy" (1972)

APPENDIX F

PHASE I (30 hours)	Introduction to teaching (Not less 5 days/30 hours before commencing teaching)

PHASE II (270 hours)	STAGE 1 (36 hours) — Foundation Stage - Identification of learning needs, planning of work (36 hrs) Task: Prepare a Scheme of Work
	STAGE 2 (144 hours) — A range of modules, not necessarily sequential, including: 2.1 Resources for learning/teaching (24 hrs) Task: Prepare and evaluate at least two aids. 2.2 Learning through social interaction (42 hrs) Task: Prepare and evaluate at least two group exercises. (24 hrs) 2.3 Assignments and Projects. (24 hrs) Task: Prepare and evaluate <u>either</u> an assignment <u>or</u> a project. 2.4 Learning objectives and assessment of performance. (36 hrs) Task: Prepare and evaluate a test. 2.5 Study Skills (18 hrs) Task: Prepare a report on the study skills appropriate to a particular group of students and the advice to be given to them. <u>Supervised Teaching</u> All the teaching done by a course member, which should not exceed three-quarters normal load, should be regarded as an integral part of his training and planned accordingly. Course members will be visited to assist them integrate theory and practice in relation to the skills and techniques of planning, implementation, evaluation and follow-up. Assessed Teaching: Minimum of three hours observed for purpose of assessment.
<u>Notes</u> 1. Related theory derived from Psychology, Sociology, Philosophy, etc. to be taught concurrently with practical considerations. 2. Assessment tasks are largely parts of teacher's normal work	

	STAGE 3 (90 hours including a BLOCK of at least 10 days)	3.1	Integrating activities Task: Prepare evaluation file on all assessment tasks and observed teaching.	(72 hrs)
		3.2	The organisational and administrative context of F.E.	(18 hrs)

PHASE III (300 hours)	Core Units (140 hours)	A	Curriculum development	(50 hrs)
		B	Human learning	(50 hrs)
		C	Aims, purposes and structure of F.E.	(30 hrs)
		D	Professional development of the teacher	(10 hrs)
	Approved Optional Studies			(100 hrs)
	Personal Needs Project - related to Course Member's area of teaching			(60 hrs)
	Supervised Teaching - assessed by a minimum of three hours observed teaching.			
	Assessment - by continuous assessment along with a final paper in Units A, B and C, and an assessment of practical teaching.			

CERTIFICATION will require Course Member to have reached a satisfactory standard in (a) Observed Teaching.

(b) Phase II Tasks and Phase III Core Units.

(c) Optional Studies and Personal Needs Project.

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6.	PESHKIN, A	Education in Developing Nations: Dimensions of change	Comparative Education Review, Vol.X, No. 1, 1966
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WARREN-PIPER, D	University Staff-Development: Practical implications	University of London, Institute of Education

SUMMARY OF DISCUSSION ON LEAD PAPER

Responsibility for staff development

1. In-service staff development schemes in polytechnics may be influenced by the centralised nature of government personnel policies. Although the degree of Ministry involvement in polytechnic staff training varies from country to country, it was felt that polytechnics should be allowed more freedom to initiate and implement in-service staff development schemes appropriate to their needs. At the same time it was recognised that polytechnics had a responsibility to follow national training policies and these should be taken into account when designing staff development schemes. A clear understanding should be sought by ministries and polytechnics on the relationship between national manpower strategies and institutional goals as a first step in the transfer of responsibility for staff development from a central position to the governing bodies and heads of polytechnics.

2. It was accepted that informal in-service staff development could sometimes operate within centrally controlled training schemes. In these circumstances there were advantages to be gained by adapting the best features of an in-formal system into well structured staff development programmes. It was important to identify points of articulation between institution staff development schemes and centrally controlled national personnel systems in order to avoid a clash of policies.

Problems of staff shortage

3. It was often difficult to release staff for training due to staff shortages but this problem could be alleviated by

(a) the recruitment of extra staff at lower levels, to provide a reservoir of teachers who could work under the close supervision of senior staff,

(b) designing training programmes made up of a number of short modules to avoid disruption of teaching timetables,

(c) a critical examination of the utilisation of teaching resources, in order to reduce timetable loads. For example, the introduction of innovative methods of teaching in order to reduce the class contact time of technical teachers.

Conflicting development needs

4. Attention was drawn to possible conflicts between the career development needs of individuals and the corporate needs of the institution, particularly in research projects associated with higher degrees. The choice of subjects for in-service study programmes should reflect the needs of both the individual and his institution, and every attempt should be made to satisfy these separate needs by discussion between the scholarship applicant and his principal. Considerable benefits could be obtained if the results of higher degree research were fed back into a staff development programme. For example, research work by one member of staff on curriculum development could be shared with colleagues by means of in-house seminars.

Incentives and promotion

5. The attitudes of staff towards staff development schemes was considered to be vital importance and such schemes should be seen by teachers as an essential part of their career progression. If staff observed clear promotion paths, both within their institution and in the education system, based on well structured staff development schemes, they would be encouraged to take an active part in their own development and assist in corporate efforts in staff development.

6. It was considered essential that all staff members should have a thorough working knowledge of their institution's staff development programme, together with a sound appreciation of national policy on personnel and training matters. In turn, Ministries of Education and other government departments involved in staff development should recognise the need to involve all polytechnic staff, when formulating and implementing national staff development schemes.

Methods of training

7. Discussion on the nature and length of pre-service training raised some doubts on the value of long pre-service and in-service courses. It was noted that the well established technical teacher training colleges in developed countries were moving away from long pre-service courses, based in a single institution, to phased modular type courses comprising a mixture of on-the-job training in the teachers own institution and area centres, followed by short courses in the specialist training colleges. Other alternatives to long pre-service training courses were examined including the possibility of well structured in-service programmes for newly appointed staff holding technical qualifications, but without professional training. In some polytechnics a system of up-grading instructors to lecturers was being operated and in these situations the in-service training approaches seemed more suitable than external courses of long duration.

8. The need to offer training to part-time staff was also recognised and one polytechnic represented at the Workshop had investigated the possibility of recruiting part-time lecturers from technical departments in government ministries. Although such personnel were technically qualified, they lacked professional training and it was highly desirable that polytechnic staff development schemes should embrace their training needs.

Expatriate staff

9. Non-national technical teachers form a substantial part of staff establishments in most polytechnics in Commonwealth African countries and although their numbers are likely to diminish as more national staff enter the system, the need to employ some expatriate expertise will remain in the foreseeable future. The cost-benefit of employing expatriate staff was considered within the context of staff development schemes and a number of salient points emerged:

(a) Within the framework of national policies for the localisation of educational employment, the criteria for staff selection should be based on ability and it was considered essential to recruit the best staff available from all known sources.

(b) Governments and polytechnics were naturally reluctant to use scarce training resources and funds to train expatriate staff, particularly so in the case of officers serving on a single contract. However, in some instances the provision of training for expatriates could benefit the institution. For example, expatriate staff could undertake short courses in their own country prior to joining a polytechnic, if such training was related to the institution's need for special expertise on, say, new equipment.

(c) Staff development schemes in polytechnics should benefit from any special experience possessed by expatriate staff. Some examples given were,

(i) skills in modular courses using general and specific objectives,

(ii) experience of learning resources centres in polytechnics.

Assessment of training needs

10. The importance of systematic assessments of training needs of staff was stressed and methods of carrying out audits of human resources were examined. One method discussed was the use of training surveys, possibly undertaken by an external agency. Surveys carried out by external personnel offered the advantage of a detached and impartial assessment of training needs, although it was recognised that the surveyors should have a thorough understanding of the institution's needs and goals in order to co-ordiante corporate and individual development requirements.

11. Job specifications were seen as essential tools in the process of auditing the strengths and weaknesses of polytechnic staff establishments, although some reservations were felt on the possible mis-use of rigid demarcation statements by some members of staff. However, job specifications need not be static instruments and should be constantly re-examined against the changing demands of an institution's work programme. The preparation of job specifications was a matter for close consultation between the holder and institution management; an imposed specification was unlikely to work in practice and could lead to difficulties in identifying training needs.

Internal activities to foster staff development

12. In order to make the best use of internal resources to support staff development schemes, it was suggested that departments should carry out specific tasks to identify training needs. For example, one or more departments could be given the task of examining the management skills necessary to maintain curriculum development programmes. This type of exercise would draw on collective expertise within the establishment to design training programmes aimed at the specific needs of the institution. Involving staff in such work could help to foster positive attitudes towards the whole process of staff development within an institution.

WORKING GROUP ASSIGNMENTS

13. Following the plenary sessions on the lead paper and country reports the workshop was divided into Working Groups in order to carry out two specific assignments.

Working Group 1. To assess the professional training needs of polytechnic staff.

Working Group 2. To assess the administrative and management training needs of polytechnic staff.

14. The composition of each Group was carefully balanced in terms of, size and type of institutions; individual expertise and experience; and central administration representation. Both Groups were requested to carry out the assignments against the background of discussions on the lead and country papers, and on the understanding that they would be subsequently re-formed as Group 3 and 4, to design model schemes for polytechnic staff development and to formulate proposals for action based on regional co-operation.

15. Within the main assignment set for each Group, four common tasks were agreed.

(a) Identification and classification of the principal training needs of four categories of staff.

(i) recently appointed staff

(ii) staff with three to five years service

(iii) staff with more than five years service

(iv) short term expatriate staff

(b) Identification of the principal training inputs required to fulfil the training needs.

(c) Identification of the nature and scale of resources required to sustain the specified training inputs.

(d) Identification of the essential elements of an evaluation process for staff development programmes.

GROUP 1. PROFESSIONAL TRAINING NEEDS

16. The Group considered the four categories of staff identified in the list of tasks, and concluded that the first category, recently appointed staff, should be sub-divided into three groups.

