MEDICAL EDUCATION
AND
THE IMPORTANCE OF TEACHING
MEDICAL TEACHERS
ABOUT TEACHING

BY

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A dissertation towards an

MPhil Degree

University of Cape Town

Faculty of Medicine

March 1994

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University of Cape Town

MEDICAL EDUCATION
AND THE IMPORTANCE OF TEACHING MEDICAL TEACHERS ABOUT TEACHING

DECLARATION

ACKNOWLEDGEMENTS

ABBREVIATIONS

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THE LIGHTER SIDE OF AN MPhil 260

DECLARATION

I, ATHOL PARKES KENT, hereby declare that the work on which this thesis is based is my original work (except where acknowledgements indicate otherwise) and that neither the whole work nor any part of it has been, is being, or is to be submitted for another degree in this or any other University.

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ACKNOWLEDGEMENTS

I gratefully acknowledge the assistance of the following people :-

Ann Lloyd, without whose friendship, encouragement and support this thesis would have been impossible. This work is in many ways our dissertation in that the projects presented were organised and brought to fruition by both of us. It is the manifestation of countless hours of planning and replanning together that I sincerely appreciate. I especially thank her for her fortitude, faith and flying fingers.

Dr Phillip Parsons and Dr David Boonzaier whose supervision, guidance and expertise was a great souce of inspiration. The perspective, as well as detail, freely given was of great value and reassurance.

Dr James Austin for his unstinting and dedicated work in the preparation of the research and statistics on staff development.

Greg Pastoll, for his considerable input into the preparation of the questionnaires and interpretation of results.

Dr Rod Colborn, for the statistics and tables concerning the student population demographies of the University of Cape Town Medical School.

Steven and Jacqui, the next generation of learners, for their patience.

ABBREVIATIONS

ASME	ASSOCIATION FOR THE STUDY OF MEDICAL EDUCATION
CBE	COMMUNITY BASED EDUCATION
CAL	COMPUTER ASSISTED LEARNING
DET	DEPARTMENT OF EDUCATION AND TRAINING
GP	GENERAL PRACTITIONER
GSH	GROOTE SCHUUR HOSPITAL
ICA	IN-COURSE ASSESSMENT
MCQ	MULTIPLE CHOICE QUESTION
MEDASP	MEDICAL ACADEMIC SUPPORT PROGRAMME
OSCE	OBJECTIVE STRUCTURED CLINICAL EXAMINATION
PBL	PROBLEM-BASED LEARNING
SAAME	SOUTH AFRICAN ASSOCIATION FOR MEDICAL EDUCATION
SAARDHE	SOUTH AFRICAN ASSOCIATION FOR RESEARCH AND DEVELOPMENT IN HIGHER EDUCATION
SAMDC	SOUTH AFRICAN MEDICAL & DENTAL COUNCIL
SAPSE	SOUTH AFRICAN POST SECONDARY EDUCATION
SHAWCO	STUDENTS HEALTH AND WELFARE CENTRES ORGANISATION
SIFTR	SERVICE INCREMENT FOR TEACHING (AND RESEARCH)
TIFT	TEACH-IN-FOR-TEACHERS
TMU	TEACHING METHODS UNIT
UCT	UNIVERSITY OF CAPE TOWN
UMEC	UNDERGRADUATE MEDICAL EDUCATION COMMITTEE
WFME	WORLD FEDERATION FOR MEDICAL EDUCATION
WHO	WORLD HEALTH ORGANISATION

PREFACE

This is an overview of medical education today.

It deals with tertiary education matters pertinent to medical schools in South Africa, the **forces** that will inevitably cause medical education to change and the responses of other countries to similar circumstances.

These forces are medical, educational and political.

The medical forces bringing about changes are concerned with the explosion in knowledge in the fields of medical facts, technologies, therapies and informatics. It is an ongoing educational problem as to how the burgeoning sciences can be balanced with the present call for the return to the humanities. Medical schools are being required, through their teaching and learning methodologies, to encourage the qualification of empathetic graduates with generalist (holistic) skills and attitudes to best serve their patients.

Educational forces, in particular new curriculum strategies, will need to be explored to assist teachers and students to cope with the demands of communities and individuals for care with expertise. In many First World countries these demands have found expression in moves from Traditional to Innovative curricula.

Fundamentally, Traditional schools teach normal Anatomy and Physiology first, then move to the abnormal, before students reach the Clinical Years where these "basic sciences" are applied.

Innovative schools, on the other hand, employ Problem-Based Learning with Community-Orientation throughout their curricula, with early patient contact, horizontal and vertical integration of disciplines, group work and community interaction as crucial aspects of their students' learning. Supporters of the Innovative philosophy see as progressive the revising of Flexnerian notions of basic science building blocks, the debalkanising of instruction subject by subject and the motivational impetus achieved when learning takes place in context.

Political factors can impinge on staff teaching and student learning by Governmental demands through statutory councils or through the power exerted by the universities. Macro politics dictate financial or other resources that are allocated and may in future directly influence what sort of doctor the various medical schools are expected to graduate. The politics of staffing the teaching institutions, the development of teachers, and the demographics of the student population raise important questions of direction and commitment, and may lead to new realignments.

The recognition of the importance of teaching at a **professional level** is a crucial factor in educating students more appropriately. Teachers versed in the medical pedagogic process will be pivotal in producing a new breed of doctors.

This new breed will not be expected to "know everything" but have a core knowledge carefully ascertained by each medical faculty and the ability to find information that is further required. Students will not be expected to acquire all the facts to sustain them through the rest of their professional lives, but to have enquiring minds and the motivation to continue their education, to satisfy their curiosity and provide improved patient care.

Their skills in mastery of the behavioural sciences will be more pertinent than ever as preventative medicine becomes as important as curative. They will be expected to formulate ethical attitudes and provide leadership in community and individual dilemmas.

These are challenges that will need to be faced critically by our medical teachers who are too often experts in content in ever-narrower sub-specialities. For these challenges to be met, teaching cannot be taken for granted, but must be viewed more seriously by the schools and changes made where appropriate.

The University of Cape Town (UCT) has a considerable reputation in the quality of its medical graduates. However, for its medical faculty to remain in the forefront of medical education, it needs to reconsider the knowledge required, the skills and attitudes embodied in its graduates but, as importantly, it must take the lead in undergraduate training. The need for renewing strategies and the action required are the themes of this dissertation.

CHAPTER ONE

WHY NOT MAINTAIN THE STATUS QUO?

Introduction

Natural Resistance

Is There Any Necessity for Change?

The Product

Proof of Benefit

Research in Medical Education

Conclusions

References

INTRODUCTION

> "Successful innovation and change in the way medical students are prepared are notoriously difficult."
>
> \- Craig & Bandaranayake[1]

This review of medical education will present considerable evidence for change and, hopefully, compelling reasons why this change should be implemented. But, before embarking on an examination of the present situation, it would be reasonable to recount the arguments for maintaining the status quo. The contents of this chapter will, therefore, contain sometimes emotive, sometimes unsubstantiatable and sometimes spurious - but occasionally well-founded - reasons for maintaining medical education as it exists today.

These arguments will not be countered immediately, except where it is felt that new information is available to contribute to the debate.

NATURAL RESISTANCE

There is a widely held view that medical practitioners are, at least in part, a conservative group having a natural resistance to change. Patients view their doctors as careful and circumspect professionals who treat new ideas with a healthy scepticism until their worth is evident. This, however, should not categorise the profession as "a cold bed of Luddites"[2].

Basic research and implementation of change in medical education has to overcome several major difficulties. One such problem is that the evidence for improvement (or

detriment) resulting from any change may only become apparent over a considerable period of time. To convince teaching doctors to change a given system, proof of an alternative method's advantage has to be forthcoming, strategies for implementation must be explained, anxiety about change allayed, and good motivation presented. Academics are acutely aware of the suspicion with which any alteration concerning the curriculum, lecture programmes, examination formats and the allocation of teaching duties is viewed. The fear exists that such changes may bring a further workload, an increase in teaching time, and there is always the possibility of the process back-firing.

"If it ain't broke, don't fix it" summarises many people's point of view which is supported by the current mind set in South Africa. With so much change occurring in the socio / economic / political arena, would it not be best to leave medical education well alone because it is apparently in good health?

There are, however, suggestions from people such as Coles[3] that medical schools with conventional or even horizontal integration of system courses are not as effective pedagogic strategies as the vertically integrated curricula of the Innovative medical schools. The Robert Wood Johnson Foundation Committee Report[4] states categorically that the shifts in the biological sciences have implications for medical education that are revolutionary and "they mean that even well-intentioned and well-guided tinkering will be insufficient".

If fine-tuning of the curriculum is viewed with disdain and as inadequate, then the Americans suggest that the only viable option is complete reorganisation of Traditional medical faculties to Problem-Based Learning Innovative schools, with a concomitant commitment to Community-Oriented approaches.

Certain internationally renowned medical schools have led the educational world in their adoption of Problem-Based Learning and Community-Oriented strategies. The

best known of these are McMaster in Canada, Maastricht in The Netherlands, Beer-Sheva in Israel and Newcastle in Australia. Such is the groundswell of enthusiasm for following these examples that a Network has been established to promote the concept. Many developing countries are adapting their strategies and brand new schools in Malaysia and elsewhere in the Far East are moving swiftly in this direction.

The difficulty is that of persuasion and commitment - not to mention resource allocation. Major investment in terms of time, planning and funds, needs to be made. South Africans are not noted for their *avant-garde* thinking and their educational methods have moved little in recent years. The major efforts required in achieving fundamental change at the University of New Mexico are documented by Kaufman[5] and Levine[6].

Towle[7] in her classic work "Critical Thinking: The future of undergraduate medical education" has a healthy respect for the conservative British temperament and concludes that in her country "change is likely to be evolutionary rather than revolutionary". Despite this, more progressive schools such as Dundee in Scotland have plans well in hand to move to Innovative strategies.

The Americans, much renowned for their "state of the art" image, are not that optimistic about changes being implemented unless specific conditions, the funding and the will exist. Despite the acknowledgement of the necessity for change, Enarson & Burg[8] conclude that their research "underscores the need for the medical education community to evaluate critically the effectiveness of alternative educational, financing and organizational strategies and develop a comprehensive, rational plan to improve the quality of medical education in the United States".

Given South Africa's present collective characteristics, change in this country is liable to be slow.

IS THERE ANY NECESSITY FOR CHANGE?

The argument for maintaining the status quo "because there is no point in changing" flows from two different sources.

The first is that the graduates produced by the eight medical schools in the country are of enviable quality and certainly good enough for South Africa's First World / Third World status. The examination results at all the medical schools remain first class, with very creditable pass rates, especially in the clinical years, and with controls through the use of external examiners ensuring ongoing high standards. This argument will be developed in subsequent chapters but, at least superficially, low failure rates count as evidence of satisfactory standards.

The success of South African medical academics in terms of articles published, books written, conference presentations and collaboration on an international level is positive proof that the upper echelons of the medical fraternity are high-achieving life-long learners and contributors, which reflects well on their excellent undergraduate training. The demand for, and acceptability of, South African graduates in other countries on a permanent or temporary basis, again supports the contention of high standards of teaching and, although detrimental to the health care cause, underscores the success of their undergraduate medical education. If the product is good, why change the method of producing it?

The second thrust of the argument is the polemic of futility. The view is advanced that there is little point in tinkering with a system that is in place, because any change is likely to be overtaken by extrinsic events. There is an attitude rife in South Africa that any change in any sector of public life is much like "rearranging the deck chairs on the Titanic".

The anticipation of new Governmental directives and instructions sometimes inhibits initiatives. People resist change, even improvements, in the face of political uncertainty. Newspaper reports of the recommendations of the Steinmetz Committee[9] which proposes the reduction of academic hospitals from seven to four, add fuel to these notions. Paralysis by uncertainty is a potent cause of maintaining the status quo.

THE PRODUCT

Although most universities in South Africa have a mission statement which defines the desired attributes of their MBChB graduates, there is concern that political changes in South Africa will result in a different product being required.

There is no doubt that the perception of South Africa as "part of Africa" or a "Third World country with pockets of First Worldliness" is gaining in popularity. With the acceptance of major attitudinal changes, there is agreement that many previously firmly held concepts will have to change.

Perhaps the medical schools will be forced to radically review the product they graduate. If this is the case, there is little point in changing, and certainly no immediacy. One should wait until research has been completed as to what the country's "real needs" are in terms of total health care, and then relook at the medical education that might be more appropriate to serve the new requirements. The arguments for Community-Based Education or, at least, more community involvement, less "First World type doctors", a two-tier system of medical professionals, the incorporation of traditional healers in health care, and the demand for more primary health care services, all add to the unpredictability of the situation and can be construed as arguments for putting any change in medical education "on hold".

PROOF OF BENEFIT

The major changes occurring in medical education are, for the most part, First World derived. Even at established venues, with widely differing methodologies being compared (problem-solving and formal lectures), Leinster & Rogers[10] from Cardiff were unable to demonstrate a measurable difference between the two methods. They pose the question "Is new always better?"

Surely it is the responsibility of privileged countries to develop and perfect these innovative processes rather than South Africa, with its limited academic resources? It should be left to First World medical faculties to produce the evidence that Innovative curricula are superior to the Traditional ones, that Community-Based Education has long-term community benefit, that Problem-Based Learning (PBL) does have a substantial cognitive advantage, that Computer Assisted Learning (CAL) can actually release staff to fulfil other functions, and present clear recommendations for the way ahead.

There is a belief that research and experiment in undergraduate medical education should be left to those who have the luxury of time, resources and finance to pursue these academic ideals. It appears, however, that even First World countries have problems. It has been reported by Grant[11] from the United Kingdom, on reviewing sources of funding, that "no funding was reported as coming from the Government Research Councils, none of which seems to have a remit which includes medical education research".

The argument could be put forward that Third World doctors must be trained in pragmatic medicine and not get seduced into pursuing intellectual frippery.

RESEARCH IN MEDICAL EDUCATION

Research in medical education is complex and certainly a domain in which there is considerable debate.

The point of view is taken that there is not a great deal of need for research especially if the product is satisfactory. Even if better teaching through more educational research does produce better doctors (which is by no means apparent), are doctors of such high quality necessary in this country at the present time? Are there more pressing priorities?

The case against review and research stems not only from the questioning of its motivation, but from the nature of the task involved. There are at least five clear reasons why scientific enquiry in the field is daunting.

Firstly, there is the time factor to be considered. The time frame required to prove advantages or disadvantages in medical education is extremely long. Any change in the process, the product or any of the numerous variables involved will take a number of years to become evident. Correction or intervention would take an equally long time to be assessed.

For example, if Anatomy were reduced to a three-month course, concentrating on Gross Anatomy only and requiring a 90% pass mark, or if Histology were dropped from the curriculum and replaced by a Computer Assisted Learning course on cellular structure lasting one month, how long would it take for the outcomes of these changes to become apparent, and how could these be assessed? Such blatant examples could be measured only years down the line, and the remedial action taken for the experiment to be reversed would require the same duration. This "chronological drag" makes the process unwieldy and introduces variables detracting from statistical reliability.

Other less radical changes would take considerably longer to have a measurable effect as they filter through the system. If courses in communication skills, ethics, rural medicine, financial management, environmental medicine or any other subject were introduced into the curriculum, how long would it take before the effects would be measurable? If such a course was then withdrawn to demonstrate the difference it had made, how long would this "control" measurement need to be?

Secondly, there is the question of the application of the scientific method to medical education research. Is it possible to apply the rigorous nature of blinded, or even controlled, trials to medical education? Variables of students, teachers, the passage of time plus the lack of clear cut assessment criteria or instruments of measurement all bring into question the validity of research in this area.

A moment's reflection on the definition of a good doctor, the hidden curriculum, attitudes or empowerment are sufficient to dissuade all but the most ambitious to tackle their measurement. Testimony of the bootlessness of such attempts is dealt with in an editorial entitled "The editor regrets and the Hawthorne Effect" by Lennox[12], who refers to the original experimentation as follows:

> "There was a famous demonstration at the Relay Assembly Test Room of the Hawthorne Plant of the Western Electric Company. Changes were made in the conditions of work, such as introducing rest periods at one time and shorter working hours at another. It became clear it was not the experimental changes that made the girls work more effectively, but the greater interest focussed on them which increased their desire to do well. (Roethlisberger & Dickson)[13]. All educational experiment is liable to the Hawthorne Effect".

He also cites the classical paper by Stretton, Hall & Owen[14] reporting on the Newcastle ECG Department experiment. In this study, the investigators introduced a

new teaching method, but used controls. The trial group did strikingly better than students in previous years, but so did the controls, though not quite as much. They concluded that merely the sense of something happening, that teachers are taking their teaching more seriously than usual, is enough to stir students to greater effort.

The degree of Hawthorne Effect is a powerful argument, both for and against research in this area. Those suggesting that **any** change is a means of improving matters (provided that goals are set and observations made) are invoking the placebo effect. The corollary is that even retrogressive techniques may initially register as improvements because of the attention given to their implementation. This creates the need for caution in the interpretation of any experiment or research concerning medical educational efficiency or methodology.

Thirdly, the more profound the change in medical education, theoretically the more readily measurable it becomes. If a faculty were to transform its educational strategy from a Traditional to an Innovative one (Problem-Based with Community-Orientation), this would be reasonably easy to monitor. The problem, as Craig[1] concedes, is that "radical surgery" is less easy to implement.

Many clear recommendations from the General Medical Council in the United Kingdom in 1980[15] were still not incorporated or acted upon in their medical schools ten years later. This reluctance to accept and implement change obviously prevents its benefits and results being assessed - a vital aspect of change management.

Perhaps the current controversies in secondary and post-secondary education should be resolved before considering research in medical undergraduate education. The current state of flux in the area, especially concerning quality assurance, has been summarised by Lewis[16], as follows :

> "In such a fast changing world as higher education, to write a chapter on the current role of anything risks producing something more obsolete than the Blue Streak, or even Stephenson's Rocket."

This implies that tertiary educational change in some minds is too rapid to quantify whereas, in medical education, it is too slow to document.

Fourthly, there is the problem of observer reliability. The ultimate object of medical education is the advancement of students' knowledge, skills and attitudes. Therefore, to reliably gauge student progress or ultimate benefit, the students' response has to be quantified.

For this to be reliable and, more importantly, valid, it must be presumed that the student is a "stable" reference point at any given time. Regrettably, this is by no means the case. Students adopt different learning strategies at different times, to satisfy varying tasks. The rating of a teaching technique or style may only take into account short-term benefits to fulfil short-term goals. Dualistic teaching may be rated highly if it fulfils the function of supplying pre-digested answers that are thought to be of use for examination purposes. Student happiness indices are not necessarily true indicators of genuine teaching excellence.

Finally, any measurement in medical education must take into account the end product that the medical school wishes to produce. It is inordinately difficult to measure with any degree of reliability many of the qualities, skills and attitudes that have really been instilled into the fledgling doctor[17]. The aim of producing a life-long learner with empathy, communication skills and an enquiring mind, who is committed to the upliftment of the individual and the community, is a high minded ideal. Attempting to measure whether such an ideal has been achieved, or how it was achieved, is futile.

CONCLUSIONS

Many of the arguments presented are familiar to academics wishing to bring intellectual rigour and the genuine enquiry of research to medical education. Some are easy to discredit and the hubris involved not worth defending. Nevertheless, they need to be stated to delineate the comfort zone into which sceptics retreat when challenged to change.

It is the **teachers** of medical students who need to be educated and become aware of the pitfalls, to be critical of the science and, therefore, able to refute the scepticism. If content is all that is being concentrated upon in the complex process of becoming a doctor, then the task is simple. Self-evidently it is not so, and the more teachers are conversant with the spectrum of the hidden curriculum, the difficulties in the research process, and acknowledge "pedagogy versus politics", the better teachers of learning they become.

Radical change from Traditional to Innovative medical education strategies has stimulated a plethora of articles and books (see, for example [5] and [18-23]) about the process. Walton & Matthews[24] cite 95 references supporting a single paper on "Essentials of Problem-Based Learning". These quantum leaps of change require motivation, research, co-operation, time, energy, effort, finance, monitoring and strong will. Despite all these ingredients, the best efforts to change to modern techniques can fail[6].

It is not known whether the will exists in South Africa to take on such "brave New World" challenges. The pursuit of review, change and research into medical education is seen by many as contrived, inappropriate and indulgent.

What is required is the development of expertise in teaching. Units with staff and resources to support, instruct and empower teachers are needed if the impediments to progress presented here are to be overcome.