(a) Inexperienced, lacking professional training

(b) Experienced, lacking professional training

(c) Experienced, with professional training

17. The Group set out four main areas of professional needs for all categories of polytechnic staff.

(a) Pedagogical

(b) Education Systems

(c) Resource Centres

(d) Career Information

Within each main area a number of the most important training needs were identified and analysed for key elements. It was recognised that the list of training needs within each main area was not exhaustive, but represented a selection with a high priority in most polytechnic staff development programmes. Accordingly, the selected needs constituted a model of a training needs audit which could be adapted and enlarged to suit the particular circumstances of any polytechnic.

18. The Group examined appropriate forms of training inputs necessary to sustain in-service staff development programmes based on the model training needs audit. The facilities offered by a well designed and equipped resource centre were considered to be one of the most important forms of training input. Such centres could provide material for staff training in self-instructional and group-learning formats.

19. Participatory activities, such as staff meetings, seminars and workshops formed an important and constant feature of polytechnic business, and the Group identified a number of special skills required for the processes and conduct of these activities. This area of need assumed a special importance for staff moving into senior posts, for example, potential heads of department. The Group suggested that staff development programmes should encourage the use of understudy methods, so that senior staff could counsel their junior colleagues.

20. In drawing up the list of professional training needs and suitable training inputs the Group put forward a number of important factors that could affect the design and operation of a staff development programme:

(a) Technical teachers reached a critical point in their careers at the end of a five or six year period of service, and a full diagnosis of their future potential should be made at this stage.

(b) Expatriate staff should participate in staff development programmes if such training provided immediate and long-term benefits to the employing institution.

(c) It was important to regard a polytechnic as a totally integrated organisation and this concept should be applied at every stage of the staff development process - design, implementation, evaluation and revision. In this context it was essential to include teaching and non-teaching staff at all levels in the design and operation of staff development programmes.

(d) In addition to improving the performance of individual members of staff, a staff development programme should also make a substantial contribution to the overall efficiency, productivity and cost-effectiveness of an institution's work, through a constant appraisal of linkages between the training needs of different levels and categories of staff. One example of such linkages could be the need to improve the information search skills in teaching staff. Ways to improve such skills should be examined in conjunction with training assessments of library and resource centre staff, in terms of their ability to organise systematic search procedures and to deliver appropriate training to teaching colleagues.

GROUP 2. ADMINISTRATIVE AND MANAGEMENT NEEDS

21. The Group recognised that access to administrative and management training was often confined to senior levels of staff. However, it considered that the operational efficiency of a polytechnic could be improved by applying appropriate management techniques to a much wider range of jobs, including relatively junior posts. For this reason it was important to examine every job, in order to identify elements of work that required management skills, particularly in cases where the work of junior staff supported or merged with duties carried out by senior colleagues. Without prejudice to this interpretation of training needs the Group decided, because of time limitations, to concentrate on two main categories of staff, (i) academic staff at all levels, and (ii) senior administrative staff.

22. It was stressed that the methodology used to assess training needs for these two groups could be applied to other job categories. However, before proceeding to a detailed analysis of training needs, the Group identified four main areas of administrative and management activity associated with teaching and non-teaching work in polytechnics; (a) institution administration and management (b) finance, including budgetary control and procurement (c) interpersonal skills (d) management of staff development systems. The Group recognised the existence of other areas of management activity in polytechnics, but it considered that the four areas identified embraced the most important administrative and management processes. Accordingly, the Group analysed each area to identify specific training needs for several levels and categories of staff. Training needs associated with financial and procurement procedures were accorded high priority.

23. The special needs of very senior staff received close attention in the detailed analysis of administrative and management training needs. Principals and vice-principals carried responsibilities for the management of substantial human and physical resources and required training in modern, corporate management techniques. The Group considered that all newly appointed polytechnic heads and deputy heads should have access to high level management training, ideally before taking up the post, or as soon as possible thereafter.

24. The Group stressed the need to use job descriptions in the staff development process. The responsibilities of job holders with similar titles varies in relation to the size of a polytechnic, the nature of its work and stage of development. For example, the level of managerial responsibility exercised by a departmental head in a small polytechnic equated to that of a sub-department or section head in a much larger institution. Accurate job descriptions - in addition to their main use in the overall management structure - afforded a mechanism to check the degree of responsibility of a job-holder during an appraisal of his training needs.

25. Management techniques developed and used by commerce and industry could be examined by polytechnic management for possible use in the planning and implementation of academic work processes. For example, the management of curriculum development could be improved by resource planning methods, based on techniques used in the engineering and construction industries.

SUMMARY OF DISCUSSION

WORKING GROUP REPORTS

26. The Workshop considered the output of both Working Groups and agreed that the assessments of (i) professional training needs and (ii) administrative and managerial training needs should be combined in a comprehensive analysis of typical training needs for a range of occupations in polytechnics. In order to give guidance to participants and staff engaged in the final design of the model training analysis the Workshop produced a number of agreed conclusions based on the Working Group reports.

27. Staff development should be considered as a dynamic process related to:

(a) The career needs of an individual

(b) The corporate needs of an institution

(c) The social and economic needs of the country

28. Programmes of staff development should cater for the needs of staff at all levels in a polytechnic, including technician and service personnel. At all times staff development should be related to and be directly concerned with the overall efficiency, productivity and smooth operation of a polytechnic.

29. A staff development programme should provide incentives for staff to participate in training processes in a full and positive way. Opportunity for promotion was one important incentive, but it was not always possible to offer a member of staff a more senior post immediately after a period of in-service training, particularly if fixed staffing levels applied. In order to prevent frustration and negative attitudes to staff development it would be advisable to give such staff fresh responsibilities within their present posts until a more senior position became available.

30. The loss of qualified staff to industry was a constant problem in polytechnics. Remuneration and conditions of service in industry and commerce were often irresistable attractions to polytechnic staff, and although a two-way exchange between technical education and industry was desirable, it generally worked to the disadvantage of polytechnics. Staff development programmes could increase this loss of qualified staff to industry unless steps were taken to provide responsibilities commensurate with new skills gained from in-service training. Although it was essential to maintain open recruitment policies in order to attract the best candidates, a vigorous internal staff development programme - linked to planned experience - would assist polytechnic staff to meet external competition.

31. Both Working Groups stressed the importance of resource centres in staff development programmes. In addition to providing learning material for students, such centres could be used to produce in-service training packages for staff development purposes. Training for resource centre staff should be related to the development needs of teaching staff, and in this context the resource centre manager - usually a professional librarian - should be regarded as an educator. In small polytechnics the duties of a librarian were often carried out on a part-time basis and this arrangement created a need for special training programmes for multi-activity posts, which could be extended to other jobs of a dual nature - for example a senior lecturer engaged in part-time industrial liaison duties.

32. The Working Groups also covered common ground on training needs related to participatory activities and a number of special skills used in the processes and conduct of meetings, seminars and training sessions were identified. Training for potential department heads in such activities was given a high priority by both Groups and the model analysis of training needs reflected this special requirement.

33. The need for well designed and executed induction programmes was stressed. Such programmes were necessary for existing staff being transferred to new posts, as well as for new entrants to the polytechnic. The design of induction courses should be based on a phased programme of familiarisation with the institution's organisational structure and work processes, using training inputs such as formal training sessions, internal and external visits, staff handbooks, self-learning texts and counselling sessions with senior staff.

34. The question of staff development for expatriate staff was examined in some detail and the Workshop concluded that as the need to employ such staff was likely to continue for the forseeable future it should investigate ways and means to include such staff in in-service training programmes. The assessment of training needs of expatriate staff should be made on the basis of institutional and national needs. For example, an expatriate member of staff could attend courses at equipment manufacturers prior to a contract, or during leave periods, in order to gain experience on new equipment being supplied to the polytechnic. Another way would be to grant sabbatical leave to long-term expatriates, to undertake studies or projects of direct benefit to the institution.

35. The special training needs of very senior staff could not be isolated from the mainstream of staff development work, although it was recognised that such needs were predominantly in the area of management and administration. The Workshop examined a selection of training needs identified by the Working Groups, together with a number of suggested training inputs. These included visits to industrial organisations in order to study modern management techniques in planning, financial control and industrial relations, and study visits to other technical education institutions. The Workshop stressed the important role of the Commonwealth Association of Polytechnics in Africa (CAPA) in the promotion of regional training activities designed to meet the development needs of very senior staff. For example, CAPA could organise high level conferences for principals and vice-principals, in order to share experience and to enable newly appointed heads to benefit from professional contact with long serving colleagues.

ANALYSIS OF TRAINING NEEDS

36. During the first half of the Workshop, the participants considered the lead paper, country/institutional reports, and other background material, which included:

(a) A paper, 'Providing Adequate Staff for Nigerian Polytechnics and Colleges of Technology', by Dr P.O. Igharo, Principal of Auchi Polytechnic, Nigeria. This paper was presented to the National Conference on Manpower Constraints to Nigeria's Economic Development at the University of Lagos, in January 1979.

(b) A paper, 'A Critical Appraisal of In-Service Staff Development' by Mr D. Maina and Mr M. M. Ng'anga of Kenya Polytechnic.

(c) An information paper, 'Development Co-operation Between Canadian Universities, Colleges and Third World Institutions', by the Canadian International Development Agency, NGO Division.

37. The Workshop then carried out a detailed examination of the training needs of polytechnic staff in two major areas of activity, (i) professional, and (ii) administrative and managerial. The reports of the Working Groups enabled the Workshop to relate the two areas of need, and to refine the detailed training assessments, in order to prepare a comprehensive model analysis of training needs.

38. Accordingly, a model analysis of training needs was prepared, to cover nine main areas of activity.

1. Management and Administration

2. Pedagogical Considerations.

3. Education Systems

4. Extrinsic Factors

5. Financial Aspects

6. Career Information

7. Interpersonal Skills

8. Resources/Resource Centres

9. Staff Development Systems

The Workshop recognised that the nine areas selected did not comprise an exhaustive list of activities, and that it was possible to identify other areas of training needs. Nevertheless, it was considered that the analysis of training needs within these nine main areas constituted a useful model of an institutional training audit, which could be adapted and augmented to suit the needs of individual polytechnics. Such a training needs analysis offered a

possible method of assessing the development needs of staff at all levels, within a framework of an institutions corporate needs, and the social and economic needs of a country.