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CHAPTER TWO

ACADEMIC TEACHING AND CHANGE

Introduction

Doctors and Pedagogy

The Knowledge Required

Teaching Venues

Conclusions

References

Appendices

INTRODUCTION

There is a great deal that is taken for granted in medical education. Existing assumptions about the teachers, the course content and the venues where students learn need to be challenged in the light of educational developments. Those who are responsible for the teaching in the pre-clinical sciences and in academic hospitals are possibly the most "taken for granted" in the whole process, as well as being the most pivotal. Questions will be raised about three fundamental aspects of medical education by looking at the following:

DOCTORS AND PEDAGOGY

- Do doctors understand the teaching / learning process?
- What are the students' expectations?
- How do students learn?
- Who are the teachers?
- Are they trained to teach?
- Are there alternatives?

THE KNOWLEDGE REQUIRED

- Are the aims of the curriculum defined?
- Is core knowledge defined?
- Is the curriculum strategy appropriate?

TEACHING VENUES

- Are tertiary referral hospitals the best place for undergraduates to learn?
- Is the spectrum of patients encountered sufficiently wide?
- Do students have sufficient community contact?

DOCTORS AND PEDAGOGY

The Process

Pedagogy : The principles, practice or profession of teaching

The nature of the adult learning / teaching process is complicated. It encompasses concepts about the continuum from primary and secondary to tertiary education, and anticipates educators and students moving from the dualistic "right / wrong" framework to the realms of the relativistic which is accepting of ambiguity and spheres of ignorance. It includes a progression from the primary building blocks of factual knowledge, including the "what, where and when", to a questioning and understanding of "how and why".

In medical education, the pre-clinical basic sciences have, since Flexner[1], been held to be crucial pre-requisites for clinical teaching. The clinical aspect of the medical course requires knowledge, skills and attitudes that must prepare the new graduate for practice and life-long learning. This evolutionary process of maturation has been traced by Perry[2], and needs to be understood by students' teachers.

Students' attitudes and motivation change significantly through their training years. These changes have been documented in terms of their ethical development and moral reasoning[3], their feelings about providing care for the under-served[4], HIV- infected patients[5], and other topics. Their transition to relativistic learners is enhanced by instruction in the behavioural sciences and early patient contact. Equally, their anxiety and misgivings about the physical examination of patients and concern about their inadequacy to deal with patients' problems early in their careers deserve sympathetic recognition.

The learning of content-based subjects of formidable volume can be stressful and demotivating to students in the pre-clinical years. The educators who understand these dynamics will be the ones who favour progress towards vertical integration, small group teaching, the movement towards Problem-Based Learning and the early introduction of the behavioural sciences.

The accumulation of interpersonal skills as well as medical skills, together with vast quantities of information, plus the formulation of attitudes, is a challenging task and, as Peck[6] suggests, is not an easy one.

Teachers can only be true educators if they possess sufficient knowledge concerning both the teachers' and the learners' roles in the process. It is only by a clear understanding of how students learn that teachers will have the confidence to empower them, reduce content and make motivation their goal by means of stressing relevance and using appropriate assessment formats.

Is it possible to answer the question as to whether doctors understand pedagogy, or not? Finucane[7] has shown that at least a group of United Kingdom doctors do not keep up to date concerning medical education, which is backed up by Australian statements[8] and local surveys indicating a lack of training in the field. The inference is that they do not understand pedagogy. Facts are required about South African academics who educate medical students. Enthusiasts in every department in each medical school must find out how their colleagues teach, and themselves be in a position to instruct the teachers.

Student Expectations

For teachers to aspire to professionalism in teaching, they must have a basic understanding of their students' motivation and expectations - not just the facts they require.

Medical students start their studies with sets of intrinsic and extrinsic goals. Intrinsic goals include a thirst for knowledge and enquiry, a desire for personal growth or fulfillment in an academic or vocational sense, as alluded to by Entwistle & Meyer[9]. Extrinsic goals may be achieving standing and recognition in society, embarking on a well-paid or prestigious career, and satisfying family expectations.

Some look for a university education with the development of intellectual ambition, the formulation of ethical and philosophical standpoints and attitudes, while others envisage a more technically oriented skills and knowledge course. Without an idea of what **motivates** students in terms of their satisfaction of these expectations, their motivation cannot be enhanced and, therefore, it would be surprising if their enthusiasm, drive and achievements were satisfied. If anything more than a superficial education with surface learning approaches is to be provided, then medical educators need to be persuaded to answer the questions pertaining to expectations and aspirations and, as Wolf[10] puts it, these need to be reconciled with appropriate teaching methods.

Teachers need to know what motivates students and what disenchants them. Disempowerment, disillusionment and demotivation, as well as abuse, are common in Traditional medical schools[11].

Apart from aiming to satisfy students' aspirations, teachers must be aware of what **demotivates** them in terms of their psychological development, and there is evidence to suggest that their early experience in some American schools impacts negatively upon caring, compassion and dedication later[12]. This can lead to pessimism and cynicism as early as the first year of study. Lack of sensitivity or even abuse can occur in the form of disparaging remarks with humiliation and belittlement being common. Sexual and racial harassment and unfair mark allocation are all uncomfortably frequent and occurred at some time in their student days in the majority of those surveyed, according

to Wolf[13]. These abuses come from classmates, patients, nurses, their teachers, as well as from doctors. Teachers need to know the negative effects of such treatment, avoid it themselves and be able to advise students how to deal with these problems when they arise. Smith[14] describes various mechanisms for students to deal with derogatory behaviour, and this information would be useful to students who feel vulnerable. Increasing awareness of abuse and its links to stress experienced by students, can sometimes explain academic under-performance.

Teachers must know about the power of motivation and its educational importance. **They** must be empowered to create a positive learning environment. This is what is commonly lacking in Traditional medical schools. Early patient contact, pertinent examples and problem solving are required. Every course, especially those in the clinical years, must stimulate and not suppress enthusiasm. Questioning and exploring, not lectures and reading are the ways to fulfil expectations.

How Students Learn and What Affects This Process

The processes of transition from secondary scholar to medical student and subsequent development from student to doctor are of considerable interest to medical teachers[15].

Secondary school education in South Africa has been criticised for not proceeding beyond a dualistic approach to learning. This is a learning method which promotes certainty with "right or wrong" answers and little scope for interpretation. Scholars are encouraged to recall and reproduce facts rather than discuss, problem-solve and explore. Matriculation subjects undertaken by aspirant medical students tend to be dominantly "left brain" in nature and this dominance is underpinned by the types of examinations set, according to Zdenek in her book "The Right Brain Experience"[16].

The implications of being stuck in the dualistic mode are the potential failure to confront challenges, develop arguments or accept ambiguity which are prerequisites of clinical disciplines at medical schools. Predictions of performance in the medical degree course, based on school-leaving results have not produced a consistent correlation. Congruence between Biology results[17] and achievement in the humanities in general and English in particular[18], have shown some predictive value in medical school results, demonstrating it is claimed, an association between non-scientific subjects and clinical medicine.

The relativistic, as opposed to the dualistic, approach to learning which requires judgement, information transformation and personal understanding is a fundamentally different education mind-set and demands a different attitude. It should be noted that the dualistic approach is considered appropriate in primary and early secondary education, and is highly valued and respected in many cultures.

Understanding of student learning and how the task is engaged has been explored by Meyer[19] and, because of the importance of this theory, a resume of the history, as traced by him, is summarised as follows:

> Marton & Saljo[20-21] introduced the terms "deep" and "surface" to describe qualitative differences in the manner in which students described their own learning (see Appendix I).
>
> Biggs[22] used the terms "deep" and "surface" and then added a third approach - that of "achieving" to describe motivational and strategic approaches.
>
> Entwistle & Ramsden[23] described student learning orientations and the three terms used were "meaning", "reproducing" and "strategic". They

also used the terms "intrinsic", "extrinsic" and "achievement" which described motivational influences.

Meyer[19] emphasises that the perceived contextual stimuli in which the student operates are crucial factors, and must be taken into account in developing these ideas.

LEARNING APPROACHES

1. Deep - seeking understanding
2. Surface - completing task requirements in a minimal way
3. Strategic - getting the highest possible marks in whatever way is necessary

- Entwistle & Ramsden[23]

It is important for medical teachers to be aware of these learning approaches and what influences them (see Appendix II) so that they understand how their students seek to acquire the knowledge, skills and attitudes they wish to convey. Examinations must be congruent with their aims and, as Newble and Jaeger[24] have described, assert a powerful influence in determining the approaches that students adopt.

Eizenberg[25-26] and Ramsden[27] have traced the relationships of study and recall against approaches to learning at various stages of medical students' careers. In the clinical years, multifactorial tasks, such as problem-solving, patient interaction and diagnostic ability require different understanding of students' approaches and strategies.

The students' intellectual and ethical development, as recorded by Perry[28], is important in the establishing of trust and rapport within clinical tutorial groups. The quality of thinking, the adaptation to circumstances and the maturation of students are all a part of

the professionalism process that require the reflective teacher's encouragement over and above factual accumulation.

INTELLECTUAL AND ETHICAL DEVELOPMENT

1. Dualistic position expecting "right" answers to be presented by the teacher and reproduced by the student.
2. Diversity of opinion perceived, but seen as part of an exercise to encourage students to find the "right" answers.
3. Diversity and uncertainty recognised, but only as temporary. Grades seen as relating to "good expression".
4. Diversity interpreted as indicating "everyone has a right to his/her own opinion". Relativistic reasoning recognised as "what they want", but without understanding why.
5. Recognition that all knowledge and values are relativistic; begins to understand the interpretation of evidence.
6. Accepts the need to make some personal commitment, but based on a careful examination of the available evidence.

\- Adapted from Perry by Entwistle[29]

There is hopefully a progression within students from surface and strategic approaches to a deep approach to learning as they move through the medical course and beyond. This shift from recall and regurgitation to meaningful and integrative thought processes is not necessarily smooth, nor should it be assumed. Teachers should provide the lead, as well as the intellectual freedom, within which this transition can take place. It is yet to be established whether educationally disadvantaged students can cope with this "intellectual permissiveness" and enquiry. Teachers need to learn about learning approaches to enhance their teaching skills.

However, students themselves will be undergoing considerable adaptations to university life, not all of which are intellectual. The pre-clinical years of the MBChB course have been criticised as not having sufficient "vertical integration" to allow students to see the relevance of what they are learning. If a surface approach is encouraged during these years, together with curriculum overload, it is not difficult to see that disillusionment, demotivation and low achievement may occur.

Teachers need to be aware of these dangers and plan their syllabi, course content, teaching methods and examinations in such a way as to foster understanding on the part of their students.

At UCT there is the paternalistic attitude among some teachers that their students are not "mature enough" to deal with PBL. Such beliefs not only require challenging but should be put to the test to establish or refute their validity. It may well be that the more students are treated as incapable of taking responsibility for their own learning, the more they expect to be taught. This sets up the concept of "spoon feeding" which then has to be reversed in the clinical years. There has never been any experimental evidence to indicate that, given responsibility, medical students in general abuse it.

Entwistle describes the following domains as important[29]:

1. Personal goals and motivation
2. Confidence or anxiety
3. Study and learning techniques
4. Study skills, training
5. Work load and curriculum overload
6. Assessment procedures
7. Feedback on assignments, appropriate assessment procedures

He describes a medical curriculum to support the deep approach which is included as Appendix III.

The social, psychological and intellectual changes facing university students in their early years need recognition. They do require empowerment to explore new study skills that will equip them for the less structured demands of the collegial situation. These skills include the taking of lecture notes, the planning of study time, the organisation of new material, the use of learning resources such as the library, the optimisation of instructor interaction time, as well as coping with peer pressures. Certain abilities should not be taken for granted, such as the command of language (both verbal and written), knowledge about concentration spans, work patterns, mind maps[30], domain organisation[31], mnemonics, memory enhancement and stress management.

Too often, medical teachers see the conveyance of their subject's content as their only role. Teachers need to be taught about the adult learning process and, once they have incorporated the principles in their own understanding, they will benefit from the knowledge and so will their students.

Feelings of being overwhelmed by the enormity of the task facing the students in the early years is not uncommon. Research by Parsons & Meyer[32], in particular, into the identification of "at risk" students and academic support programmes for disadvantaged or underachieving students have been helpful[33-34]. Unfolding analyses[35] of successful and failing students expand our knowledge as to which students are struggling and how technique can be changed, both from the learning and teaching points of view[36].

New knowledge about learning allows greater insights to take place, but places the onus squarely on the teachers to understand this process and use it constructively. It may be,

as Kirsch has stated, that "They Know Enough Who Know How To Learn"[37] - but it will be up to the teachers to encourage this educational paradigm.

It is known how students learn. Teachers with professionalism will foster the correct processes to move their students' learning to the optimal strategies. Teachers need to be taught how students learn, as well as how to teach appropriately.

Academics As Teachers

There are two broad categories of teachers of medical students in a Traditional medical school such as UCT. The first group are the pre-clinical teachers who are responsible for the students' learning of the basic sciences, and the second group are the clinicians teaching mainly in the hospitals.

There are various factors which maintain this somewhat artificial dichotomy. Firstly, student instruction takes place at different venues. First year subjects are taught on the general university campus, with second and third year subjects taught at medical school, whereas the final three years are predominantly teaching-hospital based which is in close proximity to the medical school.

Secondly, staff are appointed and employed by different mechanisms and employers and, thirdly, clinicians have a large service load which is a major commitment in terms of time and energy.

Despite these differences, there are many common difficulties facing the teachers of undergraduate students.

Appointments and Obligations

Are those charged with the education of medical students appointed largely on their educational talents and abilities, and are their teaching obligations spelled out?

Abrahamson[38] suggests that the reasons for appointments of medical school staff have changed radically over the years, with the educational aspects of applicant's strengths or weaknesses being largely ignored. He also suggests that the actual time devoted to teaching by the professoriat and senior faculty members is minimal.

Although it has been mooted that academic appointments be made predicative upon consistently high and effective teaching ratings, as proposed by Greganti[39], this would be too ambitious for even the most ardent teaching enthusiasts. What is needed is the elevation of the **status** of undergraduate teachers, and a clear commitment to teaching in their job descriptions.

There may be an arrangement between each teaching hospital and its associated university, and at UCT there appears to be a "commitment to teaching" without details being spelt out. It has been difficult to establish the expected minimum requirements in the local "Joint Agreement" contracts between the University of Cape Town and the Groote Schuur Hospital. South African Post Secondary Education (SAPSE) forms are completed annually and include a record of teaching obligations. These are not binding on future contractual arrangements and other countries, such as the United Kingdom, have only recently (1990) included undergraduate teaching requirements in their consultant contracts[40].

Towle[41], in the report from the King's Fund Centre, entitled "Critical Thinking: The Future of Undergraduate Medical Education", calls for "teaching to be recognised to be an important professional activity (comparable in status to clinical service, research and management)", but this professional status can only be achieved if professional training in the teaching sphere is available, and required to be undertaken.

It is unrealistic and impractical to envisage teaching expertise to be a major factor in appointments. The acquisition of such skills is not readily available and the rewards for acquiring the skills negligible. What is far more logical is the formal training of appointees by dedicated experts or professionals within that discipline or the medical school itself. This should include an ongoing process of audit and should be the responsibility of the university. No such mechanisms exist at the University of Cape Town.

The teachers of medical students are academics. They need status, recognition and reward for this important task.

Training to Teach

> "Medical students are, to a large extent, taught by people who have undertaken little or no formal study in the field of education"
>
> \- Newble & Cannon[8]

It is taken for granted that academics know the principles of student learning. Surveys reported later in this dissertation suggest that academics, at least in their own estimation, are not satisfied with their knowledge about the principles and practice of student learning.

Medical school and teaching hospital appointees at UCT, in general, enjoy teaching and wish to improve their skills and effectiveness in this sphere. There is no lack of enthusiasm to participate in activities giving them practical assistance to enhance their educational ability. Where these opportunities are conveniently provided, the feedback is positive and participants have indicated that all teachers should attend workshops or courses to raise teaching standards. Price in Brisbane is working on a modular course

for teachers to study in-house. This will involve credits and lead to a diploma and can be taken further to a degree course. However, where instruction is only available off the medical campus (through Teaching Methods Units, Staff Development Units, Professional Communication Centres, etc.), teachers seem reluctant to make use of such facilities voluntarily.

The British experience is similar, with Finucane[7] publishing a survey in which he reports that less than one-fifth of teachers had attended a course on medical education in the previous five years, less than 10% of teachers were members of a medical education society, and concluded - "It is hoped that these findings will stimulate debate on how medical school teachers are selected, how they can be helped to improve their teaching performance, and how their enthusiasm for teaching can be fostered".

Some medical schools have departments or units of medical education, while others have committees or people within the faculty who promote these interests. In South Africa there is a wide spectrum of opinion as to the benefit and success of medical faculty education departments. Perhaps this reflects varying attitudes to the status of teaching.

Can it be assumed that where no Medical Education Units exist, the quality of medical education is uniformly high? With little background training in education and usually infrequent feedback from students or quality assurance from peers or educationalists, individuals are left in the dark about their achievements. Assessments which recognise excellence can benefit staff and students alike. Price & Mitchell[42] suggest this as a positive contribution to morale and standards and propose several formulae for providing incentives and status for medical educationalists. Gastel[43] and, more recently, Biggs & Price[44] enumerated methods of encouraging teachers, raising teaching status, improving clinical instruction infrastructure, emphasising assessment and have called for the development of teaching skills. Good teachers will find it easier

and more satisfying to keep up to date with new facts, new knowledge about learning, new teaching methods and techniques, and maintain their enthusiasm if there are tangible rewards for teaching excellence.

By and large, medical students' teachers are not trained to teach. This does not mean they are untrainable, resistant to being taught, or do not want to improve. All indications are that the opposite is true.

Mechanisms for this development of their existing skills should be made available, on site and by user-friendly personnel.

Teachers must be taught to facilitate, not dominate. This is what Harden[45] suggests as the first of the considerations in his classic SPICES paper.

Alternative Teachers

> "Would you send your child to a school where the teachers were untrained at recruitment, where no instruction was given them, and where promotion was independent of teaching excellence? Yes, you would, provided it was a Medical School."
> \- Purdie[46]

Are academics the best people to teach undergraduates? Although academics may lack specific training in teaching, they are the primary role models for those undertaking the medical degree.

Some abilities that these people need to possess are:

- Trained, enquiring and questioning minds
- Structured, searching and researching approaches
- Arguing, debating and listening skills
- Acceptance of ambiguity
- The ability to think laterally and mastery of problem-solving
- Formulated ethical attitudes
- Clinical and intellectual skills

If these attributes are, indeed, part of the make-up of teaching hospital doctors, then they will be admirable role models and potentially excellent teachers. The problem is that the question is seldom, if ever, asked as to whether these skills exist and, if they do, are they recognised, enhanced and rewarded in the teaching context? There may be a question about communication skills and focus, but this should not detract from the fact that academic doctors bring major positive characteristics to the teaching situation. The qualities listed above are important traits to impart to aspirant doctors.

Certainly the clinical skills necessary for competency need to be acquired, together with attitudes and ethics from practising clinicians. The qualities of responsibility, team interaction, leadership, patient / doctor relationships and ethical judgements must be observed in action and the results assessed by learners. Chavigny's[47] (Director of Nursing and Related Health Professions of the American Medical Association) viewpoint is clear on the issue: "Medical education is accomplished most effectively through the clinical education of physicians by physicians".

There have been suggestions by students in a recent UCT survey[48] that there are areas where academics are at risk of falling prey to their own intellectual pursuits. Although by no means widespread, the Ivory Tower Syndrome is perceived to exist, which indicates that academics are not sufficiently "community" or "holistically" oriented.

Sub-specialisation within disciplines, in both the pre-clinical and clinical years, tends to produce hyper-specialists with enthusiasm for their niche of knowledge. This over-eagerness, if coupled with dominance, can retard the learning process and teachers become unwilling to allow or empower the students to learn for themselves. The attitude of some - ignorant about teaching - is to envisage themselves as the keepers and exclusive purveyors of knowledge in a specific field. Over-emphasis in a particular area of expertise can result in unnecessary, albeit interesting, detail being taught in favour of principles, overviews and approaches.

If academics are to commit themselves to teaching undergraduates in a professional way, they must be trained appropriately. This has been agreed in the UK and the SCOPME Report of 1992[49] develops this theme.

The extension of the argument about teaching being a desirable and legitimate activity has come from the current focus on re-accreditation. To teach adequately, revision of current material is required. This link to the lifelong learner role model is important for undergraduates to see in action. This concept of teaching as learning is used with undergraduates teaching each other, yet its recognition has been slow. Purdie in the 1993 Royal College of Obstetricians and Gynaecologists Year Book[50] makes the point that one of the academic activities, for which cognate points for recertification would be awarded, should be undergraduate education. Teachers will only command the respect of their students, peers and seniors if they develop professionalism in their teaching. The professional development of university-based teachers is a cause of ongoing disquiet that has been extensively dealt with by Cannon[51] in the last decade, and is again coming to the fore as part of quality assurance.

Academics in the pre-clinical and clinical years are appointed with teaching of undergraduates as one of their commitments. It is presumptive to assume teaching

expertise and equally presumptive to assume that they will feel rewarded and appreciated if this field of academic endeavour remains unnurtured.

Those with the concern for undergraduate teaching as a whole, while recognising the value of present teachers, realise that service commitments, research and administration are formidable rivals for an academic's attention. Until teaching enjoys more status, it may remain, in some people's perceptions, a "bit job" at the bottom of the priority pile. How this attitudinal problem could be addressed is dealt with in a later chapter.

Academic doctors should not be the only group to teach undergraduates. There is a wide range of medical and paramedical personnel from whom students should learn. The following categories should all be considered as potential teachers:

- Part-time or visiting consultants
- General practitioners
- Junior doctors in fulltime employment
- Paramedics and special interest groups
- Nursing staff
- Laboratory assistants and technicians
- Senior students or the students themselves (peer teaching)

There has been a high degree of acceptance of colleagues who are not necessarily "mainstream teachers" where disciplines have experimented with alternative teaching possibilities[52]. Academic consultants are not the only people from whom medical undergraduates can learn.

THE KNOWLEDGE REQUIRED

The curriculum, in its widest sense, embraces not only the material taught, but also the teaching strategies adopted by the medical school and includes assessment as well. For the context of this discussion, the curriculum will be taken to mean the content or syllabus of the individual disciplines that are being taught, as well as other subjects that are increasing in importance. It does not include the "Hidden Curriculum" as described by Snyder[53]. Most medical schools have defined the aims of their teaching programmes and those of UCT will be presented later. Having defined the aims, the next question is crucial. Is the body of knowledge required to be assimilated in each undergraduate subject **appropriate** in respect of volume and content?

This is an ongoing consideration that must be squarely and honestly reviewed by every academic department involved in undergraduate teaching. The two factors of major interest in this area are "core knowledge" and "overload".

Core knowledge needs to be defined and redefined, both by those working in each discipline and those who are seen as respected colleagues. Core knowledge is more than the basic facts, and those attempting to define the limits of what should be included, use such terms as "a grasp of the problems associated with ..." or "understanding of the results of ...". Together with these semantic difficulties, there are concepts, skills (both inter-personal and clinical), plus ethics and attitudes that are included under the broad heading of core knowledge. Harden[54] has developed this debate which will receive more attention as medical knowledge increases exponentially and teachers realise that medical students cannot become "mini-specialists" in every subject.

Undeterred by potential problems of definitions, the General Medical Council in the United Kingdom has called for the introduction of a "core curriculum" into all medical

schools that would occupy approximately two-thirds of the students' time. The other third could be occupied by a series of "selectives", "electives" or "options" to provide interest and depth[55]. This is a complex task but is nevertheless one that should be tackled both at local and national level. Recognised norms for each speciality are becoming more readily definable through international co-operation such as at the 1992 International Workshop on Undergraduate Education in Obstetrics & Gynaecology in Cork, Eire[56].

The problem of factual overload in the undergraduate curriculum is one that is enjoying considerable attention in the medical education literature[57-59]. It has been blamed as the major cause of unhappiness and stress to undergraduate students. The sheer volume of information, detail and sometimes trivia faced by students is a powerful disincentive. It has been cited as demoralising and deadening of the students' enthusiasm, as well as overwhelming them intellectually.

Are the academics, and in particular the professoriat, responsible for this situation? Kirsch[60] certainly strongly hints that they may not be blameless - "Why, when we know that a course overloaded with facts encourages superficial knowledge which is soon forgotten, do we continue to construct such courses?". This calls into question exactly who is responsible for the medical course as a whole. The curriculum, in the pre-clinical years especially, is a series of subjects running parallel to each other, with little horizontal integration - at least this is the situation in Traditional medical schools. Professors who are the most enthusiastic supporters of their own subjects, and rightly so, fight for recognition and expansion of their disciplines. It is probable that they perceive the importance of their subject in relation to the amount of the undergraduate teaching time allocated. Each subject needs to annually critically review the content of its syllabus, as well as reconsideration of the contribution it makes to that particular year of study, and the MBChB course overall.

A recent survey of the clinical years' time allocation at UCT shows little inclination on the part of any group polled to make major changes in the duration of each discipline's time allocation [61]. If the **volume** of information within each subject were to be reduced, then this should be done in combination with the assurance that the teaching **time** allotted would not be reduced accordingly.

There is also concern that sub-specialities and new technologies simply add new areas for medical students to master. Perhaps it should not be taken for granted that the academics are the only people to decide on the content of the curriculum. It might be preferable to ask trusted general practitioners to review each speciality's syllabus from time to time. Would it be too outrageous to suggest that each head of department gives a list of the lectures, plus tutorial topics, of each course to a group of general practitioners for a review of "core status"? Local general practitioner societies or regional groups, certainly in Cape Town, have indicated their willingness to assist in this regard.

Agreed acceptance of what constitutes core knowledge in each discipline is by no means an easy issue. It will vary from medical school to medical school, country to country, and must change as new discoveries are made and old knowledge becomes redundant. Each medical school should have a central authority, preferably a Teaching Methods Unit, that would charge each discipline to revise its curriculum in both volume and appropriateness on a regular basis. Equally, each department requires a convener of teaching to respond to or, better still, anticipate such requirements.

Curriculum Strategies

In the English-speaking world, there are basically two recognised types of medical school. One is the "Traditional" school based largely on the United Kingdom prototype which is hospital-based, and the other, the "Innovative" school which uses Problem-Based Learning (PBL) with Community-Orientation as its strategy.

The Traditional schools have a sequential system of teaching, with the students studying the basic sciences and "the normal" before moving on to pathology and then the application of this knowledge in the clinical situation. This three-stage education does not allow scope in the choice of subjects taken, nor does it require much depth of knowledge, by other university degree standards. The students' rate of progress is prescribed and the methods of examination vary little, especially in the pre-clinical years.

Schools of the Innovative type have PBL and Community-Orientation as their basic teaching strategies, and have in common a claim of increased relevance and student motivation over the traditional format. PBL enhances, by vertical and horizontal integration, the holistic approach to patient interaction. Patients' problems form the basis of students' study, allowing them to be seen as individuals with interdependent systems and functions, rather than having their disease or pathology seen in isolation. At the heart of PBL is motivation - and the best motivation is interest.

"There is no cement like interest, no stimulus like the hint of a practical consideration" said Flexner in 1910 - cited by Walton in "Essentials of Problem-based Learning"[62].

Two other advantages are the enjoyment experienced by the student and the improved recall of facts because of their contextual embedding, as described by Norman in his discussion on problem-solving skills and PBL[63].

A major function of the Community-Oriented package is to ensure that the student focusses on health promotion and maintenance, with preventative medicine, sanitation, hygiene and nutrition being targeted. In the First World situation, substance abuse, dietary manipulation, exercise promotion, stress management and related matters fall

into this ambit while, in Third World countries, primary health care is a more relevant starting point.

PBL and Community-Oriented Education are not necessarily part of the same process and, according to Richards & Fulop are "non-overlapping" in many cases[64]. Problem-Based Learning is an educational strategy that is both exciting and thought-provoking, and more evidence is accumulating to demonstrate that it promotes life-long learning and does not leave "large gaps" in students' knowledge. Recent articles from Canada and The Netherlands support this contention[65-67]. According to Norman[63], it does not automatically enhance problem-solving skills, and teachers must be trained in the principles and execution of the method for students to derive full benefit from its evolutionary and creative process. He also notes that PBL does have the advantages that students enjoy the method and remember well the lessons they learned this way. Academic teachers need to change towards the most appropriate method for their students and, as Harden points out in his SPICES model[45], it is up to each medical school to decide for themselves.

CURRICULUM STRATEGIES

1.	Student-centred	Teacher-centred
2.	Problem-based	Information gathering
3.	Integrated	Discipline-based
4.	Community-based	Hospital-based
5.	Electives	Standard programme
6.	Systematic	Apprenticeship-based or opportunistic

Every medical school has to define its aims, goals and objectives, and the resource constraints within which it has to function. Newble and Jaeger[24] maintain that the assessment methods of each department in the medical school can profoundly affect

learning and should be incorporated in any educational model. Having defined the strategies, it must work out its educational standpoint to give a profile according to the SPICES model which will reflect its position on each issue. Fundamental in educating teachers how to teach is their understanding of what they want to achieve, and the strategies necessary to reach these objectives. New knowledge about learning processes makes the SPICES model more pertinent than ever, and it is essential that teachers are conversant with this theory, for them to have confidence in their teaching methods. No academic should embark on implementing practice without a thorough knowledge of the theory, and this is one of the most powerful arguments for the importance of teaching teachers about teaching.

The notion of a shift from Traditional to Innovative strategies for a medical school is a quantum leap. It is beyond the responsibility of the average teacher to contemplate the complexities of each method. It is, however, incumbent on each medical school to be aware of such developments and seriously consider their potential implementation. This can only be done by identifying or appointing teachers to research and debate the issues. UCT has to move positively in this direction.

TEACHING VENUES

There are recognised and documented problems arising from academic hospitals being the sole venue for undergraduate education. These have been articulated by Pringle[68], but initiatives outside hospitals are also not immune to criticism either[69]. The main concern revolves around the spectrum of patients and diseases presenting in tertiary referral hospitals[70]. Those favouring Community-Oriented education will argue against confining medical student training to "disease palaces" and insist on there being exposure to early intervention, preventative medicine and health maintenance. Oswald[71] and, again, Pringle[68] both make strong cases for the increased use of general practitioners in this role.

Teaching hospitals are, in general, sophisticated centres of excellence and are expensive to run. Economic pressures have dictated that uncomplicated cases are dealt with at a primary care level by general practitioners or local hospital doctors. Many countries, including South Africa, have secondary referral or "non-teaching" district hospitals in urban or rural areas.

Together with this streaming of patients away from the tertiary referral centres, there are strong pressures on hospital doctors to reduce the duration of in-patient admissions and to use out-patient or ambulatory facilities to a greater extent. All this mitigates against medical students seeing common or minor disorders, and certainly no preventative medicine or physiological processes - for instance, a normal pregnancy.

Evidence is forthcoming, by objective measures as well as preferences, to show that there is little difference between the results of hospital-based and community-based clinical education[72].

There are also considerable financial constraints on teaching hospitals in terms of staffing. Posts are being frozen and new management structures, such as the Academic Health Centres in South Africa, are going to make it more important than ever to ensure that the teaching taking place in these hospitals is cost-effective, efficient and of high quality.

Moves to include venues alternate to the teaching hospitals are cautiously being explored. Finances can accelerate or retard the process, depending on where funding is allocated in the future. There is no doubt that students do need to see a wider spectrum of patients and mechanisms to achieve this must be encouraged.

There are ways of overcoming the problem of inadequate patient numbers by modifying the curriculum in a simple way, as suggested by Fallon[73], or in more radical ways. The most profound way of changing the curriculum is by moving to the totally Innovative PBL and Community-Oriented strategy. Those ideals have found expression and impetus in the setting up of the "Network of Community Oriented Educational Institutions for Health Services" (Network) and the financial encouragement of American institutions such as the Kellogg, Pugh and Robert Wood Johnson Foundations[74]. There has been strong support for such collaboration with over 50 medical schools around the world registered as Network members, mostly in developing countries.

The UCT Medical Faculty has a Traditional curriculum, but has demonstrated keen interest in becoming community-relevant, with various departments having stated objectives sympathetic to such a philosophy. Examples are Community Health, Medicine, Obstetrics & Gynaecology, Paediatrics and Psychiatry. These departments have amongst them community projects, surveys into faculty involvement in Community-Based Education (CBE), declared policy, continuing training, educational programmes and journal articles demonstrating this interest.

This movement towards community orientation and primary health care is not incompatible with a Traditional curriculum at a medical school. It indicates a desire to be congruent with the changing needs, pressures and aspirations of the community. Teachers must be aware of this shift in emphasis and learn what the feelings and policies of the faculty as a whole are, and reflect them in their teaching.

CONCLUSIONS

Since the bulk of undergraduate medical education is squarely in the hands of academic teachers, there must be a commitment by these individuals to the process. This

commitment is usually willingly and enthusiastically given, so what needs to change concerning academics and academic institutions?

Attitudes need to change. Those who undertake the tuition of medical undergraduates must have a wider appreciation of the teaching / learning process than the transfer of content that occurs in primary and secondary education. These teachers must become more professional, accountable and skillful. Until such a clear-cut commitment is obtained, there is always the danger that medical education and educationalists will be unrecognised and unrewarded for their excellence. The educators need to be defined and encouraged.

The curriculum and syllabus deserve to be reviewed by educators for their appropriateness in content and depth, to suit the environment in which each medical school operates.

Entire medical schools are changing from Traditional to Innovative strategies and each faculty needs to look at its own willingness to modify or, at least, debate such potential changes.

The spectrum of patients and pathology presenting at tertiary referral hospitals is often of a highly specialised nature and students require to be *au fait* with normality, preventative medicine and early detection and screening procedures. It is becoming increasingly important to look beyond the teaching hospitals for teaching venues that will be more relevant to the undergraduate curriculum.

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APPENDIX I

A MEDICAL CURRICULUM TO SUPPORT A DEEP APPROACH

Curricula/Support	Research Rationale
Curriculum	
- linking curriculum to faculty goals	openness to students
- matching curriculum, teaching and assessment	clarifying goals and standards
- incorporating clinical applications in syllabus	increasing vocational relevance
- defining 'essential' information	to control and rationalise the workload
- selecting appropriate textbooks	which encourage personal understanding
Teaching	
- analysing the derivation of new terms	rather than encouraging memorisation
- emphasising principles and concepts	rather than accumulation of details
- creating an environment to facilitate 'good' teaching	rather than 'covering the syllabus
- actively engaging students	learn from problem solving
Assessment	
- providing adequate feedback	to monitor progress / minimise unnecessary anxiety
- constructing assessments	which require the demonstration of understanding
- marking strategies	which recognise and reward understanding

APPENDIX II

APPROACHES TO LEARNING

(adapted from Marton and Saljo and Entwistle and Ramsden)

Deep Approach

Intention to understand material for oneself
Interacting vigourously and critically with content
Relating ideas to previous knowledge / experience
Organising ideas within integrating frameworks
Relating evidence to conclusions
Examining the logic of the argument

Surface Approach

Intention simply to reproduce parts of the content
Accepting ideas and information passively
Concentrating only on assessment requirements
Not reflecting on purpose or strategies in learning
Memorising facts and procedures routinely
Failing to recognise guiding principles or patterns

APPENDIX III

INFLUENCES ON APPROACHES TO LEARNING

(adapted from Entwistle)

Student Characteristics	**Departmental Influences**
Deep approach	
Previous knowledge of topics	Matching content to previous knowledge
Perceived relevance of subject matter	Good teaching (in lectures) - level, pace, structure, explanation, enthusiasm and empathy
Intrinsic interest in the subject	Opportunities for individual choice
Study skills	Study skills training and support
Surface approach	
Fear of failure	Short-answer and multiple-choice questions
Anxiety	Heavy workload and overloaded curricula
Reliance on memorising	Spoon-feeding through handouts
Extrinsic motivation	Lack of relevance or choice

CHAPTER THREE

INNOVATION IN MEDICAL EDUCATION

Introduction

New Skills

New Teaching Methods

Broadening the Curriculum

Neglected Subjects

Interdisciplinary subjects

Sub-Specialities

New Subjects

Medical Informatics

Medical Ethics

Conclusions

References

INTRODUCTION

> The main thing, of course, is to combine good students and good teachers in a lively, well-organised medical school. But without innovations in teaching, no school remains lively.
>
> \- Lennox[1]

There are many new aspects to medical education. Paradoxically though, the most obvious factor - that of increasing factual knowledge - is not the most important in the context of student learning. It has been estimated that almost half of what students learn in terms of factual information will be modified or superseded in five years. The role of medical teachers as purveyors of facts is not that which educationalists emphasise, but rather how teachers and learners deal with new knowledge that is relevant - much of which is non-factual.

Medical teachers should have a grasp of how students learn, study and assimilate knowledge if they are going to enhance the process. **How** they carry out their teaching, rather than **what** they teach, is the thread running through the preceding chapter, with concepts of Innovative curricula being one of the many challenges medical educators face.

But there are new developments pertaining to other aspects of medical education. These are new skills and attitudes, new teaching methods and new subjects. The arrival of new students is another matter and will be dealt with in the next chapter.

Are all teachers going to be expected to review these innovations - and if not, how are they going to keep up with the changes?

NEW SKILLS

Interpersonal and communication skills are among the attributes that medical students have to acquire in their clinical years when dealing with patients and colleagues. These have, in the past, been expected to be assimilated from their teacher role models and as part of the intellectual maturation that is a component of becoming a professional. Although the skills themselves are not new, much of the knowledge about them is, and this better understanding not only allows skills recognition, but also their improved teaching. As with the learning skills, these are seldom taken on as a responsibility by any particular discipline and, therefore, it is essential that every educator understands them, uses them, and teaches them.

Despite some impetus to address these skills in the pre-clinical curriculum through the behavioural sciences, as suggested by Joseph[2], (even in Third World countries), the most appropriate place to experience and learn these is in the clinical setting.

There are difficulties, however, in that the technological aspects of medical progress and the more complicated nature of patients' problems in teaching hospitals has placed the emphasis less and less on inter-personal responses. On the other hand, patients' knowledge of disease, their expectations and their "lack of unchallenging acceptance" of the medical profession, have changed the focus back to communication skills.

There is a need to investigate new graduates' ability to give patients information and advice. The evidence available[3] confirms that most young doctors are bad at giving information.

A improved understanding of the doctor / patient relationship helps teachers in the re-examination and even re-formulation of their own attitudes and ethics. Benatar[4] traces in a non-prescriptive way the changing models of this relationship and the factors

impinging upon it. Nowhere is it more important than in South Africa to have knowledge of these principles. In many instances, there are immense differences between the First World physician and the Third World "client". Awareness of the patient's autonomy in situations with a potential mis-match of educational, social, cultural, language, custom, sophistication, affluence, age and gender, makes knowledge of attitudes more important than ever.

Students' cultural backgrounds and language differences mean that previous social and learning patterns can no longer be taken for granted. Medical teachers need to understand the psychology and components of inter-personal skills and be familiar with the proven advantages and techniques of teaching them.

Communication

Doctor / patient communication skills as a subject is far too broad to be tackled comprehensively in this context. What will be discussed is the evidence for teaching particular aspects of communication in the doctor / patient and tutor / student relationships.

The fact that communication skills, especially in the interview and diagnostic situation, can be taught and retained has been clearly demonstrated by Evans, Irwin, Maguire and others[5-10].

New techniques, using interview rating scales, patient instructors and video-taped interviews, have all proved effective in improving interviewing skills[11]. What can be taught[12], whether it can change attitudes[9], how well it is done[13], the current state of the art[14], and how this affects interviewing skills and the doctor / patient relationship are all receiving considerable attention.

Evans[15] presents reasons for developing these attributes in the pre-clinical and, more importantly, the clinical undergraduate curriculum. Long-term effects of modern methods have shown positive results when reviewed many years later[16].

Enquiry instead of assumption, assertion instead of aggression, owning of imperfection and ignorance instead of arrogance, respect between teacher and pupil, listening and questioning skills, are all areas of communication that have particular relevance in the interplay between the medical teacher and the medical student. Although communication skills are seldom tested at the undergraduate level and under examination conditions they remain a vitally important aspect of clinical education. Evans[15] again was able to "demonstrate conclusively that communication skills' training makes better interviewers of medical students, helping them elicit greater quantity and better quality information from patients". Because of the artificial nature of examination situations, other techniques need to be employed in assessing the mastery of these attributes. Workshops, video-taping and a panel of instructors may be useful in this regard[17-19].