39. Seven main categories of job classification were used in the analysis : (i) principals, (ii) vice-principals, (iii) head of department, (iv) teachers, (v) librarians, (vi) administrative staff, and (vii) technicians. Again, it was recognised that other job classifications could be considered, but the selection used represented a broad spectrum of posts in most institutions. It was decided that each job classification could be subdivided into three distinct groups.

(a) Recently appointed staff, with no previous experience in the post

(b) Recently appointed staff, with previous experience in the past, gained in other jobs

(c) Long standing occupants of the post

Within each sub-group a further division was made to accommodate a separate analysis of training needs of national and expatriate staff. Each main area of activity was analysed for key elements of training needs; for example, the management and administrative section of the analysis yielded nine key elements. However, it was stressed that this selection could be amended and extended to suit the particular requirements of any polytechnic.

40. In order to measure the training needs within each job classification, a three point scale was devised :

1. Essential

2. Desirable

3. Useful

Using this scale, which could be extended, the Workshop proceeded to draw up a full analysis of training needs for the seven categories of posts given as examples. The ratings given reflected, as far as possible, the findings of the Working Groups and the subsequent refinement by the Workshop plenary sessions. It was emphasised that the suggested ratings related to ideal, long-term standards, and that adjustments could be made to take account of special circumstances at any given time.

CATEGORY	PRINCIPAL						VICE-PRINCIPAL						HEAD OF DEPARTMENT						TEACHER					
Training Needs	A		B		C		A		B		C		A		B		C		A		B		C	
1. MANAGEMENT AND ADMINISTRATION	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E
1.1. Management Processes/Skills (Organisational)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	3	3	3	3
1.2. Management Processes/Skills (Personnel)	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3	3	3	3	3	3
1.3. Management Processes/Skills (Curriculum)	1	1	2	2	3	3	1	1	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1.4. Corporate Policy	1	1	1	1	2	2	1	1	1	1	2	2	1	1	1	1	2	2	1	1	2	2	3	3
1.5. College Regulations	1	1	1	1	3	3	1	1	1	1	3	3	1	1	1	1	3	3	1	1	2	2	3	3
1.6. Administrative and Registrative Procedures	1	1	1	1	3	3	1	1	1	1	3	3	1	1	1	1	3	3	1	1	1	1	3	3
1.7. Familiarisation with Departmental Organisation	1	1	2	1	-	-	1	1	1	1	-	-	1	1	1	1	-	-	1	1	2-3	2-3	-	-
1.8. Background Information on Institution	1	1	1	1	-	-	1	1	1	1	-	-	1	1	1	1	-	-	1	1	1	1	-	-
1.9. Statutory Instruments and Powers	1	1	2-3	1	-	-	1	1	1-2	1	-	-	1	1	2	2	-	-	1	1	2-3	2-3	-	-

CATEGORY	LIBRARIAN						ADMINISTRATIVE STAFF						TECHNICIANS					
Training Needs	A		B		C		A		B		C		A		B		C	
1. MANAGEMENT & ADMINIATRATION	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E
1.1. Management Processes/Skills (Organisational)	3	3	3	3	3	3	3	3	3	3	-	-	-	-	-	-	-	-
1.2. Management Processes/Skills (Personnel)	1	1	1	1	2	2	3	3	-	-	-	-	-	-	-	-	-	-
1.3. Management Processes/Skills (Curriculum)	3	3	3	3	3	3	-	-	-	-	-	-	-	-	-	-	-	-
1.4. Corporate Policy	1	1	1	1	3	3	3	3	3	3	-	-	3	3	3	3	-	-
1.5. College Regulations	1	1	1	1	3	3	1	1	1	1	-	-	1	1	1	1	-	-
1.6. Administrative and Registrative Procedures	1	1	1	1	3	3	1	1	1	1	-	-	3	3	-	-	-	-
1.7. Familiarisation with Departmental Organisation	1	1	1	1	-	-	1	1	3	3	-	-	1	1	3	2	-	-
1.8. Background Information on Institution	1	1	2-3	2-3	-	-	1	1	2-3	1	-	-	1	1	1	1	-	-
1.9. Statutory Instruments and Powers	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

CATEGORY	PRINCIPAL						VICE-PRINCIPAL						HEAD OF DEPARTMENT						TEACHER					
Training Needs	A		B		C		A		B		C		A		B		C		A		B		C	
2. PEDAGOGICAL CONSIDERATIONS	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E
2.1. Human Learning Processes	-	-	-	-	-	-	-	-	-	-	-	-	3	3	-	-	-	-	1	1	2	2	3	3
2.2. Procedures for the Planning of Teaching and Learning	-	-	-	-	-	-	-	-	-	-	-	-	3	3	-	-	-	-	1	1	-	-	-	-
2.3. Curriculum Development and Evaluation	-	-	-	-	-	-	3	3	3	3	-	-	1	1	2	2	3	3	1	1	1	1	3	3
2.4. Specialist Guidance on Subject and Curriculum Matters	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	3	3	-	-
2.5. Team Teaching Methods	-	-	-	-	-	-	-	-	-	-	-	-	3	3	-	-	-	-	1	1	2-3	2-3	2-3	2-3
2.6. Access to Research Evidence	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	1	1	1	1	1	1
2.7. Development of Data Search Skills	-	-	-	-	-	-	-	-	-	-	-	-	3	3	-	-	-	-	1	1	-	-	-	-
2.8. Design of Examination Tasks and Projects	-	-	-	-	-	-	-	-	-	-	-	-	3	3	-	-	-	-	1	1	3	3	3	3
2.9. Updating on Subject Matter	-	-	-	-	-	-	-	-	-	-	-	-	3	3	2-3	2-3	2	2	2	2	2-3	2-3	3	3

CATEGORY	LIBRARIAN						ADMINISTRATIVE STAFF						TECHNICIANS					
Training Needs	A		B		C		A		B		C		A		B		C	
2. PEDADAGOGICAL CONSIDERATIONS	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E
2.1. Human Learning Processes	2-3	2-3	3	3	3	3	-	-	-	-	-	-	-	-	-	-	-	-
2.2. Procedures for the Planning of Teaching and Learning	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.3. Curriculum Development and Evaluation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.4. Specialist Guidance on Subject and Curriculum Matters	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.5. Team Teaching Methods	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.6. Access to Research Evidence	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-
2.7. Development of Data Search Skills	3	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.8. Design of Examination Tasks and Projects	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.9. Updating on Subject Matter	-	-	-	-	3	3	-	-	-	-	-	-	-	-	-	-	-	-

CATEGORY	PRINCIPAL						VICE-PRINCIPAL						HEADS OF DEPARTMENT						TEACHER					
Training Needs	A		B		C		A		B		C		A		B		C		A		B		C	
3. EDUCATION SYSTEMS	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E
3.1. Knowledge of National System	-	1	-	3	-	-	-	1	-	3	-	-	3	1	-	3	-	-	1	1	-	2-3	-	-
3.2. Updating on Developments in Technical/ Higher Education	2-3	2-3	2-3	2-3	2-3	2-3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
3.3. Technical/ Higher Education in Other Countries	2	3	3	3	3	3	3	3	3	3	3	3	-	-	-	-	-	-	-	-	2-3	2-3	-	-

CATEGORY	LIBRARIAN						ADMINISTRATIVE STAFF						TECHNICIANS					
Training Needs	A		B		C		A		B		C		A		B		C	
3. EDUCATION SYSTEMS	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E
3.1. Knowledge of National System	-	3	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3.2. Updating on Development in Technical/Higher Education	3	3	3	3	3	3	-	-	-	-	-	-	-	-	-	-	-	-
3.3. Technical/Higher Education in Other Countries	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

CATEGORY	PRINCIPAL						VICE-PRINCIPAL						HEADS OF DEPARTMENT						TEACHER					
Training Needs	A		B		C		A		B		C		A		B		C		A		B		C	
4. EXTRINSIC FACTORS	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E
4.1. Knowledge of Indigenous Customs and Standards, e.g. Industry, Society, Law	-	1	-	1	-	-	-	1	-	1	-	-	-	1	-	1	-	-	-	1	-	2-3	-	-
4.2. Relationship with External Bodies e.g. Industry, Training Agencies	1	1	2-3	2-3	-	-	1	1	2-3	2-3	-	-	1	1	1	1	-	-	1	1	3	2-3	-	-
4.3. Familiarity with Industrial Practices	-	3	-	3	-	-	3	1	3	1	-	-	1	1	2-3	2-3	-	-	2-3	1	2-3	2-3	3	3
4.4. Updating on Developments in Technology and Materials	-	-	-	-	-	-	-	-	-	-	-	-	3	3	2-3	2-3	1	1	3	3	2-3	2-3	1	1
4.5. National, Regional and Local Manpower Forcasting	1	1	3	2	-	-	3	3	3	3	-	-	1	1	2-3	2-3	-	-	-	-	-	-	-	-

CATEGORY	LIBRARIAN						ADMINISTRATIVE STAFF						TECHNICIANS					
Training Needs	A		B		C		A		B		C		A		B		C	
4. EXTRINSIC FACTORS	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E
4.1. Knowledge of Indigenous Customs and Standards, e.g. Industry, Society, Law	-	1	-	2-3	-	-	-	1	-	2-3	-	-	-	1	-	2-3	-	-
4.2. Relationship Bodies e.g. Industry, Training Agencies	1	1	2-3	2-3	-	-	-	-	-	-	-	-	3	3	-	-	-	-
4.3. Familiarity with Industrial Practices	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	-	-	-
4.4. Updating on Developments in Technology and Materials	-	-	-	-	-	-	-	-	-	-	-	-	1	3	-	-	3	3
4.5. National, Regional and Local Manpower Forecasting	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