Many of these techniques form the basis of good teaching skills and are pivotal in the small group teaching context. Firm evidence of the benefits of teaching interviewing skills is documented in various subjects. These are listed below for convenience:

Paediatrics[20]
Psychiatry[21]
Surgery[22]
Orthopaedics[23]
General Practice[24]

Communication and interviewing skills are so important that they need to be taught and examined as independent aspects within each discipline. They are life skills to the medical profession.

Suffice it to say at this stage that communication skills are at the centre of the philosophy of this dissertation. Much of the insistence on "teaching the teachers how to teach" lies in the acquisition by teachers and students of these life skills. Once they are acquired, people become proud of their knowledge and insights and, even if they do not overtly show them off or teach them formally, they will display them as role models.

Observing true non-prejudicial listening and interaction with a staff member can be sufficient to formulate an attitude for life.

Counselling

Apart from formal psychiatric or psychological counselling, there are many patients who require counselling to achieve behaviour modification or changes in life style, or simply support in times of stress, difficulty or bereavement. This role of the doctor as a health promoter, rather than a disease curer, will play an ever more important place in the medical repertoire.

In most situations, it is the general practitioner who has the first contact and is the ongoing adviser and supporter of the patient. Academics are seldom required to exercise counselling skills, except in specific settings. Perhaps this is wrong and academics should lead by example in opening these topics in all available clinical situations. The concept of positive health with regular check-ups, good nutritional advice, adequate exercise and bad habit avoidance, should also be promoted by the academic fraternity at every opportunity. Regrettably, this is not always the case. Academic teachers, especially in the pre-clinical years, are uncomfortable about dealing with counselling situations, even teaching these skills, feeling that their preparation has been inadequate.

Specific examples requiring counselling are AIDS and chronic ill-health states. These will impact massively on individuals, the community, insurance, health budgets and curative facilities. Persuasive literature comes from First World[25] and Third World[26-27] countries with astounding statistics of the effect life styles and education have on health finance and profiles of disease.

Apart from these guidance situations, there is proven benefit in doctors being trained in the counselling of:

Breaking bad news[28]
Terminal care[29-30]
Bereavement[31-32]

The knowledge of the facts and terminology in the counselling situation are far less important than communication skills. Most doctors feel apprehensive about these interactions unless they have had specific instruction in how to deal with their and the patient's attitudes, prejudices and emotions. Although it is tempting to allocate these aspects of medical education to behavioural and psychiatric disciplines, all medical educators must be aware of the established factors and sequences in the management of handling patients who need support in these circumstances.

The two examples expanded upon, Communication and Counselling, are skills that are best learnt in the small group teaching format. The real life situations that occur in the clinical years with bedside teaching, ward rounds and case presentations afford the most potent opportunity of exercising and demonstrating these skills. However, these are not by any means exclusive situations. Positive attributes can be equally well fostered in the pre-clinical years, with tutors having the opportunity to provide empathetic role models that will have long-term impact. It is essential that teachers of medical students are taught communication skills, such as listening, questioning, explaining, demonstrating and reviewing.

The small group is a time-consuming method in terms of staff involvement, but it is the most powerful in terms of experiential learning if it is allowed to be just that - experiential.

Price[33] has distilled the essence of effective clinical teaching / learning to three fundamental issues. They are:

1. The teaching / learning environment - with emphasis on listening and group dynamics
2. Intellectual challenge - encouraging principles, understanding and feedback
3. Interactive teaching and learning - with listening, sharing and reviewing being crucial

These skills are often acquired and demonstrated by experienced clinicians, sometimes without their structure being understood. It would be of benefit to all to have an awareness of the steps in the process that they are portraying. There should be a convener of teaching in each discipline who has the knowledge concerning the basic rules about these interpersonal skills, who teaches the staff about them and, if necessary or asked, checks their effectiveness in the teaching situation.

NEW TEACHING METHODS

Academic teachers are supposed to have trained minds that make connections, recognise patterns and have approaches to challenging encounters. As well as these attributes, the trained mind should also be an enquiring mind, with the following question never far below the surface : "Why not do it differently?".

ASLAN PHENOMENON

1. We make rules based on reasons that make a lot of sense
2. We follow these rules
3. Time passes, and things change
4. The original reasons for the generation of these rules may no longer exist, but because the rules are still in place, we continue to follow them.

\- Von Oech[34]

All teachers need to look at what they are teaching, how they are teaching it and whether this process can be improved. The rules which dictate the content and method of teaching medical students warrant regular review. How frequently such a review takes place is up to individuals and departments, but a serious reassessment is essential from time to time. Lectures can be given in different ways, by different people (not necessarily the experts), by actors, by students, in the dark, outside, using pairing, with a break in the middle, have question and answer sessions, or starting with the last sentence first.

At its most basic principle, any lecture must "sell" the information. This is done by keeping the method simple and the style entertaining. Cooper[35] emphasises this simplicity and quotes Hilaire Belloc as saying "First of all, you tell your audience what you are going to tell them. Tell it to them. And then tell them what you have told them.".

Better educational or delivery methods have been demonstrated to elicit favourable interaction and responses from students. Teaching skills rather than knowledge

expertise create more impact at the undergraduate level, as the infamous Dr Fox experiment showed[36]. Certainly all the established teaching modalities of lectures, seminars, tutorials, bedside teaching, ward rounds, peer teaching and self-directed learning will withstand or be changed by creative lateral thinking.

One of the most exciting and potentially the most incorporatable in the Traditional school strategy is that of Co-operative Learning. The concept developed by Johnson & Johnson[37] and Smith[38] is based on learners working together in pairs or small groups to discuss, resolve and research subjects. The clear teacher role is to facilitate rather than to teach and the experiential nature of all the interaction makes it particularly attractive.

There are other new methods that may only be applicable to particular disciplines and circumstances. These are listed, with references rather than giving detail, and illustrate new ideas and new technology.

- Simulated patients being examined and students being provided with critical feedback. This has been successfully achieved in subjects as unlikely as Gynaecology, as reported by Beckmann[39] with widespread success in the United States, as well as others[40].
- Standardised patients in the clinical or Objective Structured Clinical Examination (OSCE)[41-42]. Immediate feedback has also been found to be useful.
- Self-learning through the group experience and examination situations in general practice[43].
- Practical medical training using general practitioner placements as an option in clinical years[44].
- Psychodrama and supervised role playing as a means of learning consultation skills[45].

- Pairs of students studying families as part of their first year integration[46].
- Using students as instructors to each other or to their junior colleagues[47-48].
- Student initiated experimentation in the pre-clinical physiology situation[49].
- Video endoscopy as a diagnostic and therapeutic tool in nearly all disciplines, especially surgery[50].
- Other imaging techniques - computer aided and enhanced - are allowing whole libraries of stored data to be available for the demonstration of the normal or pathological[51-52].
- Clinical Methods introduction courses in the pre-clinical years make use of extensive radiological images to assist diagnostic teaching in highly successful ways[53].

It is up to each medical teacher to develop a personal interest in not only what is taught but how the message is transferred. It has often been said that medical education is the conveying of enthusiasm from the teacher to the learner. Certainly, new methods bolster this enthusiasm and allow use of the Hawthorne Effect[54].

All teachers cannot realistically be asked to read Medical Education journals, sift through articles and attend educational meetings where new ideas such as these are generated. There needs to be the encouragement of a teaching enthusiast in each department or discipline who will be given time, opportunity or even reward for keep up with the literature and current events.

BROADENING THE CURRICULUM

In the face of almost uniform curriculum overload, it seems anomalous to be discussing new subjects. However, unless the plethora of new issues and subjects are discussed, the curriculum will stagnate and certainly there will be less pressure to change the status quo. Those subjects demanding medical teachers' attention fit into three categories:

Neglected Subjects

These are particular to each medical school. Every school has specific disciplines that feel they are the "poor relations", in terms of allocated time.

The populations served by teaching hospitals are in a constant state of flux, with demographics, disease patterns, sophistication and priorities all changing. To remain relevant and appropriate, each curriculum needs to be reviewed and chosen medical teachers need to be given the opportunity to perform this function in concert with their colleagues.

At UCT, Psychiatry and Orthopaedics are in need of such attention.

Interdisciplinary Subjects

Many subjects about which the medical graduate requires knowledge and expertise do not fit comfortably into any particular discipline. Although lip service about the teaching of such subjects is often paid in disciplines, the incentive to examine them is not strong. This undermines the importance of each topic and examples of these are Medical Informatics, ethics, AIDS, health promotion, decision-making and many of the inter-personal skills previously discussed.

Sub-specialities

There are periodic calls for the registration of sub-specialities, both within and across disciplines. This recognition may precede the introduction of new categories into the undergraduate curriculum and can again reflect the needs of the community. Examples of these are rural medicine[55], industrial or occupational medicine[56], environmental medicine, sports medicine, nutrition, economics[57], palliative medicine[58-59] and geriatrics[60].

No-one will dispute the importance of many of the subjects mentioned. However, it is unlikely that, even some of the crucial ones will be included in the undergraduate curriculum because they do not fall easily under the "auspices" of any particular established discipline.

Again, enthusiasts with medical education principles as their concern will work for the inclusions of these "orphans" to be included by departments as part of their teaching and, more importantly, their examination.

NEW SUBJECTS

Two of these subjects are discussed in more detail to highlight this dilemma.

Medical Informatics

There are widely differing perceptions as to what falls into the category of crucial knowledge for student and teacher. It is contended that information technology will be one such subject and will have bearing on all phases of medical education in the foreseeable future[61]. What follows is an overview of the subject in broad descriptive terms. Those wishing to have more detail are referred to the references supplied by discipline in the text.

It would be a truism to say that we are in the decade of the computer. Digital technology impinges on every aspect of medicine.

Medical students bring computer literacy[62] with them to the medical course but, as yet, little use is made of this medium directly in teaching. Most students, and this has been documented from McMaster University, wish to learn computer applications that will assist them with patient management, information access and organisation[63].

Indirectly, computers impinge on medical education by:

The facilitation of medical student selection.

The generation of information concerning the medical course.

Word processing of lecture notes and handouts.

The production of lecturers' slides[64].

The writing of books.

Involvement in the setting, scheduling and marking of examinations.

Computing possibilities have not realised their full potential in that students may soon be taking notes using laptops, buying books or lecture notes in disc form, using self-test data or typing examinations. Paperless essays are already being used as a means of both improving writing and computer skills in pre-clinical neuroscience courses[65]. Computers store and organise vast quantities of information and the display of factual information is already being combined in visual displays with auditory output.

Much of the vocabulary, factual background and peripheral reading of what students are required to know, could be learnt from computers. They have many positive features in that they are always available, enable the student to set the pace, are readily updateable, are economical of teacher time, and allow repetition and reinforcement that would otherwise be tedious. Once the core curriculum has been established in each discipline, it could be captured, stored and then compared and contrasted with other

universities and faculties. This international co-operation is already being pursued and will allow standardisation as well as modification to suit local circumstances.

Other obvious applications are the availability and accessibility of medical information technology systems in departments and libraries, between hospitals and universities, between countries, and almost unlimited and easy access to patient files, references, books and records. Statistics packages, spread sheets and sophisticated projection systems are all accessible for lectures, course planning, examinations and other purposes.

The next level of computer application is that of interactive learning. Computer Assisted Learning (CAL) is the fastest growing domain in medical education with its own journals, conferences, units, networks and commercial interests. Apart from the interactive aspect of instruction and examining, whole new unanticipated vistas are appearing. Amongst these are authoring systems for courseware construction, the development of multimedia instruction with virtual reality enhancement, laser cut Compact Disc Read-Only-Memory (CD ROMs) and scanning optical character recognition, providing almost limitless possibilities for input, storage and information transfer. The literature is vast on this subject and is growing exponentially. Suffice it to say that the following disciplines have recent CAL publications pertaining to them:

Health Sciences[66]
Biochemistry[67]
Genetics[68]
Medicine - Cardiology[69]
Medicine - Respiratory[70]
Medicine - Rheumatology[71]
Pathology/Bacteriology[72]
Medicine - Gastroenterology[73]
Medical Education[74]

Radiology[75-76]

General Practice[77]

Medical Education[78]

It would be naive to expect that undergraduate medical education will be untouched by computer technology. This revolution will not implode like the unfulfilled promise of tape slide programmes. The sharing of intra-disciplinary software has begun and will expand in the same way that the computer industry has done over the last ten years. Keeping up with the speed of developments is the only potential problem.

Unadaptable **teaching** staff and not students will balk at the new technology. The onus will be on the educators to see that the core knowledge they want their students to know is available in a user-friendly format. The technology is here - the teachers must be taught how to optimally use the medium. Most medical schools have resource people or centres that can provide the information technology available for writing programmes. Those who are not computer literate can provide text and illustrations for transposition onto course-ware, with little difficulty.

Those with enthusiasm will take to the medium - that should provide new life to the "technocrats" teaching as the students will certainly provide a worthy challenge.

Medical Ethics

Ethics teaching is as old as medicine but new developments have demanded the reconsideration of its position in the medical curriculum. The technologies of transplant and reproductive medicine and life-support systems are obvious examples of these pressures, but no less important are the changes in health care professionals, patients, society and doctors' attitudes.

Attitudes to abortion, fetocide, embryo experimentation, gender selection, zygote preservation, surrogacy and a plethora of new concerns precipitated by ***in vitro*** fertilisation technology, are all generating fuel for heated discussion. The political forces in South Africa will change soon and all doctors will be required to reflect on their own views and how these have been formulated. Finite resources will be stretched ever thinner, with AIDS and Primary Health Care devouring funds, while expensive technological advances continue to offer real hope for privileged or fortunate patients.

The prospect of genetic manipulation will provide a whole new spectrum of questions that will require trained minds to address with any degree of satisfaction.

A strong thread of ethical teaching is required in the undergraduate curriculum and, as Benatar[79] suggests, these factors require a response from teachers to rethink the traditional and evolving concepts - and to teach them[80].

It is widely accepted that ethics teaching should not be opportunistic but systematic. It is one subject that genuinely demands the development of cognitive skills and is, therefore, compatible with the deep approach to learning. Seedhouse[81] suggests that there are indeed innovative methods of teaching health care ethics. Newble & Clarke[82] support this view and make the following observation in their chapter entitled "Approaches to Learning in a Traditional and an Innovative Medical School".

> "The attributes which we would desire of a university graduate are very much those embodied in the deep approach. Disturbingly, the little evidence we have suggests that not only are these attributes unlikely to be achieved by some students, but also that students might be actively inhibited from achieving them by our curriculum structures and our teaching and examining methods".

Innovative approaches for the incorporation of systematic ethics teaching in a Traditional medical school could be achieved by vertical integration. A single agency or committee could take responsibility for structuring a course threading through the whole six-year syllabus. They could choose suitable ethical topics to be studied in each discipline. Students could write projects, present arguments, debate ideas and formulate attitudes in a non-threatening and non-examination ambience.

In this way, a series of ethical topics could be covered through the basic sciences into the clinical years. There could be an assessment for work presented by groups or individuals which would focus commitment in a subject which generally generates interest.

These new approaches to teaching traditional subjects need to be taken on and developed by teaching enthusiasts. Self[83] considers this link between medical education and the student's moral development to be important. The scheme presented is educationally sound and is only an attitude away.

CONCLUSIONS

The essence of teaching is the conveying of enthusiasm.

Enthusiasm can only be maintained if boredom is avoided and innovation is one way of ensuring that this does not happen. There is no lack of new ideas in medical education and the object of this chapter has been to give medical teachers a glimpse of the multi-faceted developments taking place. These extend from the intellectual teaching strategies, through the structural teaching events, to the teachers' role. It encompasses new concepts of inter-disciplinary subjects, behavioural sciences and new technology.

These advances deserve to be studied by those involved in teaching medical students. Teaching enthusiasts should review, study and pass on the benefits of these innovations. All need to be tried and tested, researched and confirmed, before being taken on board. All other aspects of an academic doctor's endeavours are underpinned by sound theory and up-do-date knowledge. It is inconceivable that an academic embarks on implementing any practice, procedure or therapy without a thorough grasp of the subject - including innovations.

Why should medical education be different?

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CHAPTER FOUR

THE INFLUENCE OF STUDENT POPULATION DEMOGRAPHY

Introduction

Worldwide Trends

University of Cape Town Student Numbers

Student Selection

Affirmative Action

Chronological Changes

Discernible Trends

Conclusions

References

INTRODUCTION

> If I had to reduce all of educational psychology to just one principle, I would say this : "The most important single factor influencing learning is what the learner already knows. Ascertain this and teach accordingly"
> \- Ausubel[1]

It is becoming more difficult to ascertain what the learners starting at medical school already know.

New school-leavers entering the Medical Faculty are drawn from an ever-increasing disparity of backgrounds. The remarkable changes in the first year class demography at the University of Cape Town (UCT) are described, and raise questions of the University's response to this phenomenon and the adaptive measures required.

Worldwide there is no shortage of young men and women wishing to become doctors. Despite adverse factors such as the changing reputation and esteem of the medical profession; increasing costs of training and decreasing rewards; potential dangers (exposure to life-threatening and incurable diseases[2]); and the glut of doctors in First World countries, there is an overall increase in the number of applicants to medical schools.

In Third World countries, medicine is still viewed as a secure profession, and the influence of women's movements and political forces ensure a steady stream, if not a flood, of "new" applicants.

Changes in the make-up of the student populations entering medical schools reflect social, political and financial developments. Different medical schools appeal to different types of students and now, with Innovative schools offering alternative curricula, applications may well be received from new cohorts of alternatively motivated students.

Statistics from UCT in particular show dramatic changes in the student population and this raises questions about teaching, learning and adapting.

South Africa is going through a time of rapid change. These changes demand reflection, and our Medical Faculty would be failing in its obligations as an academic institution which claims to be an integral part of this evolutionary process if it did not document, analyse and publish its experience.

WORLDWIDE TRENDS

The range of student : staff ratios throughout the world varies enormously. Some Italian medical schools admit anybody into first year who is able to pay for "tuition", which is obviously good for revenue, and then proceed to fail 90% of them. This contrasts sharply with other prestigious universities with Traditional or Problem-Based curricula which have strenuous selection criteria, sometimes with searching interview and written components. These processes have elicited some acrid responses.

> "It is easier to become an astronaut than to get into the first year at McMaster".
>
> \- Norman[3]

The Australian medical schools have a surfeit of medical personnel and are embarking on a national programme over the next two years that will fundamentally change their method of student selection. They will be selecting postgraduate students to embark on a four year medical degree course. They hope in this way to reflect the needs of their community for more empathetic, holistic and generalist-type doctors, rather than the tendency towards technological specialists which is the present trend. There is no lack of competition at present as the "brightest and best" apply.

This is in contrast to the United Kingdom specifically where there is a decrease in the number of applicants to medical schools in the face of rising applications for other tertiary education in universities and post-secondary education centres. Lowry[4] quotes the present ratio of applicants to acceptances as being 2 : 1. In the United States of America, there was a decrease in the number of applicants through the 1980s, but this has been reversed and the latest statistics (1991 - 1992) show a 24% increase of applicants over the preceding year[5].

UNIVERSITY OF CAPE TOWN STUDENT NUMBERS

UCT accepts 190 to 200 students into the MBChB degree course every year. The majority of students are admitted into the first year, with a few joining in the second year - provided that there are places available, the students have the necessary course credits and are competitive. There are still fewer who transfer from other universities or countries, but these are exceptional cases and will not feature in this overview.

135 to 150 students graduate each year with the highest drop-out rates occurring in the first and second years.

Once into the clinical years, the attrition rate is extremely low. Although this is superficially pleasing, there is the rider that this "has to be so". Numbers in the clinical years are governed by the size of the groups and the number of groups that can be accommodated in the wards and residences. These constraints have the effect of encouraging high pass rates. It also has a "domino" effect on the number of students that can be admitted into the first year of study. If the teaching suddenly improved in the first, second and third years, or standards were lowered, this would result in a glut in the clinical years. If, on the other hand, standards were raised in the clinical years, teaching deteriorated, or poorer students were allowed into these years, this would also result in a bottleneck effect that would require complicated disentanglement.

STUDENT SELECTION

The following are the selection mechanisms, admission requirements and the composition of the first year MBChB class at UCT.

Selection Mechanism

A rating system of points is used, 80% derived from the applicants' school academic performance, and 20% from a report on their personal qualities. There are no interviews. The system is blinded and no exceptions are made on the basis of cash, kind or kin.

The selection process has been extensively reviewed in a paper by Lazarus & van Niekerk[6] who trace the arguments as to the purpose and pre-requisites of the selection processes. The value of interviews in the South African situation has been reported by Mitchell[7], with the United Kingdom's present position concisely reviewed and updated by Bullimore[8] and Lowry[9].

Admission Requirements

Citizenship	-	South African
Age	-	15 years or older
	-	there is no upper age limit
School subjects	-	must include mathematics and physical science

Three foreign students per annum may be admitted at the Dean's discretion.

Composition

195 - 200 admissions per year

25 Department of Education & Training (DET) or Transkei school-leavers

15 undergraduate transfers

15 - 20 graduates

Repeating Students (approximately 10)

Balance - new school-leavers

AFFIRMATIVE ACTION

UCT is committed to non-discrimination in the selection of its students on the grounds of race, gender or religion. Because of the country's racially based laws that were in force until recently the University feels that positive action needs to be taken to redress the situation. This has found expression in two ways :

(i) Graduate Admissions

Of the 15 - 20 students who are allocated places into the MBChB course in this category, 5 places will be reserved for Black Africans, provided they are of suitable standard.

(ii) Medical Academic Support Programme

This is an academic support programme for students from disadvantaged secondary school education backgrounds. In practice, this means Black African students who have had their schooling either as Department of Education and Training (DET) scholars or in the Transkei. These schools are under-staffed, under-funded and under-privileged. Because of the disparity in teaching and examination standards, these students do not compete in the same category as the other school-leavers for admission into the first year, but have about 25 places kept for them and are accepted for the MEDASP Programme[10-12]. They are lacking in certain skills and require academic support.

As medical students, they have to contend with the following factors:

- Being part of a minority group in the class
- Having few role models
- Social pressures
- High family expectations
- Seldom coming from homes in proximity to the University
- Living in residences
- Financial problems
- Political non-representation
- Learning in a second language

They undertake a different first year curriculum, and are given four years to complete the first three (pre-clinical) years. This support ends at the end of the

academic third year and it remains to be seen how these students will fare in open competition during the clinical years.

CHRONOLOGICAL CHANGES AT U C T

TABLE 1

APPLICANTS - TOTAL NUMBERS

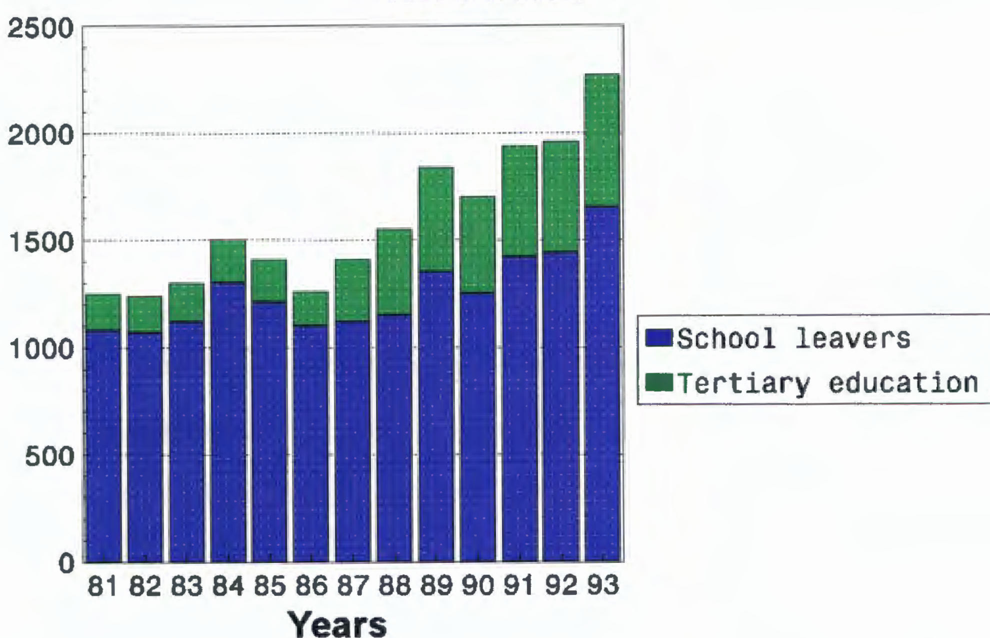
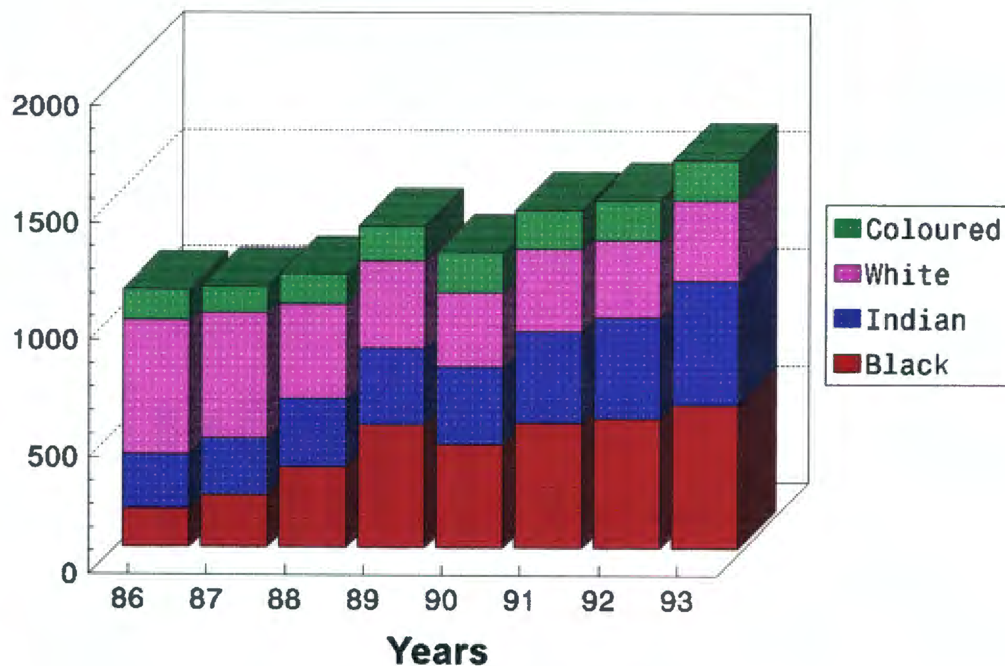


Table 1 shows the number of valid applicants (those fulfilling the Faculty's admission requirements) for the first year MBChB degree course at UCT. The 1993 figures give an application to acceptance ratio of approximately 12 : 1.

TABLE 2

APPLICANTS - SCHOOL LEAVERS BY RACE



Prior to 1986, Ministerial permission had to be obtained for Black African or Indian students to be admitted to the Faculty. Since then, there have been significant increases in the number of Black African and Indian students applying, with over 1000 such aspirants in these two categories alone in 1993, whereas the Coloured applicants show little change, and there has been a decrease in the White group, but this latter trend has levelled off over the last five years.

The pattern of applicants with tertiary education (not shown) is very similar for the last five years. In this sub-group there remain vastly more applicants than can be

accommodated in the 20 places available. In 1993 there were 632 applicants with tertiary education (271 with degrees) - an application to acceptance ratio of 32 : 1.

TABLE 3

ADMISSIONS BY GENDER

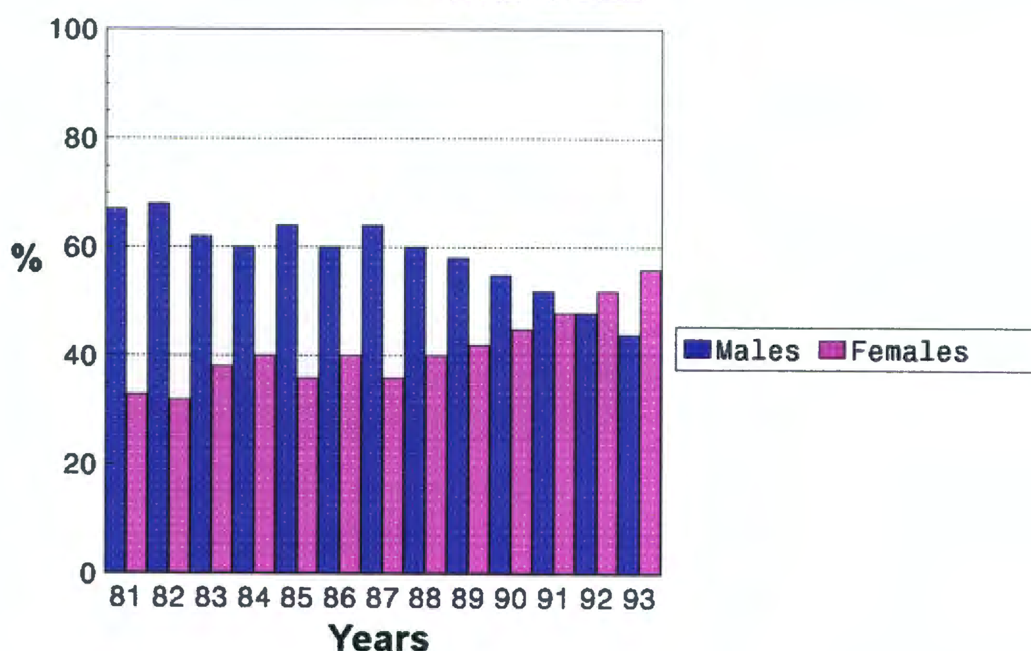
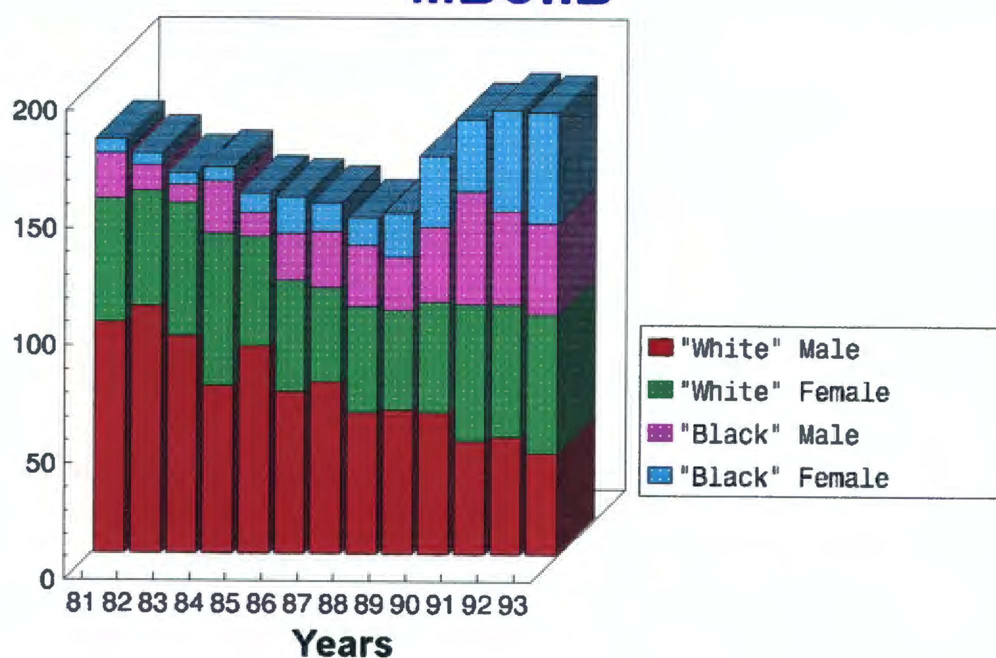


Table 3 shows the gender composition of the first year admissions at UCT, as percentages. The trend of increasing female to male ratios of the last five years has resulted in the 1993 final year class having a female to male ratio of 40 : 60, whereas the 1993 first year class has a ratio of 56 : 44.

In the United States in 1992 there were 32300 applicants (nearly 40% of these were women) and the final acceptance total of 17500 reflected the same ratio[5].

TABLE 4

ADMISSIONS BY GENDER AND RACE



For the purposes of this Table, "Black" has been taken to be Black African, Indian and Coloured groups combined. The clear trends are:

1. The rapid rise in the number of Black African female admissions over the last five years
2. An increase in the number of Black African male admissions which has not been sustained over the last two years
3. The relatively constant number of White female admissions over the years which has led to this group having proportionally greater representation, as opposed to the steady decrease in the number of White male admissions.

DISCERNIBLE TRENDS

These statistics of the UCT applications and admissions reflect a student population in the midst of major change. Having noted and presented these changes, various questions are raised.

Does the increase in number of applicants mean fiercer competition and, therefore, brighter and better students? Should the admission criteria be changed to match the applicant profile and, therefore, more graduates be admitted? Will the change in the gender and racial ratios affect standards? Do these trends have predictable ramifications and do they require responses from the Faculty and the teachers?

There is no way that one can confidently answer these questions and they do present a dilemma. However, as with all problems, it is necessary to recognise their existence as part of the process of addressing them. It is, therefore, incumbent upon UCT to keep records, monitor and publish the progress of all its students. As difficulties arise, these need responses and other repercussions anticipated. The most obvious ones are the disadvantaged students and the financial burdens that are going to occur, and how best to cope with these in the face of dwindling resources.

The trends are discussed in the following paragraphs with suggestions and experience quoted from the literature to assist deliberations. Regrettably, such information is in extremely short supply which again puts the onus on UCT to monitor and publish data as it becomes available.

Gender Trends

It is of interest to note that, irrespective of race, the gender ratios are maintained. The White male decrease in admissions is an ongoing downward trend, despite the fact that the number of applicants has levelled off in this category. This reflects the increased

perceived career opportunities by women, especially in First World countries as reported by Kruijthof from Holland[13]. Although no interviews are used at UCT, it is of interest to note that the applicant's gender can have an effect on interview content and, therefore, might provide a gender bias at other institutions, as reported by Stiffman & Blake[14].

Black African female students have had the sharpest rates of increase over the last five years of the various groups admitted, and constitute 58% of the Black African numbers. This increase is unlikely to continue as the DET and Transkei school-leavers have, at present, a maximum number admitted through the MEDASP programme. It is also unlikely that the proportion of female to male students will continue to change at the present rate and indeed this has stabilised in other countries. Canada has a female to male ratio of 45 : 55 that has remained constant over the last five years[15].

Where comparisons have been made, no statistically significant differences have been shown between men and women in respect of withdrawal or success rates. Some trends are apparent at the top end of the scale, with Neame[16] reporting women obtaining more honours than men.

There is a lack of congruence between the teaching population and the student population in terms of gender at present but as more women qualify and pursue academic careers the Americans, at least, predict a reduction in the disproportionate teacher : student ratios and lack of role models[17]. Increased sensitivity and awareness of gender discrimination, sexual abuse, inappropriate sexual humour and sexism are all matters that are receiving more and more attention, especially at UCT[18].

Race

The racial change may require a response in certain aspects of teaching. Language, both verbal and written, cannot be taken for granted in a student population of widely

varying first languages. Analogy and metaphor in explanations need modification, and humour and anecdote must be checked out to ensure comprehension. The article by Ahmed on the inappropriateness of culinary metaphors in western medicine used in Africa quotes many good examples[19].

Black African students from the DET and Transkei schools do not fare at all well in open competition for MBChB acceptance on academic results. They are clearly disadvantaged by the secondary education they have received and, until changes occur, this group's disadvantage will continue.

There is very little published in medical education literature concerning the experience of academic support programmes for educationally disadvantaged students. What is available has been variously called "non-traditional"[20], "under-represented minorities"[21], "disadvantaged populations"[22], and other euphemisms for usually under-privileged groups.

Support systems for students with academic or personal problems are in place at most medical schools in First World countries and their availability was surveyed by Coles in the United Kingdom[23] and Wolf in North America[24].

Academic Support Programmes (ASP) have existed in the "White liberal" Universities of Cape Town, Natal, Rhodes and the Witwatersrand since 1982, and focussed originally on English instruction and teaching approaches. These programmes have been general resources within universities that have provided instruction across faculty boundaries. Cohesion nationally has been achieved by workshops and publications. The ASPs have developed their own identity and impetus and have moved toward goals of extending cognition / learning theory and, latterly, to the field of institutional academic development.

Although the academic support movement is not central to the theme of this dissertation, it embodies change in the university practice in accommodating a new group of students. This brings with it fundamental re-thinking of the collegial purpose, optimal teaching and learning practice which includes political restructuring of the learning environment[25].

The impact of ever-increasing numbers of "disadvantaged" students on the university as a whole will be profound, and academic support in the medical course will hopefully lead in the process of adaptation. The teachers will certainly have to change to be relevant to the new group.

> It is not only these "new" students who will have to fit into the university, but the university that will have to fit in with the "new" students
>
> - Mehl[26]

Medical Academic Support Programme (MEDASP)

The MEDASP programme of the Faculty of Medicine at UCT was started in 1991 and is administered from the Dean's Office. Disadvantaged scholars from the DET or Transkei / Homeland school systems, whose marks are not competitive with mainstream school-leavers for entrance into the first year of the MBChB course, are selected to join the MEDASP programme which has the following basic features:

- 25 "disadvantaged" students start in first year annually

- they have a marginally differing curriculum, comprising two and a half compulsory first year subjects, including two taken with the regular students
- they do not undertake an optional (selective) subject in first year, but instead do two half courses - one in the first and one in the second year - which are credit-bearing skills development courses with a medical content
- the first, second and third academic years are spread over four years chronologically, allowing fewer subjects to be studied simultaneously
- the same examinations are written, and the same standards for success are required as for the mainstream students
- support is given in terms of academic input, language instruction (both written and oral), socialisation and finances where required
- mentors are allocated and skills development fostered
- close monitoring of progress is maintained

It is planned to increase the numbers of students joining the programme each year, but expense is a limiting factor with dedicated ASP tutors required for subjects in the first three academic years. It is presumed that the students will then be able to fend for themselves in the regular fourth year and subsequent two clinical years. The programme ends with the pre-clinical courses. There are reasons to suggest that this may be an imprudent strategy, based on observations in other faculties.

ASP students in the Arts Faculty at the University of the Witwatersrand were reported[27] to have adjustment problems with "academic discourse being a form of argument"; "reading for meaning"; and "volitional attention as a part of normal academic practice". The link is made between these problems and research on student learning[26] that may reveal its significance in clinical medicine. These connections may

turn out to be fatuous, but careful observation of developments will obviously need to be continued.

Progress thus far has been encouraging and the results have improved with experience[28], so misgivings about MEDASP students coping in later years may be unfounded. The whole exercise has created unexpected and welcome opportunities for students and staff alike. The willingness of the Medical Faculty to tackle the task and the espousement of new teaching programmes augurs well for the faculty's responsiveness and adaptation in anticipation of the real new South Africa. One of the initiatives undertaken has been the maintenance of standards. This, as one of the guiding principles, has helped to redefine standards and tenets that were ripe for reappraisal. The arrival of "disadvantaged" students has caused the Medical Faculty to look at its wider academic function and narrower teaching commitments with renewed vigour.

The extra duration of the MEDASP programme increases the costs to students taking this route. Specialised tutors in the first four years may have to be augmented by specially trained and extra staff in the clinical years. The costs of the MEDASP programme are not only considerable (and, indeed, almost inhibitory) to the university, but are in danger of biasing student selection.

Part of the professionalism of a trained teacher is the awareness of attitudes and prejudices. Teaching excellence will always be flexible and empathetic, and the effect of a student population more representative of the country's population in general can only highlight and improve tolerance and acceptance of difference - if not ambiguity!

UCT's championing of academic freedom has found expression in both defiance of Government interference and positive action in redressing imbalances. It will again be up to the University of the future to decide when this political heritage has played its

way through the system and selection of student and staff can revert to truly academic merit.

Perhaps the student population will eventually reflect the distribution of the population in general, not only in social, racial and gender representation, but also in rural and urban contexts.

Doctor Distribution

There is no doubt that there is a major problem with the distribution of medical personnel in South Africa. Benade[29] highlights the increasing imbalance between both rural and urban medical practitioner distributions and White urban and Black peri-urban areas.

Black African students are generally from poorer sections of the community, some of them from rural areas. Certainly their language skills and standing in the community would make them ideal recruits for rural service. There have been some local reports suggesting that this "return to their roots" choice of practice location does occur, but not to any great extent. Experience in Jamaica[30] is marginal. This is in contra-distinction to reports from First World countries such as Canada where incentives favour rural practitioners by financial reward. Magnus & Tollan[31] report a highly successful scheme in Norway where rural applicants trained at a medical school in a **rural area** later served that particular population, with beneficial results.