CATEGORY	PRINCIPAL						VICE-PRINCIPAL						HEADS OF DEPARTMENT						TEACHER					
Training Needs	A		B		C		A		B		C		A		B		C		A		B		C	
5. FINANCIAL ASPECTS	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E
5.1. Financial Planning and Budgetary Control	1	1-3	3	3	-	-	1	1-3	3	3	-	-	3	3	-	-	-	-	-	-	-	-	-	-
5.2. Cash Flow Procedures	1	1	2-3	2-3	-	-	1	1-3	2	2	-	-	2	2	2	2	-	-	-	-	-	-	-	-
5.3. Procurement Procedures	1	1	2-3	2-3	-	-	1	1-3	2	2	-	-	1	1	1	1	-	-	2-3	2-3	3	3	-	-

CATEGORY	LIBRARIAN						ADMINISTRATIVE STAFF						TECHNICIANS					
Training Needs	A		B		C		A		B		C		A		B		C	
5. FINANCIAL ASPECTS	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E
5.1. Financial Planning and Budgetary Control	1	1	-	-	-	-	1-3	1-3	1-3	1-3	-	-	-	-	-	-	-	-
5.2. Cash Flow Procedures	1	1	-	-	-	-	1-3	1-3	1-3	1-3	-	-	-	-	-	-	-	-
5.3. Procurement Procedures	2-3	2-3	3	3	-	-	1-3	1-3	2-3	2-3	-	-	1-3	1-3	1-3	1-3	-	-

CATEGORY	PRINCIPAL						VICE-PRINCIPAL						HEADS OF DEPARTMENT						TEACHER					
Training Needs	A		B		C		A		B		C		A		B		C		A		B		C	
6. CAREER INFORMATION	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E
6.1. Information on Careers and Personal Development	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1-3	1-3	2-3	2-3	1	1	1	1	1	1
6.2. Career Guidance by Counselling	-	-	-	-	-	-	-	-	-	-	-	-	2-3	2-3	2-3	2-3	3	3	1	1	2	2	3	3
6.3. Career Advancement Through Further Study/ Research	-	-	2-3	2-3	3	3	2-3	2-3	2-3	2-3	3	3	1	1	1	1	1-3	1-3	3	3	1	1	2	2
6.4. Conditions of Service	-	-	-	-	-	-	-	1	-	1	-	-	1	1	-	1	-	-	1	1	2-3	2-3	-	-
6.5. Information on Associations and Professional Bodies	-	-	-	-	-	-	-	-	-	-	-	-	3	3	3	3	-	-	1	1	2-3	2-3	-	-

CATEGORY	LIBRARIAN						ADMINISTRATIVE STAFF						TECHNICIANS					
Training Needs	A		B		C		A		B		C		A		B		C	
6. CAREER INFORMATION	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E
6.1. Information on Careers and Personal Developments	1	1	2-3	2-3	3	3	1	1	1	1	1	1	1	1	1	1	1	1
6.2. Career Guidance by Counselling	1	1	1	1	-	-	1	1	1	1	1	1	1	1	1	1	1	1
6.3. Career Advancement Through Further Study/ Research	3	3	1	1	2-3	2-3	-	-	2-3	2-3	2-3	2-3	1	1	2-3	2-3	2-3	2-3
6.4. Conditions of Service	1	1	2-3	2-3	-	-	1	1	2-3	2-3	-	-	1	1	2-3	2-3	-	-
6.5. Information on Associations and Professional Bodies	1	1	-	-	-	-	1	1	-	-	-	-	-	-	-	-	-	-

CATEGORY	PRINCIPAL						VICE-PRINCIPAL						HEADS OF DEPARTMENT						TEACHER					
Training Needs	A		B		C		A		B		C		A		B		C		A		B		C	
7. INTERPERSONAL SKILLS	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E
7.1. Participatory Skills	1	1	1-3	1-3	1-3	1-3	1	1	1-3	1-3	1-3	1-3	1	1	1-3	1-3	1-3	1-3	1	1	1	1	1	1
7.2. Communication Skills	3	3	-	-	-	-	2	2	2-3	2-3	-	-	1	1	1-3	1-3	1-3	1-3	1	1	1	1	1	1
7.3. Committee/Group Procedures and Behaviour	1	1	1-3	1-3	1-3	1-3	1	1	1-3	1-3	1-3	1-3	1	1	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3

CATEGORY	LIBRARIAN						ADMINISTRATIVE STAFF						TECHNICIANS					
Training Needs	A		B		C		A		B		C		A		B		C	
7. INTERPERSONAL SKILLS	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E
7.1. Participatory Skills	1	1	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	-	-	-	-	-	-	-	-
7.2. Communication Skills	1	1	1-3	1-3	1-3	1-3	1	1	1-3	1-3	-	-	1	1	-	-	-	-
7.3. Committee/Group Procedures and Behaviour	1	1	1-3	1-3	1-3	1-3	2-3	2-3	-	-	-	-	-	-	-	-	-	-

CATEGORY	PRINCIPAL						VICE-PRINCIPAL						HEADS OF DEPARTMENT						TEACHER					
Training Needs	A		B		C		A		B		C		A		B		C		A		B		C	
8. RESOURCES/ RESOURCE CENTRES	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E
8.1. Knowledge of College Resources	1	1	1	1	-	-	1	1	1	1	-	-	1	1	1	1	-	-	1	1	1	1	1	1
8.2. Design, Control and Evaluation of Resource Centres	-	-	-	-	-	-	1-3	1-3	1-3	1-3	1-3	1-3	-	-	-	-	-	-	-	-	3	3	-	-
8.3. Utilisation of Resource Centres	-	-	-	-	-	-	1-3	1-3	1-3	1-3	1-3	1-3	1	1	1	1	1	1	1	1	1	1	1	1
8.4. Storage, Retrieval and Dissemination of Information	-	-	-	-	-	-	1-3	1-3	1-3	1-3	1-3	1-3	1	1	1	1	1	1	1	1	1	1	1	1
8.5. New Developments in Educational Technology	-	-	-	-	-	-	-	-	-	-	-	-	1	1	1	1	1	1	1	1	1	1	1	1

CATEGORY	LIBRARIAN						ADMINISTRATIVE STAFF						TECHNICIANS					
Training Needs	A		B		C		A		B		C		A		B		C	
8. RESOURCES/ RESOURCE CENTRES	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E
8.1. Knowledge of College Resources	1	1	1	1	1	1	1	1	1	1	-	-	1	1	1	1	-	-
8.2. Design, Control and Evaluation of Resource Centres	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-
8.3. Utilization of Resource Centres	1	1	1	1	-	-	-	-	-	-	-	-	1	1	2-3	2-3	1-3	1-3
8.4. Storage, Retrieval and Dissemination of Information	1	1	1-3	1-3	1-3	1-3	-	-	1-3	1-3	1-3	1-3	-	-	-	-	-	-
8.5. New Developments in Educational Technology	1	1	1	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-

CATEGORY	PRINCIPAL						VICE-PRINCIPAL						HEADS OF DEPARTMENT						TEACHER					
STAFF DEVELOPMENT SYSTEMS	A		B		C		A		B		C		A		B		C		A		B		C	
9. TRAINING NEEDS	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E
9.1. Staff Appraisal Systems and Techniques	1	1	1-3	1-3	1-3	1-3	1	1	1-3	1-3	1-3	1-3	1	1	1-3	1-3	1-3	1-3	1	1	1	1	1	1
9.2. Interviewing Processes/Skills e.g. Selection, Appraisal Counselling	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1	1	1	1	1	1
9.3. Self-Appraisal Processes/ Techniques	-	-	-	-	-	-	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1-3	1	1	1	1	1	1
9.4. Information on Aims and Processes of Staff Development System	1	1	1-3	1-3	-	-	1	1	1-3	1-3	-	-	1	1	1-3	1-3	3	3	1	1	1	1	1	1

CATEGORY	LIBRARIANS						ADMINISTRATIVE STAFF						TECHNICIANS					
Training Needs	A		B		C		A		B		C		A		B		C	
9. STAFF DEVELOPMENT SYSTEMS	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E	N	E
9.1. Staff Appraisal Systems and Techniques	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
9.2. Interviewing Processes/ Skills e.g. Selection, Appraisal Counselling	1	1	1-3	1-3	1-3	1-3	1-3	1-3	-	-	-	-	1-3	1-3	-	-	-	-
9.3. Self Appraisal Processes/Techniques	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
9.4. Information on Aims and Processes of Staff Development System	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

GROUP 3 - POLYTECHNIC STAFF DEVELOPMENT SCHEMES

General considerations

41. The Working Group stressed that the staff development strategies and priorities of polytechnics should follow national education policies and objectives. In accepting this essential requirements, the Working Group considered that polytechnics had an important role to play in the formulation of policies and priorities and should work closely with the appropriate ministries and manpower development bodies.

42. In order to make the best use of a polytechnic's special position as an institution serving local, regional and national needs, the Working Group suggested possible structures to facilitate the flow of information into the policy-making processes for national development. A model of one such structure was devised, showing the polytechnic as a focus of national policies and local needs. In this model, shown overleaf, the flow of information and feedback at each level was identified as:

(a) At government level - primary inputs on political, economic and social policies.