This begs the question as to why these methods succeed in some areas and not in others. It may well be that area and finances have a great deal to do with it. Rural recruits, trained in a city environment, may find the financial, cultural and social attractions sufficient to make them stay. Equally, the financial facts demand closer scrutiny.

Financial Considerations

Black African students coming from disadvantaged communities have financial problems in addition to their educational difficulties. This has serious implications with the continuing increase in tuition and residence fees (above the rate of inflation) creating numerous pressures and stresses that need to be recognised. Black African students from rural areas or townships seldom live in proximity to the universities and residence accommodation is frequently required.

The cost of medical students' education at UCT (tuition plus residence fees only) is R16 725 per annum in 1993. The projected cost in 1997 is R44 741 per annum, calculated at a rate of increase of 21.75% which has been the average over the last five years. The total cost of tuition plus residence fees for a student starting in 1993 and finishing in seven years is more than R225 000.

This presents gargantuan problems to all but the most wealthy. Bursaries are essential and there are fears that the selection process will have to take into account the applicant's ability to pay the fees or possession of a bursary. This, itself, would build in an elitism based on economics that would be unacceptable.

There is another confounding factor which deserves consideration. This is the indebtedness that students incur during their training. Colborn[32] has demonstrated the difficulties a student would have in paying back an average accumulated debt within the public sector pay structure. Fox[33] also relates a student's indebtedness on qualification to their choice of specialisation. The evidence obtained by these researchers suggests that the very students recruited to redress the imbalance of medical practitioners in rural areas may be in the worst position financially to do so as urban specialisation remains the most lucrative of all the available avenues of remuneration.

There would be considerable irony if the spending of university money on the increased costs of tuition for these Black African students were to achieve the situation where they simply were to service the White urban elite through financial necessity.

Stress

An under-researched area that may be particularly pertinent to the disadvantaged student is that of stress. This has been alluded to in previous Chapters, but little has been done to investigate the pressures on this group. Being away from their home environment, surrounded by high achievers from local privileged home circumstances, faced by formidable financial pressures, urban social attractions, and learning in a second or third language will surely provide stresses that could lead to sub-optimal performance[34-36].

The superficially commendable commitment of time, resources, finance and energy by the university to disadvantaged students needs to be carefully monitored. It may be a huge success or end up as a highly questionable and expensive exercise. Will it be worth the effort? Will other students who are excluded by the "disadvantagedly" selected students' presence be accepting of the situation, or claim racial prejudice?

There are social pressures that are more difficult to understand if there is a disparity between the teachers (role models) and the students in terms of their gender or race. Good teachers need to be made aware of these potential stresses and problems and they must learn about their students and themselves. This can only be good for the continuum of their own learning.

More and more aspects and causes of stress are being uncovered and this is a source of disempowerment of medical students and a contributing factor to failure and under-performance. It will be up to the teachers to identify new stresses brought about by the

change in student population, because it would be foolhardy to pretend that these do not exist[37].

CONCLUSIONS

Student selection remains one of the most contentious issues in medical education throughout the world, and especially in South Africa. No national policy exists in terms of the total numbers catered for or their composition. UCT has embarked on affirmative action which will change the complexion of its medical classes racially while social trends change the gender ratios.

Will the students adapt to the University, or the University to the students? Should there be accommodation by both sides?

Curricula changes, strategies, new techniques, methodologies and technology, alterations in learning environment, core curricula, and even the teaching of teachers, are all ultimately dependent on the student and that student's abilities. Without the ability or with added stresses, students will underperform. UCT is making an attempt to redress previous inequalities by a proactive support programme. It will be up to the University authorities to commit resources and finances to see this through.

The question of whether the University is adapting to the students is complex. If the University is going to need to change, how should this be achieved? Nobody believes there should be a reduction of standards - so maybe there should be an improvement in the teachers themselves.

Monitoring of the performance of the new student population will have to be carried out in each discipline. A convener of teaching in each department will be required to look at the results of the whole student body and decide whether any one demographic group is under-performing, report on these, and make recommendations. This is not a time for complacency, but for action. Teachers need to be vigilant, aware of the changes and able to respond to them.

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CHAPTER FIVE

POLITICAL FACTORS AFFECTING MEDICAL EDUCATION

Introduction

General Political Factors

Global Influences

African Perspective

South African Politics

University of Cape Town

Conclusions

References

Appendix

INTRODUCTION

Preventative medicine, curative medicine, health care and, by inference, medical education are all enjoying a very high profile at the present time. Much of this attention is due to political issues, such as the inequitable health policies of the South African Government, the anticipated demands on health resources, plus the vast costs involved at a time of local and world recession.

The auditing of these activities (especially curative medicine) has brought increased accountability to those involved and has moved medicine closer to the party political arena. This is seen by some as restrictive and may well provoke defensive and introspective responses.

On the positive side, the loosening of sanctions against South Africa and the re-organisation of the world order has opened opportunities for co-operation between Africa south of the Sahara and South Africa. The formidable problems of African medicine can usefully be assisted by the infrastructure and First World expertise in this country. South Africa itself, has to weather a stormy political transition, but should be a far stronger and fairer country as a result. The values of the academic centres of excellence, and all efforts to maintain standards of medical education, will surely be respected by any future government.

Medical educators must work with the Realpolitik of those in authority, the community they serve and academic ideals. It will require professionalism, knowledge and hard work for the University of Cape Town to convince the politicians to keep its Medical Faculty and Groote Schuur Hospital adequately funded as the most expensive academic health centre in Africa.

Definitions

Politics will be taken to have two meanings in this chapter.

The first is a general definition that includes factors and relationships influencing authority, as well as the reciprocal influence of authority on individuals[1]. Examples of this are faculty or university politics and power broking.

The second is the more traditional meaning of parliamentary or governmental law and State administration, and is concerned with funding and direction dictated by those in power.

The focus of this discussion will be South African and University of Cape Town (Medical Faculty) politics, with reference only to African and world politics as a lead-in for perspective.

Politics, in the case of UCT, involves the State-appointed statutory body (The South African Medical & Dental Council), national interest groups such as the South African Association of Medical Education and the South African Association for Research and Development in Higher Education, and its own university authorities through the Faculty, Groote Schuur Hospital or the Academic Health Centre.

It is significant that more interest in medical education is being shown by these authorities than ever before. Despite the precarious nature of forecasting and scenario planning, it is sensible to anticipate that the political and financial spotlight will fall on health care and education "like a laser" in the next few years. If intense scrutiny is to be responded to successfully, the micro and macro politics impinging on medical education need to be understood, and political transition prevented from becoming educational turmoil.

GENERAL POLITICAL FACTORS

South African society is demanding that politicians provide a health service that is appropriate and affordable. What is affordable appears to become less and less in terms of sophisticated care, and what is appropriate has been simplistically defined as the level of care necessary to keep the populace healthy. The services required to achieve this aim range from basic health education and preventative medical and public health authorities, to general practitioners, local clinics, community hospitals, referral hospitals, tertiary centres and research institutions.

Into this mix must be added the inevitable clash between the private and public sectors, which is a worldwide dilemma. Every country wrestles with the problem of differential standards of care for the rich or privileged versus the poor or indigent.

Authorities, and in particular politicians, are likely to pay more attention to health matters in the immediate future, for the following reasons:

- More information about all aspects of health care is becoming available
- Statistics, research and data for comparison between groups, societies, provinces and countries can be turned into emotive political copy[2]
- The pharmaceutical industry and commercial health care providers are vulnerable to market forces that will undoubtedly contribute to the ongoing spiral of medical costs
- Public knowledge of medical matters, especially potential pandemics, disasters and tragedies make political news
- A rapid increase in the cost of drugs, treatments, hospitalisation, medical aids and doctor's fees is forecast
- Medical education is expensive in its own right, but has the potential for influencing costs by directing emphasis and knowledge on priorities and prices[3]

- English-language international medical education journals allow interests, standards, progress and commitment to be compared. Examples of these are cited in the Reference section and certainly provide the source of material for critical debate[4-21].

South Africa today is a crucible, if not a cauldron, of change. It is a legitimate question during such times to ask whether or not standards will be the same once the transition is completed. Should a change in standards not occur in order to be the tangible response to society's pressures and needs? Is it not part of the evolutionary process?

Academic medicine must strive to influence political will and medical education protect itself from being the soft option for political targeting, especially financial cutbacks. This has to be achieved by attaining and maintaining high standards backed up by audit and research.

Are these political platitudes of direct relevance to medical education? There is no doubt that UCT will have to get its educational house in order. The affirmative action described in the preceding chapter is well and good but future responses, student performances and teaching standards must be diligently measured and be available and able to stand up to objective scrutiny.

Whose responsibility will this be?

GLOBAL INFLUENCES

> "There is a global consensus that medical education must be reorientated to meet current and future requirements of society"
> - Menken[22]

The worldwide recession has resulted in less money being available for universities and tertiary referral hospitals. Every country reporting on the status of its health services (especially academic aspects), records decreasing resources in the face of growing demands from their communities.

In the United Kingdom, medical schools are funded jointly by the National Health Service and the Universities Funding Council. A new system introduced relatively recently, called the Service Increment for Teaching (and Research) or SIFTR has led to renewed scrutiny and interest in the allocation of teaching time and quality assurance[23]. New and established institutions are being seriously threatened by financial stringency, cutbacks and possible closure. These circumstances are reflected in reports concerning the future of teaching hospitals in the United Kingdom, especially in the large metropolitan areas (Flowers Report and Tomlinson Report 1992[24]). The entire spectrum of higher education in that country is being forced to look at quality assurance and accountability very thoroughly[25], with "audit" becoming almost a preoccupation with hospital management.

Medical schools are also acutely aware of the need to measure teaching quality, and this has been accentuated by the Kings Fund Centre publication that states "The current unprecedented interest in staff development in medical schools in the UK is partly a response to internal and external pressures to demonstrate the quality of teaching. In addition, staff development is beginning to be recognised as a necessary prerequisite for

effective curriculum change"[26]. It would be unwise for South African medical schools to ignore this trend.

The relationship between medical education, politics and finance is epitomised in two articles appearing in **Medical Education** in 1992, by Louis W Sullivan, the American Secretary for Health and Human Sciences[27-28]. He quotes the cost of health care in the United States of America in 1990 as being $660 billion, with an estimated rise to $1,5 trillion by the year 2000. His plea is for the training of "renaissance health professionals" with the emphasis on life-long learning and the acquisition of new skills. He concludes "We must continue your development as scholars, utilise effective communication skills, become partners in national and international efforts to provide high-quality services, and contain health care costs, and help our citizens create a healthier society".

Clearly the political message to save money through preventative medicine is being sent to the academics and similar calls are being made in many countries, including South Africa.

In Israel an experiment was carried out to see if this process of interaction between politics and medical education could work in an unusual way. In a fascinating book by Porter and Seidelman, entitled "The Politics of Reform in Medical Education and Health Services: The Negev Project"[29], they describe how the Beer-Sheva project at Ben Gurion University of the Negev attempted to produce graduates who would be capable and content to work in their local community. The established medical schools in that country produced doctors who were far more comfortable in the hospital environment and this resulted in an imbalance between urban and rural practitioner services. The experiment was an extreme example of synergism where the Dean of the Faculty was also the Director of Hospital Services, but the attempt by medical education to reform the political system was a failure. The crucial factors in the

breakdown were that the hospital medical staff were not sufficiently committed to be role models to the medical students, and the community had not become a partner in the project.

In an editorial in **Medical Education**[30], the subject is discussed, and it is concluded that "this tragic failure - the disjunction between university and health services - can be seen happening now in numerous other countries in Europe and elsewhere around the world".

AFRICAN PERSPECTIVE

> "The state of medical education, the developing countries, and the deteriorating state of both health services and medical schools in many Third World countries certainly require collegian, practical support from the developed countries"
>
> - Walton[31]

Although the parlous state of health services and medical education in countries that used to be behind the Iron Curtain has now been exposed, the situation is probably worse in Sub-Saharan Africa. Political instability, wars, famine, droughts and the rise of the number of AIDS victims have made this part of the world extremely dependent on health care. These factors have required a political response, and this has come in the form of the creation of new medical schools and the establishment of previously unacceptable links with South Africa. The major political metamorphosis in South Africa will have repercussions in terms of trade, and this would naturally include pharmaceutical enterprises, together with the collapse of the Soviet Union funding and support to Africa.

Dialogue has now begun between African states and centres of excellence in South Africa. For example, Malawian students are being admitted in limited numbers to the pre-clinical years at UCT and exchanges between the Dean and senior members of Malawian medical faculties are suggesting closer co-operation. Each African country is looking to its particular needs in the most appropriate way, with primary health care[32] and future planning high on the agenda[33]. Dent[34] describes the situation pertaining in Malawi, and poses the question "Perhaps this is the time for a little more encouragement from the south?". Because of political transition, the window of opportunity is opening for medical education expansion in South Africa.

In the African context, South Africa has much to contribute in terms of educational reform, especially at medical and tertiary levels. Sub-Saharan Africa has negative factors mitigating against its rapid advancement in health care, development and medical education. There are deficiencies in facilities, finance and function. Many countries suffer from political upheaval and remain desperately poor, despite natural resources. Politics and drought cause the mass migration of large numbers of refugees with AIDS, resurgent tuberculosis, resistant malaria and cholera aggravating the situation.

The political high road is inextricably bound to education. Winning nations, according to Sunter[35] have moved purposefully in directions towards energetic educational programmes. Walton[31] describes the creation of eight new medical schools in Africa as evidence of the commitment that governments have towards this important component of health care. However, the African situation is by no means straightforward and the lack of experience, training, infrastructure and finance urgently require the allocation of funds and skills. The problem is encapsulated by Dent[34], as follows:

> "Lack of money and foreign exchange are a gargantuan problem in Malawi, and this is compounded by probable mismanagement and lack of financial planning,

factors that might make any African state, including South Africa, give a complicit shrug."

Health is now a major political issue. Medical education must have a strong base and co-ordinated responses if suggestions such as those made in the Steinmetz Committee[36] recommendations are to be resisted.

"Academic hospitals and medical training facilities be scaled down to provide for the needs of South Africa only .... that the number of South African academic hospitals be reduced from seven to four".

The World Federation for Medical Education Second International Conference in 1993 has plans for regional conferences to implement its recommendations[37]. These are to be worldwide and initiated in six regions simultaneously in 1994. Africa is one of these six regions.

Should not South Africa be positioning itself to be participate in such initiatives?

SOUTH AFRICAN POLITICS

Politics is a subject which could comfortably be avoided because of the unpredictable nature of the present situation. This dissertation is being written in 1993/4 when watershed political changes are under discussion and being put into practice.

There is very likely to be a major change in the government of this country in the next year and this may deter people from forward planning or decision-making on the grounds that whatever is decided may be reversed or changed because of political pressures in the near future. This attitude is unhelpful and certainly any enlightened government or non-governmental organisation (NGO) would be wise to encourage the best medical schools' continued commitment to internationally recognised excellence.

What is needed is evidence to ensure that the University of Cape Town Medical School and the Groote Schuur Hospital (or Academic Health Centre) are **seen to be maintaining** the highest possible standards of medical education, documenting progress in flexibility and publishing research to substantiate academic endeavour in this field.

Responsiveness to the anticipated demand for increased Black African representation at all levels of medical education is not simple political expediency, but practical politics to achieve a congruency between the racial distribution of the medical fraternity and the population at large. The Academic Planning Committee of UCT has already shown itself sensitive to the situation in a statement to the Medical Faculty, as follows:

> "(that) the Faculty of Medicine undertake a comprehensive study of academically relevant data concerning all students admitted to the MBChB programme since 1972, in which success rates are related to entrance qualifications, in order to provide an empirical basis for debating alterations to admission policies that will result in the graduating MBChB class more closely reflecting the South African demographic reality and which will be regarded as fair and equitable;"[38].

This is a clear request for audit of academic performance to guide student demographic decisions. If this has been done, the results are certainly not common knowledge. The ability to respond to change will be a smart attribute to display and intransigence will probably, at best, go unrewarded. If there are major changes in the name of cost-saving, then the retention of the academically strongest medical schools would be sensible.

In anticipating future events, there are few pertinent role models available and the closest one, that of Zimbabwe post-independence, is extremely unattractive. From that country's experience, it appears that the first casualty of increased political disruption, is information. The deterioration of academic medicine, post-1980 in Zimbabwe, has

still to be rectified and serious concerns about all aspects of post-secondary education in that country have been expressed by Mambo at the "Quality and Equality in Higher Education" congress in Bloemfontein in 1992[39]. Key references are cited as Appendix I. Perhaps medical educationalists can take the lead from their colleagues in the general tertiary education sphere who set up the conference quoted above and a similar exercise organised in April 1993 by the Department of Adult Education and Extra Mural Studies with the Equal Opportunity Research Project at UCT.

The other serious consideration that is being discussed in post-secondary educational circles concerning universities, is that of the accreditation of teachers. Strydom[40] has promoted quality assurance and its precedence in the technikons of South Africa is well-established. Examination of the need for quality assurance has a number of facets which are worthy of consideration:

1. As an academic principle, the questioning of purpose and the re-examination of the status quo should be part of scholastic endeavour.
2. Financial stringency demands cost-effectiveness and efficiency in teaching, and this can only be ensured by objective assessment.
3. It would be prudent to have a standardised assessment system in place, with documented accreditation of good teachers, when serious questions about educationalists' appropriateness and rewards are asked.

A broadly-based group concerned with medical education in this country is the national association that was founded in 1982. The South African Association for Medical Education (SAAME) has as its objectives the maintaining and promoting of standards of enquiry and research into medical education and provides a platform for the dissemination of information on related matters[41]. It is supported by all the Deans of the Medical Faculties in the country and continues to find funding from the pharmaceutical industry, despite these times of financial hardship. The meetings are always well attended, presentations are plentiful, and certainly lively and topical aspects

of medical education are discussed. There have always been a few international visitors, but the political respectability that South Africa is now beginning to enjoy has allowed international experts to more readily accept invitations and the list of names of those recently attending South African conferences has included the Dean of Maastricht Medical School (Professor Arrie van Niewenhuysen Kruseman), Professor Ian Hart from Canada and Professor Chifunbe Chintu from Zambia.

UNIVERSITY OF CAPE TOWN

UCT is a prestigious institution, with a proud community and academic record. Through the apartheid years a strong moral, ethical and political stance was adopted and academic freedom has been one of the cornerstones of its credo. Its attitude towards affirmative action is the way forward to maintaining its tradition of being in the vanguard of social developments.

Equally, the reputation of the University is founded on high academic achievements. The Medical School is in the forefront of these endeavours and it attracts and retains staff of international calibre, as exemplified by clinical and scientific contributions to the world literature. Indeed, a criticism of UCT is that there are too many sub- or super-specialists in the undergraduate teaching ranks. On the other hand, these teachers have contributed to the outstanding theoretical infrastructure on which the students build their clinical acumen which is recognised and seen as one of the strengths of the system. This has had a double edge, in that graduates are sensitised to state of the art techniques, therapies and research and this, coupled with the calibre of student coming through the system, has led to frustration, dissatisfaction and emigration. The question may - and in fact should - be raised as to whether elitist First World, scientifically oriented (export standard) doctors is what the future South Africa needs. If the answer is affirmative, but in limited numbers, then UCT must prove its perceived status as the best theoretical medical school in the country. If it does, indeed, claim such status,

then it will have to be prepared to defend its position and give assurances that its teaching methods and commitment will maintain the quality of the product - at an internationally competitive level.

That will require stringent attention to product, politics and pedagogy. Quality assurance will be required and that will demand increased vigilance.

If it is determined that the graduate product from UCT needs to be less theoretical and scientific, but more pragmatic, then change is going to be required. No less will this new product need to be scrutinised and audit required as UCT competes against all the other seven South African medical schools, in terms of resources and funds.

One of the ways that the Senate of UCT has already responded to this anticipated development has been by instructing the Deans of all faculties to ask Heads of Departments to assess and evaluate undergraduate courses and teachers. Explicit instructions were given and detailed methodology suggested. Although precise details of the exercise are beyond the scope of this dissertation, comments such as "evaluations of all courses in all departments shall be obligatory" signified the seriousness with which the authorities view teaching feedback.

Within the Medical Faculty, the Undergraduate Medical Education Committee and its sub-committee, the Curriculum Evaluation Committee, were instrumental in assisting with the initiation of this exercise. Although all departments of the Medical School eventually responded to this directive, it was clear that no ongoing assessment of staff by student feedback was taking place on a regular basis. The directive was that review was to take place on an annual basis, allowing for comparison and reward or intervention but this has not occurred. It is unclear which departments now solicit feedback on staff performance or satisfaction with each course from their students.