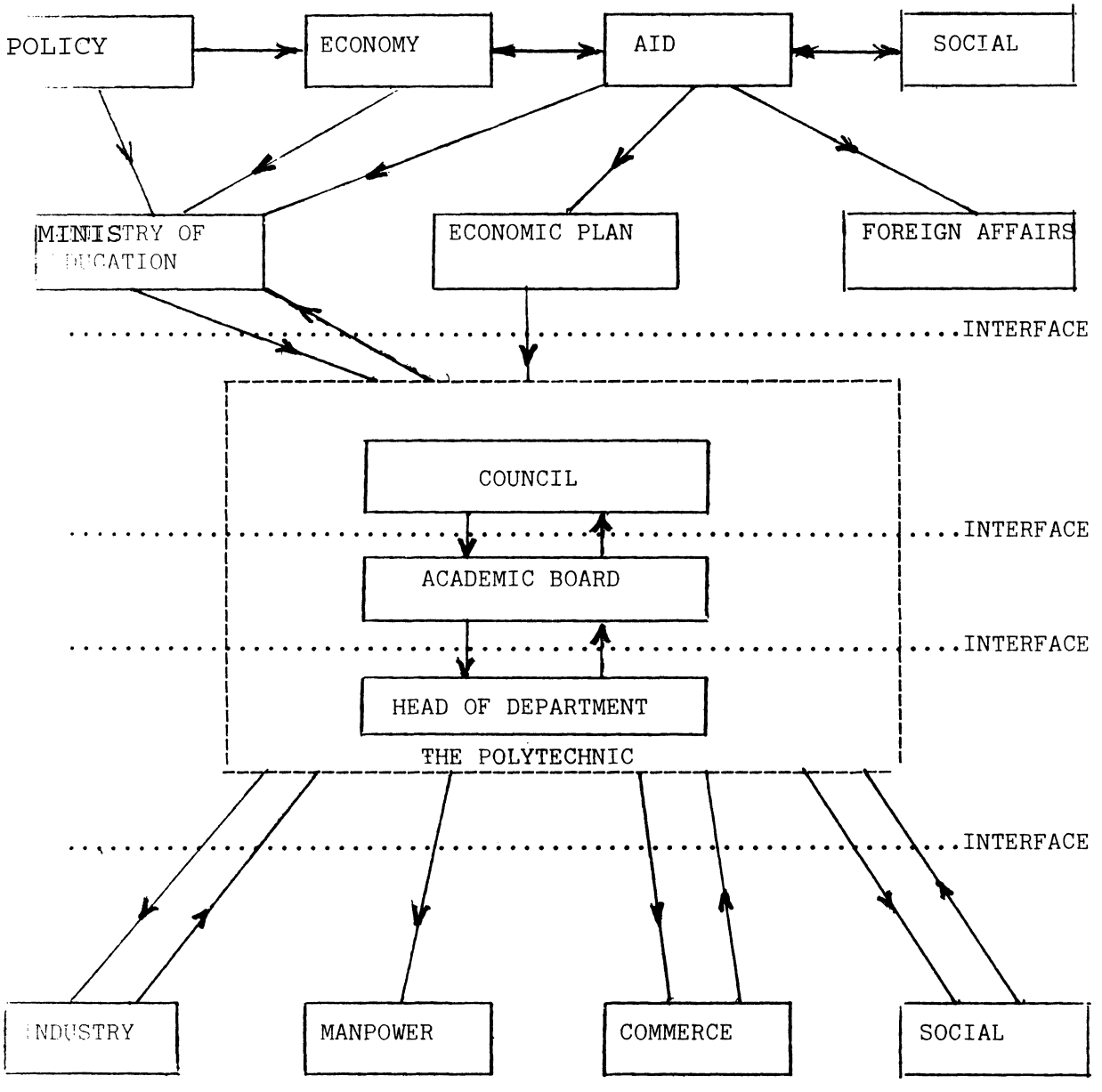
(b) At polytechnic level - guidance from appropriate ministries on government manpower and training policies.

(c) At industry/commerce level - regular two-way flow of information between polytechnic and employers.

43. The Working Group identified several interfaces, within the model structure, at which polytechnic staff should recognise policies and priorities. Staff development schemes should take full account of the polytechnic's role as a focus of national policies and local needs - at the design, implementation and evaluative stages.

THE POLYTECHNIC AS A FOCUS
OF NATIONAL POLICIES AND LOCAL NEEDS

National Policies Input - Government Level

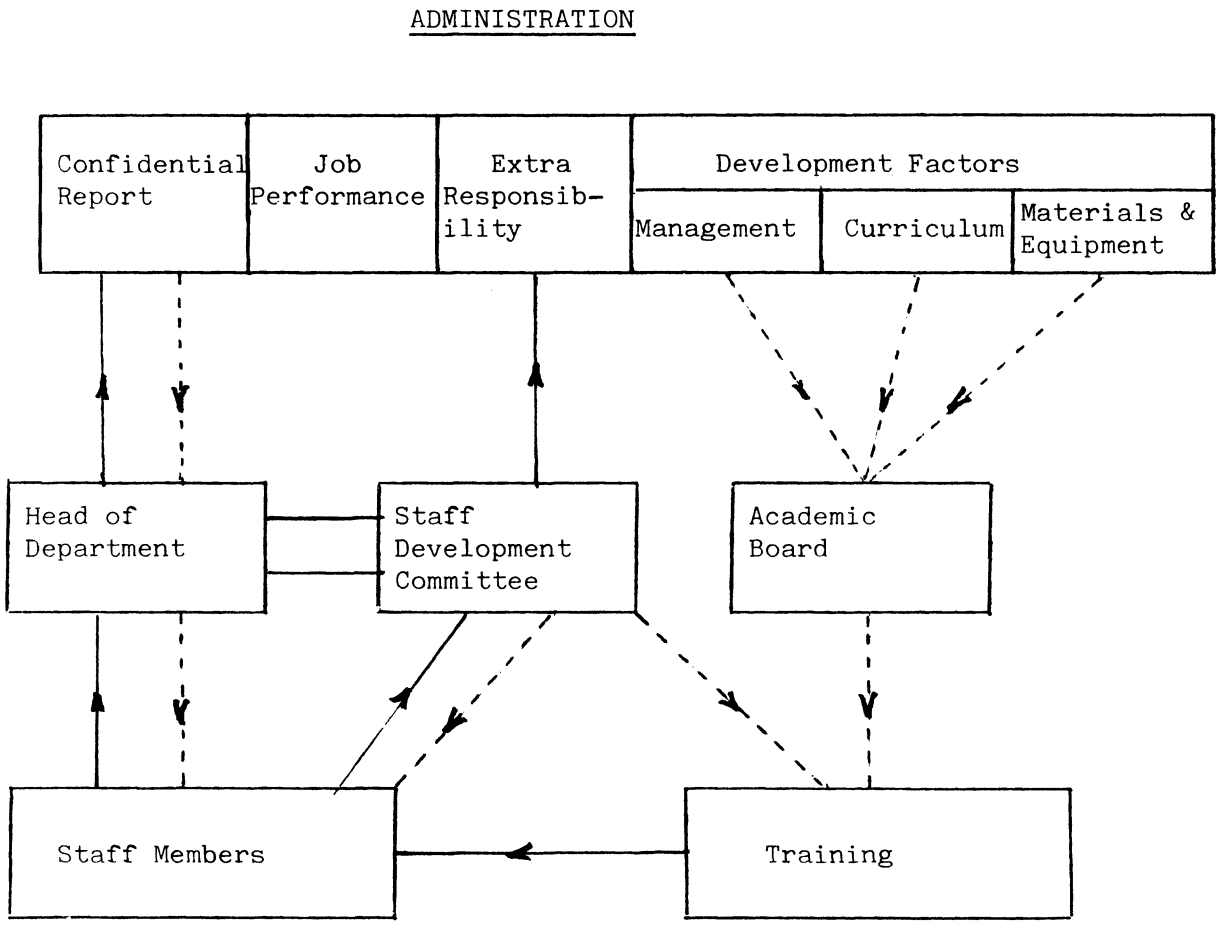


OUTPUT - LOCAL NEEDS

Identification of training priorities

44. The Working Group reviewed a selection of formal and informal methods to assess training needs. Formal methods included the use of annual confidential reports and regular reviews of qualifications and experience. Informal methods, such as frequent interchanges of staff views and suggestions, and good interpersonal relationships, were also useful.

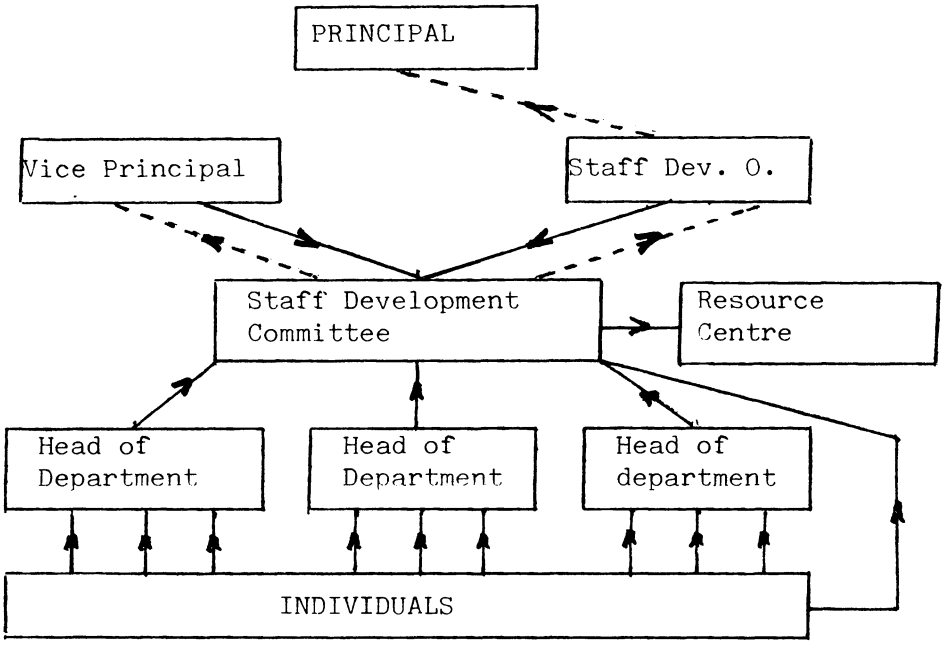
45. A number of institutional mechanisms were examined, in order to identify practical systems to control staff development processes. The Working Group embodied the most effective elements of formal and informal methods in a model structure, designed to facilitate the identification of training priorities.