The reasons for this may be that there is insufficient time allocated for people to embark on the exercise, or maybe there is little point in it because there are no rewards for good teaching, or remedial mechanisms to improve the performance of poor teachers. Each department should have a convener of teaching who has time allocated and the expertise to assist in this field. The convener should also be part of a strong inter-disciplinary team to provide back-up and clout to ensure co-operation.

The whole question of quality assurance in the university is a non-issue at the present time. As mentioned previously, Strydom[40] has campaigned vigorously for quality assurance in all post-secondary educational institutions. Kells[42] eloquently supports this view and goes into the implications of quality and equity on an international perspective and looks at how this could affect the South African situation. A more political response from Godden[43] addresses the need for quality assurance in the face of affirmative action of university appointments as well as student acceptances.

This strong movement towards accountability has not yet reverberated loudly in the corridors of the UCT Medical Faculty. Accountability will come and the more prepared the teachers in the faculty are, the less potentially painful this will be.

The one incentive available to teachers at UCT is the University's Distinguished Teacher Award. This is a prized accolade that is available to medical educators, but in competition with the rest of the university. A number of medical teachers have received this award over the years, but its impact remains somewhat remote. If awards for specific achievement in the medical faculty were available, this would be an encouragement. It could also be a spur to obtain regular student feedback and provide healthy competition amongst the many dedicated teachers who at present remain unrecognised and unrewarded.

Audit

> "Research" is concerned with discovering the right thing to do; "Audit" with ensuring it is done right.
>
> - Richard Smith[44]

The definition of "Audit" given above in the medical education context means being accountable for the efficiency and effectiveness of student learning. This is more than the feedback from students or the observation of style and technique of teachers. This latter is the realm of quality assurance and includes such factors as the syllabus and examination or assessment mechanisms.

There is evidence that the problem, at least in the United Kingdom, is being aired and tackled in some subjects[45-46]. Apart from the teachers defining and knowing the facts expected, the standards of skills commanded must be established and form part of each student's assessment.

In the senior years, the measurement of clinical competence demands the evaluation of a number of variables, and examiners require the students to demonstrate basic levels of proficiency in each of these. This understanding should be linked to examiners' "briefing" which is the pre-examination discussion on core knowledge, skills and attitudes expected at the various levels of competence. This attempt to provide standardisation, if linked to structured oral examinations or categorised marking, can improve objectivity.

Major improvements with the use of new types of examinations, including the Objective Structured Clinical Examination (OSCE), simulated patients and scripted orals[47], have also improved clinical assessment[48].

The following possibilities are available to assist the quest for greater standardisation:

- the Objective Structured Clinical Examination;
- examiners' pre-examination meetings or "briefing sessions" to establish norms;
- simulated or standardised patients;
- models and computer-simulated situations;
- structured or semi-structured orals or viva voces;
- observation by external examiners;
- "non-consultative" simultaneous examiner marking.

Measurement of Standards

Much of the measurement of standards revolves around assessment and examination techniques. Objectivity, as discussed, does represent an attempt to remove observer bias and to be fairer on the students. It does not impact directly on external quality assurance. It is essential to have students meet at least minimum standards of competence and, for this, "criterion referenced assessment" is required[49]. Ways of achieving this goal are by internal and external quality assessment. Internal quality assessment can be improved by examiners setting their own standards by "briefings" and the training of junior examiners by pairing them with more experienced colleagues.

External quality assurance is more problematical, but can be attempted in the following ways:

External examiners

It has been convincingly argued by Reynolds[50] that external examiners in post-secondary education do not guarantee academic standards. However, they are widely used in medical education. Their experience and the structured written reports that are demanded by faculties can, at least, supply inter-university references.

Inspectors

Statutory departmental reviews by senior visitors, appointed by the SAMDC, do have a major medical education impact and are required to visit all medical departments on a regular basis.

Inter-University Co-operation

The ease with which information can be exchanged electronically has opened up the possibilities of national or international examination standardisation. This could be through multiple choice question (MCQ) and OSCE station banks. Such initiatives are being explored within disciplines, and are being taken up by the appropriate colleges and councils.

The defining of clear objectives of the examinations themselves serves as an excellent stimulus to clarify thought on what is required of students during the course[51]. It has been apocryphally suggested that it is sufficient to give students the syllabus, which includes examination topics, and leave them to it. This is the antithesis of clinical teaching, and would not ensure any skills- or attitudes-transfer.

There must be teacher input of quality to train, guide and set the example. This will be especially important with the new students as their ability to interact with and respond to the complexity of clinical medicine is not yet proven. This will require research as well as audit. Both will be required of medical educationalists and both must be developed.

Attitude Assessment

A considerably more difficult aspect of evaluation is that of the students' attitudes. Students bring widely varying attitudes to the medical course[52] and these must be respected. They also, however, have to form attitudes towards patients, colleagues and

clinical situations. The formal teaching of ethics can greatly assist in the formulation of standpoints and attitudes and is widely perceived as extremely helpful. Student viewpoints and ethical sensitivities do change during their training[53] and this needs to be appreciated and guided by teachers who themselves are familiar with the mechanisms of making ethical decisions[54].

CONCLUSIONS

There have been calls for change in the direction of medical education in recent years. Such calls are not new, and Huxley[55], Flexner[56] and, in this decade, Fraser[57] have all insisted that new approaches be adopted.

These are political calls by the "collective organism"[58] of educationalists. Those who have delved into the basic structures of medical education in other countries are in no doubt that major improvements, sometimes through fundamental changes, can and should be made.

This does not concern pure pedagogy (student / teacher interaction) but lies with the politics of teaching. It poses the basic question "Are we teaching medical students in the most efficient way?". This question should thread its way through the whole spectrum of medical teaching, from medical students to teachers to medical educationalists, to undergraduate committees, to Faculty Boards, to Dean's Committees and to medical councils.

All the questions that have been raised in this chapter are legitimate and cannot be answered unless the Faculty of Medicine has a medical education unit or a powerful and professional committee that is prepared to take on political issues.

- Should South Africa not be positioning itself to participate in the World Federation of Medical Education initiatives?
- Which medical schools will have the best educational infrastructure for African export?
- Whose responsibility will it be to measure students' and teachers' standards?
- Who is going to lead medical school staff development programmes?
- Who will be supplying the information to ensure that UCT is "seen to be maintaining" medical education excellence?
- What policy, based on academically relevant data, will help shape future student admissions to UCT?

Having raised the questions, the University of Cape Town's response must be to strengthen its undergraduate education commitment accordingly. This must start from teacher recognition within departments and teacher status throughout the medical school. Departmental teaching conveners must be appointed and trained in the educational process. The Undergraduate Medical Education Committee must be strengthened to be seen as a professional group of dedicated people, skilled and willing to tackle these questions. The Faculty Board should debate medical education development. The Deans have already shown willingness to consider new developments and look at alternative programmes. The South African Medical & Dental Council will undoubtedly undergo political change in the near future.

The winds of political change will certainly blow strongly through the corridors of the medical schools in the new South Africa.

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APPENDIX I

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CHAPTER SIX

MEDICAL EDUCATION AT THE UNIVERSITY OF CAPE TOWN

Introduction

History

Undergraduate Education Organisation

Pre-clinical Teaching

Clinical Teaching

The Challenge

Conclusions

References

INTRODUCTION

The purpose of this and subsequent chapters will be to examine the role of the teacher, rather than discussing the product with which the teacher is interacting, or radical change in the environment in which such interaction takes place. This is not to imply that the product cannot, or the environment should not change and, indeed, attention will later be given to these issues and recommendations made in the following chapters.

UCT has a Traditional **predominantly teacher-based** education philosophy. This philosophy may - or may not - reflect the correct place on the continuum of the "teacher-centred versus student-centred" strategies, as described by Harden[1], for the faculty at the present time. What is apparent is the need to assess the existing situation, review how it is being supported, and debate whether newer possibilities are appropriate.

Having presented considerable evidence concerning the need for change in medical education thus far, it is now appropriate to consider how these influences and pressures can best find expression in the Medical Faculty of UCT.

In earlier chapters the resistance to change and the difficulties in implementing such change have been spelled out. Those who teach students, the institutions in which this teaching takes place, and the curriculum have been looked at in terms of their suitability and the need for re-examination. The many innovations in teaching technique as well as the methods and subjects now pertinent, all call into focus the need for developing teachers' skills.

The catalyst of the "educationally disadvantaged" student and the basic questioning of maintenance of standards are important issues that will have to be addressed, especially in the light of the changing political situation.

Apart from students and teachers, the environment in which medical education takes place is highly influential. It has been indicated that most medical schools' learning strategies are either Traditional or Innovative and that, within the Innovative curricula, there are the two aspects of Problem-Based Learning and Community-Orientation.

HISTORY

UCT's Medical School is the oldest in South Africa and was established in 1912. It began with Departments of Anatomy and Physiology following five years of negotiation initiated by Dr E Barnard Fuller who stated in his presidential address to the Cape of Good Hope Branch of the Medical Association :

> "... looking into the future ... I see before me as in a vision a great teaching university arising under the shadow of old Table Mountain, and part of that university is comprised of a well-equipped medical faculty ..."
>
> - Barnard Fuller[2]

The Medical School has always enjoyed a considerable reputation in terms of its undergraduate medical education. Its graduates have distinguished themselves, both at home and abroad, in all aspects of academic endeavour.

Medical alumni hold prominent positions of authority within the University, have had input into political fora which have helped shape medicine in South Africa, and have made important contributions to the high esteem in which the profession is held in this country.

The professorial doyens of the major disciplines appointed in the faculty's formative years were all renowned for their commitment to undergraduate teaching. This legacy has continued and over the last 80 years UCT has produced many fine teachers of national, if not international, repute. This commitment to undergraduate, postgraduate and continuing medical education is a source of great pride, and it was no coincidence that much of the impetus for the establishment of The South African Association for Medical Education (SAAME) came from Cape Town with the incumbent Dean, Professor David Mackenzie, and Professor Ralph Kirsch prominent figures in its inception in 1982. The first meeting of the Association was held on the UCT medical campus, as well as the most recent meeting in 1991, with Professor Noel Entwistle as the guest of honour.

UNDERGRADUATE EDUCATION ORGANISATION

The medical school does not have a department or unit of medical education, but rather relies on its statutory Undergraduate Medical Education Committee (UMEC) to advise the Dean, initiate events and oversee all matters pertaining to the promotion and development of undergraduate medical education.

The UMEC itself has various sub-committees, as follows :

Clinical Years Committee
Curriculum Evaluation Committee
Examinations Committee
Pre-Clinical Years Committee

Apart from these standing committees with their specific remits, the UMEC has an obligation to report on a regular basis to the Faculty Board. Other matters dealt with by the UMEC and the Dean's Office are:

1. The hosting of visits by eminent educationalists such as:

   Ron Harden - 1982
   Neil McIntyre - 1984
   Ken Cox - 1985
   David Newble - 1988
   Geoff Norman - 1988
   George Irwin - 1989
   David Purdie - 1988 & 1990
   Rosalie Ber - 1992
   Noel Entwistle - 1991
   Laurie Geffen - 1993
   Ian Hart - 1993
   Leon Fine - 1993

   with plans for other experts to visit in the near future (Jennifer Blake - 1994, Colin Coles and Karl Smith - 1995).

2. The UMEC is also the vehicle for discussion, debate and ad hoc functions, such as resolving teaching crises as they occur, responding to university directives and implementing changes in policy. Examples of matters which have been dealt with are:

   Student Advice Service restructuring
   The incorporation of Xhosa language as a subject in the curriculum
   The introduction of an elective subject in first year

The re-arrangement of First and Second Year as a continuum (the Belonje Proposals - Mont Fleur 1986)

The review of the Third Year teaching - both content and method (the Tiltman Proposals - Mont Fleur 1990)

The Faculty Review by the Academic Planning Committee (Gordon's Bay Retreat 1992)

"Considering Anatomy" Conference (Constantia 1992)

3. Another function of the committee is the promotion of teacher development. It was recognised that there is little opportunity, other than attending SAAME meetings, for faculty members to learn about teaching techniques or innovations in medical education. Medical teachers generally welcome the chance to improve their skills and discuss teaching, formally or informally, especially on an inter-disciplinary basis[3]. To provide such a forum, the initiative was taken to create the "Teach-In-For-Teachers" (**TIFT**) which would allow teachers from the pre-clinical and clinical years, as well as from paramedical departments, to learn about undergraduate teaching. This event, first held in 1986, has gone from strength to strength, is well-received by the medical fraternity, and is often upheld by the university authorities as an example to other faculties. The history of its development is recounted in the following chapter.

PRE-CLINICAL TEACHING

The first three years of the UCT Medical Faculty's 6-year MBChB degree course are similar to those in most western Traditional medical faculties. Students are taught the basic sciences, then normal structure and function followed by the abnormal, before entering the ambit of diagnostic and therapeutic medicine in the clinical years.

First Year

The first year content has moved progressively away from "pure science" to the applied and biomedical sciences. With this trend has come the incorporation of Anatomy & Cell Biology into the Physics course, and Medical Biochemistry into the organic component of the Chemistry course. The inclusion of an elective subject has allowed students to experience a broader tertiary education without sacrificing time, as this is built into the first year schedule.

The teaching in First Year remains firmly set in the didactic mould, with lectures as the medium of instruction. There is little horizontal integration of subjects and patient contact is extremely limited. The recent acceptance of some Primary Health Care (PHC) input into the Human Biology course has raised hopes of an improved community interaction and the recognition of the importance of the behavioural sciences will hopefully provide impetus for early clinical interaction.

The following formidable problems remain, mitigating against significant change to a more relevant introductory year to Medicine:

Physical Separation

First year students study on the general university campus - physically separated from the medical school which is adjacent to the teaching hospital. The Science Faculty, responsible for Physics and Chemistry teaching, cannot realistically provide staff and laboratory facilities on the medical campus and the elective courses are likewise taught exclusively on the main campus. Some Anatomy lecturers do venture from medical school to teach where the students are, but there is no central area where first year students can gather and feel part of the medical fraternity.

Hospital and Community Contact

The geographical separation from both the teaching hospital and the community health centres precludes students being drawn into relevant basic patient contact programmes. Positive reports from Cade[4] in England and Orbell & Abraham[5] in Scotland cannot be easily transposed to the local situation given the configuration of resources.

Balkanisation

Until recent years there has been a woeful lack of discussion and planning between the course co-ordinators of the first year subjects. Vertical integration with clinical medicine was even less evident and motivation of students by means of the relevance of the syllabus was virtually non-existent. With enlightenment and active promotion of medically important aspects of the material, matters have improved but much remains to be achieved.

The teachers are the people who need to be educated as to the aspects of their subjects that have connection with clinical practice and imaginative techniques with creative situations need exploration. If PBL seems too *avant garde*, then at least examples of the relevance of the material need accentuation.

Staff

Staff, in terms of numbers and educational expertise, are lacking. Expediency dictates that large classes are the order of the day, with small group teaching or tutorials generally not possible in the first year subjects.

In keeping with most university appointments, the teachers are not chosen for their instructive talents[6]. The general university Teaching Methods Unit does offer teaching development courses, but there is no data as to which, if any, of

the first year medicine teachers have attended such interventions - nor how successful they have been.

Co-ordination

Although there is a pre-clinical years committee that is responsible for first, second and third year, it meets intermittently. It is more concerned with timetabling, venues and co-ordination than educational strategies, the learning / teaching process, student motivation or staff development. These matters do not seem to be priorities.

Again, the push from PHC and the Medical Academic Support Programme is improving matters, but fundamental questions need to be asked, such as :

- Would Problem-Based Learning be a more efficient or motivating strategy?
- Is Co-operative Learning a possibility?
- Can patient contact, interviewing and basic examining skills be taught and examined in year one?
- What is the student motivation for medicine like at the beginning **and the end** of first year?

There have also been no surveys of the satisfaction of either staff or students of the first year medicine at UCT. The conducting of investigations along similar lines at the Universities of Natal, Pretoria and the Witwatersrand has demonstrated large measures of dissatisfaction and considerable willingness to consider alternatives on behalf of the staff and students.

Perhaps if the teachers at UCT were more *au fait* with developments in South Africa and abroad and had more knowledge of the advantages of PBL and small-group

teaching, they might initiate moves to elucidate some of the preceding issues which are the first step to solving the difficulties.

There remains insufficient information about teaching methodologies and student expectations. It is entirely possible that the unhappy situations described in the United Kingdom and the United States of America concerning first year education, can be extrapolated to the UCT situation[7-8]. Without the intervention of university political moves to renew the overall concepts and strategies, the impasse will remain. There are no incentives for hard-pressed first year teachers to research their educational achievements. Without their being informed about the innovations described in the previous section, there will be no progress towards true university education. It is incumbent on the university authorities to provide the infrastructure, time and staff to free up the pedagogic log jam. Perhaps the philosophical ideal of educational quality theory as presented by Pirsig in his book "Zen and the Art of Motor Cycle Maintenance"[9] is too high an ideal but, at least, we should move from what Postman & Weingartner[10] describe in their book entitled "Teaching as a Subversive Activity". There needs to be empowerment of both teachers and students.

Second Year and Third Year

The vast factual requirements of Anatomy and Physiology during the second year have partly been eased, not by reducing the volume of the syllabi but by spreading the load into first year. There are various improvements in the second year courses over those of the first year. Students work in small groups with Anatomy dissection, Physiology tutorials and Biochemistry practicals. The camaraderie of being at the medical school and the "rites of passage"[11] of the Anatomy dissecting room at least allow strong identification with the faculty and the practice of medicine.

Recent advances in increasing the relevance of the teaching methodology by using videos of endoscopic procedures, imaging techniques and creative physiological

teaching methods have all improved the interest and relevance of the courses[12]. Nevertheless a great deal needs to be done in terms of integrating clinical practice by either the introduction of problem-oriented approaches or visits to the hospital or other suitable institutions.

The teaching of the pathologies in the third year is again an improvement on the relatively "distant" second year experience. Although still lecture based, recent revamping of the whole year has provided integration, more small group teaching, and a keen awareness of the importance of clinical material to enhance enthusiasm.

The broadening of the base of teaching in third year has come to include Human Behaviour, Clinical Methods and the African language, Xhosa. These extras, together with the major disciplines of Medical Microbiology, Anatomical Pathology and Chemical Pathology, again force students to concentrate on the assimilation of vast quantities of factual detail that is demotivating.

THE CLINICAL YEARS

In the fourth year, students begin the three years of clinical instruction, by means of a discipline-based block structure with whole class lectures running throughout the years.

Considerable use is also made of small group teaching with tutorials, bedside instruction, ward rounds and numerous other activities giving the student the opportunity for personalised tuition. There is a rapid change from dualistic learning to true relativistic concepts, with the acceptance of problem-solving, ambiguity and individual patient biological variation being essential.

Learning, in the clinical setting, **can** take place by repetition and experience without any teacher contribution. A motivated "self starter" student could develop skills and acquire knowledge and attitudes independent of classical or traditional teaching input. Provision of facilities, with a teacher available, is part of self-directed, co-operative and Problem-Based Learning. This moves the student towards enquiring, understanding and a deep approach. The art of clinical teaching is to encourage this notion, while at the same time facilitating skills and providing role models.

Price[13] makes a major contribution in this area with his definition of six criteria on which to judge effective clinical teaching. His subsequent reduction and refinement of this model (personal communication) further traces the framework into which clinical learning fits. According to him, Ausubel[14] purports the intellectually interactive process of learning as the acquisition of new material that is congruent with what is already known. This redefines conceptual maps or structures and this is encouraged by motivation. Knowles[15] argues that this relies heavily on intellectual justification for the incorporation of new knowledge. Balla[16] describes the complexity of teaching in the clinical environment, which includes history taking, physical examination, special investigation selection, deriving differential diagnoses, treatment, explanation and counselling.

The difference between quantitative and qualitative teaching and learning, as described by Biggs[17], links with the surface and deep approaches of the classic works of Marton & Saljo[18-19] with the assertion that reproduction of detail committed to memory, is far less efficient than understanding arrived at through discussion and reflection. Price[13] summarises the process, as follows:

> "Clinical teaching and learning must be an intellectually challenging experience whereby students, through extensive interactive teaching, are able to gain conceptual understanding".

The development of clinical **teaching** skills must enhance interactive conceptual learning. These skills include :

Listening

Questioning

Explaining

Demonstrating

Reporting

Reviewing

Although in the ambit of communication, the skills of interviewing or consulting and counselling do call for specific training, and have been referred to in the chapter on "Innovation in Medical Education".