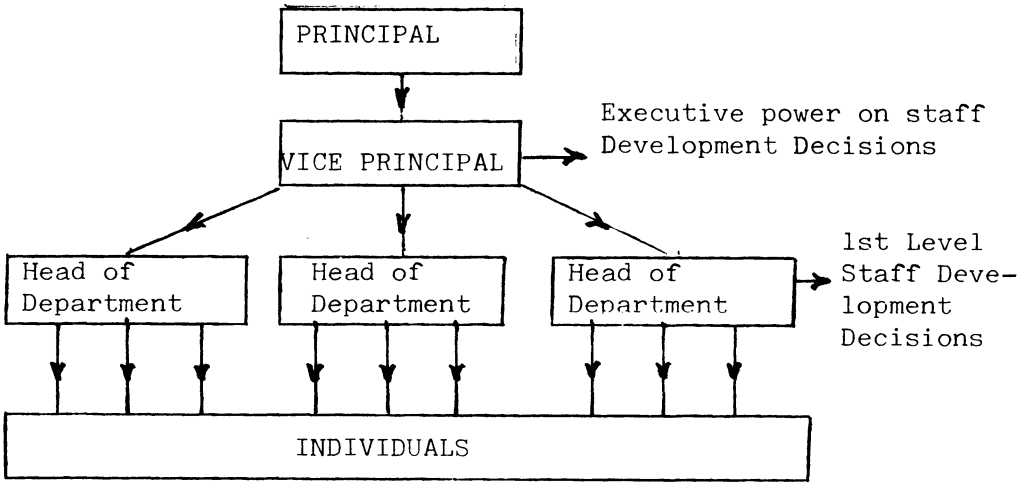
Control mechanisms for staff development

46. Two possible models of staff development control were suggested by the Working Group. The first model was based on participative methods, and the second on a more autocratic approach to staff development.

PARTICIPATIVE MODEL



AUTOCRATIC MODEL



Resources to sustain staff development

47. The Working Group examined the nature and scale of the three principal inputs to a staff development scheme; (i) human resources (ii) financial resources, (iii) physical resources. The application of these resources in the participative and autocratic models would depend on the size and stage of development of a polytechnic. However, the Working Group considered that the fundemental elements of resource inputs would include the following.

Activities	Human Resources			
	Participative		Autocratic	
	Large	Small	Large	Small
1. Planning and implementing training surveys	C	C	C	C
2. Collation of survey data	SDO	VP	P/VP	P/VP
3. Preparation of training recommendations	HoD	HoD	HoD	HoD
4. Staff Appraisals	P/HoD	P/HoD	P/HoD	P/HoD
5. Assessment of training needs arising from local/ national development strategies	P/VP	P/VP	P/VP	P/VP
6. Preparation of training programmes	SDo	VP	SDo	VP
7. Counselling	P/VP/HoD	P	P/VP/HoD	P
8. Planning in-house courses	SDC	VP	VP/HoD	P/HoD
9. Liaison with external bodies (e.g. industry)	P/HoD/ILO	P/ILO	P/HoD	P/HoD
10. Co-ordination of staff development processes	VP	P/HoD	VP	P/HoD

KEY

P. - Principal
VP - Vice-Principal
HoD - Head of Department
SDO - Staff Development Officer
ILO - Industrial Liaison Officer
CO - Counselling Officer
C - Consultant
SDC - Staff Development Committee

Source of finance	Institutional responsibility
1. Budgetary provision	Approved Estimates. Specific Vote for Staff Development
2. National Scholarships	Made available to all nationals
3. External funds and scholarships	(a) Full knowledge of technical co-operation schemes. (b) Liaison with appropriate national agency. Operation of selection process within institution

Physical Resources	
1. Staff Information Room	- Conditions of Service - Professional publications - Library accession lists - Educational Technology Information - Course information
2. Learning Resource Centre	- Hardware - Facilities for software
3. Regular Publication of News sheet (including information on courses)	
4. Staff Development Office,	- Seminar Room
5. Staff Development Section in Library	
6. Self-rating sheets (based on Analysis of Training Needs)	

Liaison with sister institutions

48. The Working Group emphasised the need for close and effective liaison with other technical education institutions, and suggested the following methods to implement such co-operation.

(a) Exchange of information: for example, prospectus, training manuals, instructional material, library lists, directories of resources.

(b) Staff exchange programmes

(c) Joint research programmes

(d) Joint ventures on staff training

(e) Liaison and exchanges in external examinations, advisory panel work and practical work assessment.

GROUP 4 - REGIONAL CO-OPERATION

49. The Working Group welcomed the establishment of the Commonwealth Association of Polytechnics in Africa (CAPA) as a regional organisation serving the needs of all polytechnics in Commonwealth African countries. Before proceeding to a detailed examination of regional co-operation, the Working Group reviewed the Constitution of CAPA, and its sub-regional structure. It noted that the Constitution placed a special emphasis on staff development activities and that one of the main tasks of the Association's Secretariat would be to facilitate co-operation between member institutions, in order to make full use of their human resources.

50. The Working Group stressed the need to attract technical assistance from international and regional aid agencies for CAPA's regional and sub-regional staff development programmes. However, it was important that such inputs should complement, and not conflict with national staff development programmes. Close consultation between the CAPA Secretariat and governments - through member institutions - could be maintained to ensure that CAPA's activity in staff development matched in with direct bilateral and multilateral aid to member countries.

51. It was desirable to promote common standards, applicable to professional training for polytechnic staff in the region. To this end, CAPA could take a leading role in the formulation of agreed guidelines on the nature and standard of training for polytechnic staff. The Working Group suggested that a sizeable proportion of CAPAs resources - from its own funds and external sources - should be devoted to the preparation of training guidelines.

52. From the Analysis of Training Needs the Working Group identified six main areas of co-operative activity. Some of these activities were seen as full regional exercises, others as co-operative ventures at sub-regional level, or as joint efforts by neighbouring colleges. Within each main area a sample of key training elements was extracted from the Analysis of Training Needs, and set out in the form of model guidelines. The Working Group suggested that the model guidelines could be used for the following purposes:

(a) As a basis for the design of regional and sub-regional workshops.

(b) To enable member institutions to make decisions on the use of internal and external training inputs to meet their own staff development needs.

(c) To identify subjects for training manuals and self-learning texts, which could be produced by CAPA as part of its service to member institutions.

(d) To assist in discussions between CAPA and aid agencies, on the nature and scale of technical assistance for regional and sub-regional staff development programmes.

MODEL GUIDELINES - REGIONAL COOPERATION ON POLYTECHNIC STAFF DEVELOPMENT

MAIN AREA	PRINCIPAL TRAINING NEEDS (referred to Training Analysis)	TRAINING ACTIVITY		
		POLYTECHNIC/ NATIONAL	CAPA SUB-REGIONAL	CAPA REGIONAL
1. Studies to improve the content and methods of teaching in polytechnics Studies to improve curricula and examinations.	Human learning resources (2.1)	Internal seminars	Workshops	Workshops/Manuals
	Management processes (1.3)	Counselling	Workshops	Seminars/ Manuals
	Design of examination tasks and projects (2.8)	Internal task groups	Study visits	Seminars/Guidelines
	Updating on subject matter (2.9)	Internal seminars	Seminars	Manuals on technical subjects
2. Operation of documentation and teaching equipment centres	Utilisation of resource centres (8.2)	Internal seminars	Seminars/Study Visits	Clearing house facilities
	Development of data search skills (2.7)	Attachments to resource centre	Seminars/Study visits	Manuals/Study visits
	Storage/retrieval/ dissemination of information (8.4)	Internal seminars	Study visits	Manuals/clearing house facilities
3. Studies to improve the organisation and management of polytechnics	Administration procedures (1.6)	Counselling/ internal seminars	Seminars	Guidelines/study visits for senior staff
	Committee/Group Procedures (7.3)	Counselling/ coaching	Seminars	Guidelines/ seminars

MAIN AREA	PRINCIPAL TRAINING NEEDS (referred to Training Analysis)	TRAINING ACTIVITY		
		POLYTECHNIC/ NATIONAL	CAPA SUB-REGIONAL	CAPA REGIONAL
4. Studies (in co-operation with government and industry) on: (a) Problems and needs of technical and vocational education.	Knowledge of indigenous standards - industrial codes of practice; legislation on education, industry, health and safety. (4.1)	Internal Seminars, Bibliographies.	Study Vists	Clearing house facilities.Collection and dissemination of information.
(b) Manpower and training needs.	National and regional manpower planning. (4.5)	Joint seminars - Ministries/ Industry.	Seminars	Publication of information on regional manpower.
(c) Transfer and development of technology.	Updating on technology, materials and industrial processes. (4.4)	Joint meetings with counterparts in industry.	Seminars/Study Visits	Workshops/Clearing House facilities.
5. Student and trainee exchanges, including fellowship programmes	Comparative studies on technical/higher education. (3.3)	Internal study groups.	Interchange of study & research material.	Clearing House on international & Regional studies.
	Knowledge of bilateral & multilateral fellowship programmes (4.2)	Counselling/Resource Centre.	Sub-regional publications.	Clearing House publication.

SUMMARY OF COUNTRY AND INSTITUTION PAPERS

Botswana

It is Government policy to encourage in-service training for technical education staff and every effort is made to provide facilities to enable serving technical teachers to study for internationally recognised professional qualifications. A member of the Botswana Polytechnic staff is designated as the Botswana representative of the City and Guilds of London Institute. Tutorial classes held at the Polytechnic in order to assist full-time technical teachers to carry out private study programmes for professional qualifications. In addition, every endeavour is made by the Government to obtain third country training awards for serving technical teachers who show potential and a determination to advance within the technical education system.

The need for well educated and trained technicians at basic, intermediate, and advanced levels is recognised by the Government and this is reflected in recent actions to improve the remuneration of technical teachers and instructors. The Salaries Review Committee has drawn attention to the loss of technical instructors, who have received overseas training, from the educational system. Recommendations for a separate salary scale for technical teachers and instructors are being considered.

A three year full-time course for training school leavers to become secondary school woodwork teachers is being offered and the trainees spend the first two years studying for the City and Guilds course 834 for carpentry and joinery, followed by a third year to study for the City and Guilds course 730 - Further Education Teachers Certificate. The Polytechnic is heavily dependent on expatriate teaching staff, but efforts are being made to increase technical teaching opportunities for nations by providing overseas training for Polytechnic students. Ways to provide training for such students within the country are being actively investigated. A vigorous programme to up-grade serving national technical staff through overseas training awards is in existence.

The Gambia

The Technical Training Unit at the Gambia College offers a technical education course within the College's primary teacher education programme. The main intake to the course is from technical students who have successfully completed two year courses at the Vocational Training Centre, leading to City and Guilds Certificates in mechanical engineering craft practice, welding and fabrication, automobile mechanics and woodwork.

(a) teach pupils in the 12-16 age group the practice of simple craft, in the method "learning by doing".

(b) develop a creative ability in students.

(c) convince pupils of the worthiness of practical work and the satisfaction to be gained through handwork.

(d) give school leavers who wish to enter a vocational training course a sound foundation for a career.

The course content includes the major subjects of metal work, woodwork and technical, together with a number of other subjects under a general heading of Methods (technical). In the metalwork and woodwork courses, emphasis is given to the manufacture of simple utensils and garden tools. The technical drawing course encourages students to produce teaching materials for later use in schools. Teaching practice is undertaken during the third term for a period of six weeks under the close supervision of lecturers. During teaching practice the lecturers and students hold regular consultations to improve the trainee's performance. The Gambia College organises annual in-service training courses for qualified teachers, in collaboration with the Department of Education.

Ghana

The three Polytechnics in Ghana, at Accra, Kumari and Takoradi were found around 1954 as technical institutes. In the early years of operation the institutions relied heavily on expatriate staff but, by 1964 most of the expatriate staff had been replaced by nationals. Technical teacher training within Ghana was established in 1960 at the Kumari Technical Training Centre, later to become the Kumasi Advanced Technical Teachers College.

There are three types of technical teachers in the Ghana Education Service:

(a) technical/vocational subject teachers.

(b) teachers of industrial arts subjects, woodwork and metalwork.

(c) business and commercial subject teachers.

The general policy at national and institutional levels is that staff must be adequately qualified and relevant industrial or commercial experience before appointment. In practice it is extremely difficult to attract and retain staff from industry due to disparate pay scales, and some staff have to be recruited without the required industrial experience.

The Ghana Education Service is responsible for the recruitment and training of teachers. All new entrants are selected by interview and successful applicants for technical teaching posts are given an induction programme at the Advanced Technical Teachers College. After serving one year, or more, the technical teacher may qualify for the technical teachers certificate. Staff development officers are appointed within the Polytechnics to help new and inexperienced teachers by means of informal meetings and seminars, to discuss problems and identify training needs.

As an aid to staff development in the Polytechnics, all staff are actively involved in the administration of the institution through service on committees. In addition, specific administrative personal duties are assigned to individual teachers as part of their personal staff development. Staff are encouraged and given opportunities to refresh industrial experience by means of industrial attachments of between one and three months. Appropriate allowances are given as an inducement to undertake such attachments.

Staff evaluation is carried out through a system of staff appraisal reporting, initially by heads of department and finally by the Principal. Annual confidential reports on all staff are submitted to the Manpower Division of the Ghana Education Service. In addition to this formal appraisal, students are asked to submit unbiassed reports on teaching staff, using staff evaluation forms. This information is uded in the overall assessment of staff and the identification of training needs.

The main centre for in-service training is the Advanced Technical Teachers College, which has excellent facilities for this purpose. The College is developing a resource centre for use by staff from polytechnics and other institutions. Technical education staff have access to the facilities at the Institute of Education Planning and Administration, University of Cape Coast.

Kenya

The Kenya Polytechnic and the Mombasa Polytechnic are institutions of further education set up by the Government in 1961. The polytechnics offer technical and commercial courses, mainly at technician level, to provide skilled personnel for industry, commerce and the public service.

Sicne 1961 the polytechnics have received major inputs of technical assistance towards staff development from international agencies in the form of short-term visiting experts and counterpart training. The success of these training programmes is reflected by the number of Kenyans now in post. In 1967 the Kenya Polytechnic staff of 77 included 69 expatriates; by 1979 the establishment of 177 included 114 Kenyans. The need for expatriate staff in specialised areas is likely to continue for some time, but by 1985 it is expected that expatriate staff will be phased out at both polytechnics. Government scholarships and awards offered by international agencies are an essential part of staff development programmes in the polytechnics and a total of 50 awards are granted each year.

At the Kenya Polytechnic a staff development committee advises the Principal on staff training needs. Members of the Committee identify general and specific training needs in their own departments, particularly those related to technological change.

Induction training for new staff is considered to be a vital component of staff development programmes. Some new entrants to the polytechnic staff are recruited directly from institutions of higher education and industry and they often lack practical skills and teaching experience. The loss of experienced staff to industry and public service creates special difficulties in maintaining a good balance in the technical teacher force and reinforces the need to develop new entrants in the shortest possible time.

Lesotho

Before independence staff development and training for technical teachers received little or no attention. However, following independence a number of students from the Lerothdi Technical Institute were sent for teacher training in Israel and this became an established pattern for the development and training of staff at the Institute. In addition, some students were sent to Britain in order to obtain technical qualification, such as the City and Guilds Full Technological Certificate, and also Certificates

in Education.

Bi-lateral aid in the form of expatriate lecturers, included the use of counterpart training. For example, national counterparts have received training in the Federal Republic of Germany, after which they rejoined their German counterparts at the Institute. Industrial enterprises in Lesotho carry out training for their staff, using the most modern methods and techniques and the Institute staff are exposed to and benefit from such training.

In order to carry out staff development in other technical institutions in-service courses are arranged in collaboration with the British Council and visiting experts visit Lesotho to offer training in teaching aids and materials, and technical drawing. It is the firm policy of Government to encourage international contacts through exchange of ideas, information and staff attachments in order to promote staff development in the technical education institutions in Lesotho.

Malawi

The main centre for technical education is Malawi Polytechnic, which offers degree and diploma courses as a college of the University of Malawi, and technical, craft and secretarial courses under the auspices of the Polytechnic Board of Governors. In the past the Polytechnic has depended on the employement of expatriate staff, but a firm policy to develop national staff is steadily redressing the balance. Nationals appointed to lecturers posts are required to have a good first degree, but in some subject areas, notably engineering, it has been necessary to appoint diploma students as Staff Associates. Most lecturers have some industrial experience and it is a firm policy to encourage staff to extend such experience.

Policies on individual and general training needs are reviewed on a continuous basis by Heads of Department and close liaison is maintained between the Heads and the Principal on staff development programmes. A system of continuous assessment, coupled with annual confidential reports is used to identify training needs, in addition to providing recommendations for remuneration and promotion.

In 1978 the Polytechnic held a staff development workshop, assisted by staff from the Huddersfield Polytechnic. Since that time review sessions have been held and a further full workshop is planned. Specialist workshops, for example on language laboratories are planned to take place, with assistance from UNESCO and the British Council. The Polytechnic maintains close liaison with international agencies, associationa dn overseas technical institutions in matters related to staff development and training, as part of an overall policy to improve standards of performance.

Mauritius

Technical and vocational education and training is offered at two Industrial Trade Training Centres. At present there is no institution for training technical teachers and instructors and trainee staff are sent overseas for further practical and theoretical training provided by international agencies. The training of national counterparts is carried out through fellowships offered by the ILO, tenable in Britain and France. A Central Training Unit is being established in collaboration with the World Bank, in order to provide teacher training.

Nigeria

New entrants to the Polytechnic teaching force are expected to have high-level qualifications from universities, polytechnics or advanced vocational training institutions. The level of initial appointment depends on the length of post-qualification experience. Most Polytechnics face competition from industry in recruitment of staff and the loss of lecturers to universities and industry is a constant problem.

Some form of staff development has been established in all Polytechnics and there is an increasing attention to the need to establish formal, but practical staff development schemes to improve the performance of staff. Heads of Polytechnics have identified the major needs as, (a) industrial/ professional work experience; (b) teaching experience; and (c) pedagogical and management training. The Council of Heads of Technological Institutions (COHEADS) has, since its inauguration in 1976, made major efforts to improve staff development in Polytechnics and Colleges of Technology through workshop, seminars and co-operative activities with overseas agencies and institutions. A recent example of this is a visit to Nigeria by a staff tutor from the UK Further Education Staff College, organised by the National Board for Technical Education, COHEADS, and the British Council. Some Polytechnics have established links with similar institutions overseas, with the purpose of improving staff training through exchange visits and short-term assignments to conduct training sessions.

The need for staff to undertake consultancy work to enrich experience is universally recognised and Dr Igharo, Chairman of COHEADS in his paper "Providing Adequate Staff For Nigerian Polytechnics and Colleges of Technology" sets out a case for establishing Consultancy Units within institutions, in order to formalise this important aspect of staff development.

Nigerian Polytechnics have played a major part in the formation of the Commonwealth Association of Polytechnics in Africa and will continue to make a substantial contribution to the on-going work programme of the Association in regional activities to improve staff development in member institutions throughout Commonwealth Africa.

Uganda

The origins of Uganda Technical College go back to 1928 when the Kampala Technical School opened. The school offered carpentry, building and tailoring courses to 60 students. The present College is a large technical education institution with a population of 800 full-time and 1200 part-time students.

Lecturers are recruited from three main sources (i) Universities, (ii) Industry, and (iii) Government department. Because of a scarcity of national staff with technical qualifications, some lecturers have been appointed without the requisite professional training. However, these entrants are placed on a two year probation period and are assessed by the Inspectorate before being confirmed in post.

In order to balance industrial experience with professional qualifications the College has a comprehensive staff development programme. Under this lecturers undertake industrial attachments on full salary. This form of staff development is augmented by consultancy work by staff and teaching loads are arranged to allow seven hours per week for external consultancy.

The number of expatriate teachers has dropped steadily over the last ten years. In 1969 the staff establishment included 51 expatriates and 17 nationals; by 1980 the respective numbers were 3 expatriates and 80 nationals.

In addition to general pedagogical training lecturers need to develop knowledge and skills in examination techniques and educational technology and the College staff development programme attempts to meet such needs.

Zambia

The main training resource for technical teachers in Zambia is the Technical and Vocational Teachers College, built in 1975 with assistance from the Swedish International Development Agency (SIDA). The College's main objective is to meet the growing demand for skilled and qualified teachers in commercial, industrial arts and technical subjects. The College offers a two year course divided into three main areas:

(a) Skill training. A fourteen month course devoted to intensive skill training.

(b) Industrial practice. Students are sent to selected companies for industrial experience to augment practical skills training and to provide an insight into the needs of industry. During this period the College lecturers visit students on their industrial attachments.

(c) Teacher training. Students undergo professional training appropriate to technical education.

The College also offers a one year course for teachers who will serve in the trade and technical institutions.

The College operates a system of continuous assessment consisting of assignments, tests and research work. At the end of the course the students final grade is determined by a combination of continuous assessment and final examination marks.

Certification is carried out in a number of stages:

(a) An interim Certificate, indicating final grades in each subject.

(b) An interim Teachers Diploma underwritten by the National Examinations Council of Zambia.

(c) A final Diploma after two years of successful teaching experience. The affiliation of the Technical and Vocational Teachers College to the University of Zambia is now in process and in due course to certification will become the responsibility of the University.

The College also offers several forms of training for industry and the educational services:

(a) Training for personnel employed in the parastatal and private secotors.

(b) Seminars for senior staff in the secondary education sector.

(c) Refresher courses for serving teachers in subjects such as equipment care and maintenance.

(d) A one-year up-grading course for serving secondary teachers.

Plans are being made to extend the range of courses offered by the College, for example, advanced courses for Principals, Inspectors and Supervisors. Subjects in these courses will include school administration, personnel management, organisation and supervision.

The Department of Technical Education and Vocational Training (DTEVT) is responsible for all technical and vocational education within the country. In addition to organising national courses for technical teachers, the Department also indentifies and monitors overseas courses. Key training needs are:

(a) Classroom and Laboratory work in technical subjects.

(b) Industrial attachments.

(c) Attachments to technical institutions for supervised teaching practice.

The Department recommends that an overseas course should lead to an award of a recognised diploma or certificate. Courses leading to university degrees are not always appropriate to the technical training needs of the Departments teaching force.

Plans are being made to use the facilities at the Polytechnics to up-grade the qualifications of technical teachers who have not attained a teaching diploma. It is considered that the need for post-diploma studies will continue to be met by overseases courses.

COMMONWEALTH CO-OPERATION IN EDUCATION

THE COMMONWEALTH SECRETARIAT

Introduction

This paper is provided as an information document covering areas and avenues in and through which the Commonwealth Secretariat operates and serves all member governments.

The Commonwealth Secretariat is the central agency of 46 Commonwealth Governments and consists of a number of departments each charged with responsibility for a special area of Commonwealth Co-operation. These departments, known as Divisions, include Education, Economic Affairs (including Industrial Affairs), Medical and Legal, International Affairs, Administration, Youth, Information, Science and Division of Applied Studies in Government. There are also three Divisions under the C.F.T.C. (Commonwealth Fund for Technical Co-operation) i.e. Education and Training and General Technical Assistance and Field Personnel and Service Divisions, as well as new divisions supported by C.F.T.C. funds such as Food Production and Rural Development, Export Marketing Division and the recently established Industrial Development Unit.

It will be seen from the foregoing that the Commonwealth Secretariat embraces a wide range of inter-governmental activities of which Education is one. Each Division is headed by a Director and a small team of professional staff, ranging from three or four to about twenty in the bigger Divisions. Cost-benefit considerations are basic to the Secretariat's operations in all fields.

The Education Division consists of the Director, an Assistant Director and seven other professional staff. These cover the whole range of educational co-operation mandated by Commonwealth Governments through the mechanism of the triennial Pan-Commonwealth Conference of Ministers of Education. At present our areas of activity include Technical and Vocational Education, Teacher Education, Sscience and Mathematics, Primary and Secondary Education, Educational Administration and Supervision, Higher Education, Book Development, Education Media and Materials, Distance Education, Curriculum and Examinations. We are also working in the relatively new area of Non-Formal Education, including Adult Education. We have recently begun a programme of education about the Commonwealth mandated by the 1977 meeting of Commonwealth Heads of Government in London. In addition to these pre-occupations, staff are also assigned to cover geographical regions of the Commonwealth, partly through a systematic programme of personal liaison visits periodically during the three year period between Ministerial Conferences. They are also required to be well informed on educational matters in their geographical areas.

Our strategies take the form of Workshops such as this, seminars, commissioned studies or research into specific education subjects and the publication of reports on such studies, workshops or seminars; training courses of varying duration, specialist conferences and the collection and dissemination of educational information among member governments. These activities in terms of both content and strategy, are reviewed every three years at the conference of Commonwealth Ministers of Education where priorities in areas of educational concern in member states are identified for Secretariat action. One important area of activity which the Education Division shares with the Association of Commonwealth Universities (A.C.U.) is the administrative co-ordination of the Commonwealth Scholarship and Fellowship Plan (C.S.F.P.). This programme is probably well known to participants here as a scholarship programme primarily designed for the University system, and generally for post-graduate - but also where essential, for under-graduate programmes.

International Co-operation in Technical Education

Over the last few years, Commonwealth Co-operation in the area of Technical Education has been largely geared towards surveys and studies commissioned in various aspects of this field. We have organised workshops in Technical Education in Hong Kong (1976), in Ibadan, Nigeria (1978) and convened meetings in connection with the establishment of CAPA in Nairobi (1977) and Freetown, Sierra Leone (1978). The present Workshop is the first specifically intended to deal with Teacher Training in Technical Education, in the Africa region.

In this field of technical education, we have co-operated with International Organisations from time to time, particularly with E.C.A. (Addis Ababa) and UNESCO. One activity of common interest in this connection, has been the joint planning for the establishment of an African Institute for the Training of Higher Technical Teacher Trainers under the auspices of the U.N.D.P./E.C.A. This Institute, the establishment of which is in its final planning stages, was expected to become operational in 1980. Through the establishment of CAPA, the Secretariat hopes to have initiated a mechanism for another avenue of co-operation not only within Commonwealth Africa, but ultimately with other countries of the region. It is hoped that in co-operation with UNESCO's Regional Office in East Africa and its Science Office in Nairobi, the link with non-Commonwealth Africa can be rapidly developed.

Other Strategies for Commonwealth Co-operation

Perhaps one of the most important aims of the Secretariat is the well-known Commonwealth Fund for Technical Co-operation (C.F.T.C.). Its Finance and Field Personnel Services Division has responsibility for the appointment, processing and servicing of Commonwealth Technical Assistance Experts in the field. The two other divisions of the C.F.T.C. which are of interest

and relevance to this Workshop are Education and Training and the General Technical Assistance Divisions.

The Education and Training Division responds to training requests from member countries by providing funds for national and regional training programmes submitted by governments and approved as valuable by C.F.T.C. The General Technical Assistance Division responds to requests from governments to provide general technical assistance in a wide range of fields. The fundamental criterion for C.F.T.C.'s financial support of programme requests from member states is that such projects shall be clearly development-oriented, i.e. contributing directly to development within the economies of member states. There is generally a national government body which is the contact agency for C.F.T.C. within each member state. It is usually a Ministry or Department of Economic Development or Planning, Finance or often the Prime Minister's or President's Office. Fuller information on the mechanics of application for project support can be obtained from the national office, or direct from the Secretariat in London.

The Commonwealth Foundation

Another body located in Marlborough House, called "the Commonwealth Foundation" is an inter-governmental body established to further the advancement of professional bodies and associations in the Commonwealth. The Foundation gives support to such activities as professional visits of university, legal, medical staff; to short-term attachments, specific research activities, etc. Applications for such assistance are addressed to the Director of the Commonwealth Foundation, Marlborough House, London.

The Commonwealth Scholarship and Fellowship Plan

The Commonwealth Scholarship and Fellowship Plan consists of a series of bilateral awards provided by member countries of the Commonwealth. Details of the scheme are available from the Association of Commonwealth Universities or the Commonwealth Secretariat's Education Division. The plan consists of some 40 odd national award schemes based in each country and simply co-ordinated at Marlborough House. In practice an award under the Plan is offered by a member country to nationals of all Commonwealth countries and applications are addressed directly to the awarding country which makes the selection from Commonwealth nominations and announces the final names of awarded fellows to the applicants' countries. Once again the agency through which applications are forwarded is located in each applicant's country, usually in the Ministry or Department of Education, or External Aid Bureau. The Administrative point of reference in London for the C.S.F.P. is the Secretary-General of the Association of Commonwealth Universities. Our main role at present is to provide member countries with an overall picture

of the operation of the scheme which, in 1977, totalled one thousand (1000) fellowships throughout the Commonwealth. The 7th Ministerial Conference indicated a target of one thousand five hundred (1500) awards by 1980 following a favourable review of the scheme so far. This target however, is still far from being achieved.

The Commonwealth Desk

One of our latest efforts to improve and develop communication between Commonwealth member states and the Commonwealth Secretariat is the establishment of a Commonwealth Desk within each national Ministry of Education - (generally located in the International or Foreign Aid or External Education Division or Section). It acts as an avenue for expediting action requested by the Secretariat or vice versa, particularly in the collection or dissemination of educational information. Such dissemination generally takes the form of circulating Secretariat publications, reports, surveys, and collecting educational information through questionnaires, enquiries or national experiments and innovative developments in education. The establishment of the Commonwealth Desk is only a recent development and we look forward to its growth and increasing effectiveness as the system takes firmer shape.

This paper has attempted to draw a very bare outline of Secretariat activities for the purpose of information of delegates. It is hoped that participants will be stimulated through it not only to seek fuller information on their return home, but also to assist in disseminating the information provided here, in pursuit of staff training and development activities arising out of this Workshop - whether of a short - or of a long duration, in-country or overseas. The chances of support for such programmes will of course be greater if they derive from National Development Plans already established by their Governments.

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