THE CHALLENGE

> Learning does not require teaching
>
> Does teaching cause learning?
>
> \- Purdie[20]

The task of clinical teaching is daunting in as much as the acquisition of knowledge has to be coupled with behavioural adaptation and skills development. These are considerable challenges and must be balanced against the presently minor incentives, militating against research work in this field, and clear guidelines until recently have been lacking[13 17].

Those wishing to improve their teaching skills do not find assistance readily available, and quality assurance in this area is dubious. Formal medical education departments, units or centres are scarce, with only two universities in the United Kingdom (Cardiff

and Dundee) offering degree or diploma courses, as well as intermittent "topic" courses. The University of New South Wales in Australia offers similar facilities. Many universities have centres or units for post-secondary educational development and, in some cases, specifically for medical education. There is, however, no uniformity, standard or accepted commitment to providing resources for teacher training and development.

In South Africa there are eight academic hospitals, each with different medical education facilities. Some have formal teaching units or chairs of medical education, whereas others have opted for committees looking at undergraduate teaching, with input from general university sources. There is some co-ordination of effort and enthusiasm from SAAME and its meetings have frequently had sponsored visitors who tour the various medical schools providing information, input and inspiration.

Biggs[21] identifies the difficulties facing the promotion of medical education in medical faculties, and argues for the appointment of a Faculty Education Officer, plus the infrastructure in which teaching can generally be improved. His succinct resume of the problem is worth quoting.

> "The increasing demands upon staff of a medical school, the expanding administrative tasks, the growing committee load, all in the face of diminishing resources, impact not only on the time staff have for teaching, but also upon their willingness to contribute to the long-term educational planning and research."

Each individual faculty's response to medical education demands will depend on their satisfaction with the system that exists, and on how future challenges are seen. These challenges are eptitomised by the "educationally disadvantaged" students, revised expectations, the possibility of greatly increased numbers of students, and the reality

of rumours that the numbers of academic hospitals in South Africa will be reduced from eight to four[22].

It is of interest to note that the newest medical school in Southern Africa, that at the University of Transkei (UNITRA) has an Innovative, Problem-Based Learning, Community-Oriented curriculum. Others are following suit, or are seriously considering doing so. The University of Natal Medical School has committed itself to a Problem-Based Learning and Community-Oriented educational strategy which is to be implemented in first year in 1995. The University of Pretoria is actively looking at Innovative options. There is willingness to look at Community-based learning at the University of the Witwatersrand[23], and UCT is surveying its commitment to learning in the community.

The question of whether it is appropriate to train exclusively First World doctors for South Africa is beyond the scope of this dissertation. It will be the politicians who will decide the continuation or otherwise of the existing medical schools. The concept of a second tier or "barefoot doctors" or complementary health care professionals has considerable merit. What is in question is the need for the existing (or surviving) First World medical schools to modernise their teaching. Every report from the leading countries in western medicine has seriously criticised the Traditional medical school model. The Traditional curriculum does not stand up to scrutiny in the light of present day knowledge of the adult learning process. It is simply ignorance of this knowledge which stops much needed reviews from taking place.

If teachers were educated about teaching, they might be prepared to look at the political and pedagogical aspects of medical education. They might revise their ideas about what they want to produce and possibly stop conducting their lectures, seminars and tutorials in a paternalistic way. They would probably question the structure and strategy of their medical school and challenge the Traditional model and raise

questions of obsolescence. There would be no need for "top down" coercion to change - it may well be spontaneous.

Regrettably, this does not appear to be how things work. Teachers do not spontaneously seek out educational instruction, nor do they monitor their achievements. There does require to be impetus created by authorities. If this is not forthcoming, the guess is that matters will remain much the same until serious problems (like vast failure rates or extrinsic intervention) intrude and the faculty is jolted from complacency.

Results seem the same year after year. There are no objective criteria proving that for all the advances in medical science, we are producing better graduates. There is little application of clinical trial methodology to medical education. Structured orals, norm referenced assessment, controlled (simulated) patients in clinical situations and reliable (reproducible) valid tests of clinical competence still remain unpopular intruders to most clinicians involved in student assessment.

The application of rigorous scientific thought to the discipline of Medical Education is overdue. Which medical school will be the first to think the problem through, see the window of opportunity, and take the lead in establishing a Centre for Medical Education that will serve this country and the continent?

CONCLUSIONS

UCT has a proud history of medical education excellence. However, the price of such status is vigilance. The UCT Medical School has to look carefully at its undergraduate education to see if it is in shape to meet the present demands of the competitive academic world on which it operates in all other spheres.

Its preeminence in research, clinical care, infrastructure and administrative leadership are unquestioned. What will its rating be in undergraduate education at the turn of the century?

Not only do present educational needs, techniques and strategies require consideration, but future adaptability and certainly the willingness to change are necessary. The complexity of medical education is apparent and the UCT response is reflected in this and the next chapter. Innovative ways of coping with change are being researched by other medical schools who face very similar problems to those at UCT.

The lack of local teaching research is evident and the UCT contribution remains inadequate. The window of opportunity is now opening with the new student demography and potential new strategies. UCT teachers need to be given time, opportunity and encouragement to be educated in both political and pedagogical pathways of medical education.

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CHAPTER SEVEN

TEACHER DEVELOPMENT

Introduction

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INTRODUCTION

Teachers of any discipline need guidelines within which they must work, the skills to pass on their knowledge, the enthusiasm to inspire their pupils and motivation to maintain vitality and awareness of current trends. Applying these criteria to the realm of medical education, the task seems formidable as little time is allocated to the teachers for them to pursue any of these important touchstones that are prerequisites to successful education.

The guidelines are the objectives, constraints and policies defining their work and are called the **extrinsic factors**, being determined by the administrators or medical education politicians.

The rank and file teachers working in a medical school contribute the style and techniques that constitute the **intrinsic factors** as experienced by their students.

The differentiation of these two aspects of medical education is important and deserves elucidation. The University of Cape Town (UCT) Medical Faculty gives shape to the extrinsic factors through its Dean, the Faculty Board and the Undergraduate Medical Education Committee (UMEC).

The intrinsic factors receive less attention, but are also addressed in the latter committee, and one of the means whereby this has found expression has been in the instigation of the **Teach-In-For-Teachers (TIFT)**. This has become an annual event which promotes teaching, knowledge, skills and, probably more importantly, attempts to alter attitudes positively towards teaching in the busy academic lives of clinicians, researchers and administrators.

This initiative is now firmly ensconced in the academic calendar of UCT Medical School, and its origin and development are reported in this chapter. The venture has elicited considerable interest from within the faculty, the university and other teaching institutions.

POLITICS AND PEDAGOGY

Staff development is a process whereby the ability of staff to perform their work roles is enhanced[1]. This definition does not refer to the content or teaching strategy of a particular medical school. The subjects, their content, the depth, focus and detail in which they are studied are very different from how they are learnt or taught. The curriculum of the MBChB degree course consists of different disciplines, each with its own syllabus. By common usage, these are referred to as the "curriculum" of each subject.

The teaching strategy is the philosophy of the medical school, as to how the defined knowledge, skills and attitudes are acquired by the students. The broadest categories of Traditional and Innovative strategies are decided by a given school's policy.

Further down the line are the teachers' skills themselves. The skills required are, to a large extent, dictated by the strategies in place. For example, lecturing skills are of minor importance in a PBL curriculum, whereas they are vital in a Traditional school.

Most teachers, especially at Traditional schools, have had no training in teaching. They do their best in practicals, lectures, tutorials and ward rounds. They leave the complexities of policy and curriculum to "others". They understand little of potential changes in pedagogic strategies, adult learning theory, assessment techniques, the ramifications of student selection or the development of core curricula with selectives.

To assist in delineating the differences between the general teacher and the specialist teacher ("the others"), it is useful to divide the subject into two separate but overlapping arenas - those of politics and pedagogy.

Politics

Involvement in medical politics is a daunting task. The structures of the statutory bodies governing what should be taught, the regimented divisions of disciplines and years, the set curriculum and the ritual of the examination process all seem immovable obstacles and insurmountable hurdles. These are all factors beyond the influence of any individual and provide negative impressions to those seeking medical educational development by change.

The medical education philosophy of each medical school is loosely called "the teaching programme" or "curriculum", but is possibly better defined as the "intellectual domain", as described by Bloom[2]. A number of factors determine the makeup of the curriculum which can, in turn, govern the type of education that occurs. In the case of UCT, the following factors impinge on the curriculum structure.

The statutory body in charge of undergraduate education, the South African Medical & Dental Council (SAMDC) is the controlling body responsible for the implementation of the legislature concerning the teaching and certification of medical students. The Parliamentary Act governing this aspect of health matters is wisely written in broad terms and there is a considerable degree of latitude afforded each university to take responsibility for the mechanisms whereby their charges are taught and examined. It would be undesirable, but not impossible, for a future Government to be more prescriptive in defining the attributes of new MBChB graduates.

The university, its ethos, the "type of institution" and the members of faculty all impinge on the curriculum in terms of its scientific, intellectual and pragmatic nature.

These factors are all extrinsic to the actual student / teacher interaction but can influence its technique and style. Before looking at the circumstances whereby this occurs, it would be helpful to define what Hart (personal communication) has called "political factors". These are the levels of macro influence that shape the philosophy and curriculum of any medical faculty. They have been otherwise described as "extrinsic", "governing" or "curricula" and can be depicted as the background against which teaching takes place at an undergraduate level.

The way these political factors can directly influence teaching is by radical policy shifts, such as the changing from a Traditional to an Innovative teaching strategy. Such a fundamental change would require considerable support to bring about an attitudinal change to a student-centred teaching mode.

Other examples of political changes that could influence the teaching mode are policy decisions on the qualities of the desired graduate. Much agonising takes place in medical education circles concerning the "end product". Definitions as to "what we want to produce" can be anywhere on the spectrum from a barefoot doctor, primary care health professional, undifferentiated iatroblast, general practitioner, empathetic life-long learner, academician, sub-specialist, to medical scientist. Such decisions impact on the curriculum, the duration of each discipline's share of the allocated time, but less on **how** teaching takes place.

The internal politics at UCT Medical School have had a profound influence on the development of teachers and teaching. The monolithic structure of the major disciplines has been built up by founding professors wishing to establish their specialities within the medical school. These doyens were people who led by their forceful personalities, whose power and influence were enhanced by the explosions of factual knowledge in their subjects, and whose word on medical education was law.

The number of patient referrals to the teaching hospitals (to take advantage of specific areas of expertise), plus the misdirected flood of routine cases to Groote Schuur Hospital, gave rise to huge student learning opportunityies, but subsequently resulted in sub-specialisation and research possibilities that directed attention away from undergraduate education.

Departments grew in terms of staff numbers, complexity, research output and postgraduate importance, but not because of an increased undergraduate teaching commitment.

The UCT / GSH Academic Centre has changed its emphasis from a medical school renowned for its student teaching to an immensely powerful postgraduate, technological, research and service centre. As such it attracts academics, scientists and people of intellectual endeavour, while less importance is attached to generalist medicine and undergraduate teaching. The size of research grants, the acceptance of "Research Unit" status, publications and the holding of conferences or refresher courses all carry more emphasis than basic medical education.

The immense size of departments has spawned a cottage industry of administrators whose skills are at least as, if not more, important than teaching ability when promotional assessment is made.

These dynamics of medical school politics are not wrong - on the contrary, they have given UCT / GSH an unprecedented status, nationally and internationally. However, there has been attracted a disproportionate slice of the Provincial health budget to this tertiary referral centre, which is now being sharply scrutinised.

The importance of these developments has been that teaching has not retained its priority and has, therefore, not been used as an argument to retain staff and funding to

any great degree. The reputation of UCT / GSH has attracted the "brightest and best" in terms of student applicants. These pupils make excellent learners and the vibrant academic environment and ongoing wealth of patient material has continued to produce graduates of exceptional quality, without much effort invested in nurturing the undergraduate teaching process.

Staff development is not about getting every teacher involved in these political manoeuverings. However, it does require that certain people are chosen, educated, recognised and rewarded for this important role in medical education.

Pedagogy

Pedagogy is defined as the principles, practice or profession of teaching[3]. It is taken here to have the additional meaning of the process and interaction taking place between the student and the teacher.

This process has been described as incorporating certain intrinsic factors. The intrinsic factors pertinent here are the teaching method (not strategy), the techniques, style and attitude of the teacher. Together with the examinations and assessments, this sphere of interaction will truly dictate whether surface, strategic or deep-learning occurs. This should be the focus of staff development and is the basic area where energy and effort should be directed to improve teaching.

WHAT IS AVAILABLE?

Some medical faculties have courses that teachers are expected to attend at the beginning of their careers, whereas other make this a mandatory commitment. Regrettably, many others have no such voluntary or obligatory training and the result is that medical students are taught, in the vast majority of cases, by people having little or no formal educational instruction.

In the United Kingdom, there has been a considerable upswing in interest about staff development. This has found expression in the co-ordination of initiatives by the Kings Fund Centre, culminating in a conference in 1992. The report[1] makes entertaining and insightful reading and the following quotes provide a flavour of proceedings:

Page v	"Until recently, few medical teachers were expected to undergo any educational training, but fortunately this situation is rapidly changing."
Page 1	"There is currently an unprecedented interest in staff development in medical schools in the UK, stimulated in the main by internal and external pressure to demonstrate the quality of teaching."
Page 6	"The tradition of staff development in the past has been one of concern for individual professional development without reference to curriculum, departmental or institutional priorities and needs."
Page 33	"Universities are perhaps in the greatest period of change ever. Over the past decade and more we have suffered severe financial cutbacks and greater intervention by government and its agencies and funding is becoming ever more tied to performance."
Page 50	"The General Medical Council has recommended that every medical trainee should be attached to an educational supervisor, normally that person's consultant who has received training in educational methods ..."
Page 62	"It took me nearly 20 years to realise that just researching into medical education ... and publishing the results was insufficient ... to induce developments and change."

The report concludes by summarising the main difficulties in effecting change through staff development and suggests some ways in which these can be tackled at an institutional level. The **effectiveness** of their initiatives is rightly questioned and the situation in South Africa is probably analogous.

Some disciplines have attempted to redress the situation by providing in-house workshops, nationally[4] or internationally, as epitomised by the Obstetricians and Gynaecologists with the Purdie Workshops initiated in 1986[5].

Other international conferences and meetings are described in the chapter entitled "A Subject Whose Time Has Come". The closer co-operation with sub-Saharan Africa in terms of post-secondary education in general, and medical education in particular, might give impetus to the concept of medical teacher training courses being provided by South Africa. This would be more convenient, appropriate and less expensive than those available abroad.

Locally the UMEC initiated and promoted a staff development day - **TIFT** - and this event is now a popular fixture in the academic calendar of the UCT Medical Faculty. Its origin and development is reported here. It has elicited considerable interest from within the faculty, the university and other teaching institutions. It was first held in 1986 and there were no specific guidelines or restrictions as to the format of the day, and responsibility for its organisation was given to the author.

THE TEACH-IN-FOR-TEACHERS

What follows is a resume of the first **Teach-In-For-Teachers** in the belief that this may be of value to others wishing to embark on a similar process. The subsequent maturation and development, from 1986 to 1993 is attached as Appendix I to this Chapter, with 1991 being singled out and reported in the following chapter.

TIME

UCT has an annual "Sax Appeal Day" (a corruption of "SACS" - South African College School - which was historically incorporated into the University of Cape Town in 1918[6]), when the students are not expected to attend lectures or any teaching activities, but extort money from the good citizens of Cape Town by the sale of a magazine for the promotion of charitable activities under the auspices of the University. Specifically, this is one of the methods of funding the Students Health & Welfare Centres Organisation (SHAWCO) which is a service institution supported by students and providing considerable educational, medical and other assistance to the under-privileged communities of the Western Cape.

As no students would be available for instruction and the teachers, therefore, relatively free, this day was chosen for the **TIFT** and participants asked to make themselves available for the whole day.

FINANCE

Sponsorship was found from a drug company (Berlimed (Pty) Ltd) who assisted with the registration desk, provided name tags, pens and notepaper, and also paid for teas, lunch and a cocktail party.Although not essential, support from pharmaceutical firms or other sources is a major advantage. Not only does it give impetus with more organising involvement, but it makes it more attractive to participants to have the food paid for, and usually the associated advertising ensures profile in local press.

The costs involved depend on the ambitiousness of the convenor and the level at which the exercise is pitched. In 1986 the total financial outlay was R2000 which rose to R5000 by 1992. The main expenditure items are food and refreshments, supplied by the in-house catering service. The after-party is also a significant expense, but again depends on the style desired and on the sponsoring company's wish for publicity.

The sponsors faithfully invested in the project over seven years and their contribution was, and is gratefully acknowledged. The event had become known as the **Berlimed Teach-In-For-Teachers**. For economic reasons they withdrew after the 1992 event and the search for new assistance brought unexpected results. These are described in the 1993 section of Appendix I.

DELEGATES

The initial notification about the event was a letter from the Dean to all Heads of Departments (HODs) informing them of the date, the purpose of the day, and asking them for their support. This participation from the professoriat was in the form of selecting delegates, allowing them to be present for the whole day, and attending the Plenary Session themselves. The letter also said that the convenor would be writing to them with details and requested their co-operation with him.

The convenor's letter gave further details and explained the overall number (eighty) and the specific number of places allocated to each department which was proportional to their teaching staff numbers. The HOD was asked to nominate people or call for volunteers, and there was no stipulation as to seniority or teaching ability of those chosen.

It was made clear that departmental heads could attend as whole day participants or join the Plenary Session and the concluding social event as they wished. Medical students were invited in small numbers (six) through their representative body, the Medical Faculty Students' Council.

DELEGATE BRIEFING

The original letter from the Dean to HODs was sent out two months in advance and informed them of the subjects that would be dealt with, and gave an outline of the format of the day. This was followed fairly promptly by the convenor's letter.

Once the responses from the HODs were received, individual delegate letters were sent out with further information. This told them the date, times, venue, theme, format and their role. No preparation was required of them, other than organising their schedule to be free for the entire day and it was made clear that electronic pagers would not be welcome.

FORMAT

The sequence of events was Registration, a Keynote Address followed by two workshops, lunch, another two workshops and the day ended with a Plenary Session, chaired by the Dean, to which all HODs and various other special guests were invited. The final item was the cocktail party.

SECRETARIAL

The vital secretarial and administrative responsibilities were taken on by Ann Lloyd (Administrative Assistant, Medical Faculty, and UMEC Secretary). This proved to be a crucial factor as the success of the event depends on efficient ongoing organisation, attention to detail and "trouble shooting".

ORGANISATIONAL DETAILS

Co-operation

It is vitally important that any exercise such as the **TIFT** has the approval and support of those in authority in the Faculty. This authority may reside with the Dean, a committee or an education officer. The success of the UCT events has been in no small way due to the close co-operation between the Dean, the Dean's Office, the UMEC and the HODs. It must also be seen to be inter-disciplinary, not confined to the clinical or pre-clinical years, and should include the professions allied to medicine.

Invitations

The number and co-operation of participants is critical. In the case of the UCT **TIFT**, the 80 delegates were issued with invitations after their names had been received from the HODs. This does require careful handling in that larger departments are usually more demanding, whereas smaller departments are often unable to spare the staff. In the UCT experience, there have always been considerably more requests to attend than places available, which has meant turning people away rather than finding "volunteers".

Plenary Session and Social Function

The Plenary Session consisted of a report back and summary of the events of the day, with feedback from the various workshop groups. HODs were able to demonstrate their commitment to medical education by attending this session, as well as learning

about what had transpired during the day. It also afforded them the opportunity to ask questions and join in the social function.

The party is an integral aspect of the exercise in that it creates a rare opportunity for teachers to discuss matters of interest across disciplines, as well as "rounding off" the day in a relaxed atmosphere.

Structure of the Day

The initial three **TIFTs** in 1986, 1987 and 1988 had a fairly consistent format, as follows:

Participants were registered at 09h30 and welcomed at 09h45 by the Dean who handed over to the convenor to explain the sequence of events and introduce the Guest Speaker / Facilitators. An idea of the structure of the programme can be obtained from the "Daily Programme" for each year that appear as Appendices II - IV at the end of this chapter.

Facilitators

The choice of Facilitators is important in that no matter what subjects are tackled in the workshops, there must be someone with experience of workshop technique to allow full participation by all and to ensure that deliberations stay on track.

Most universities have departments or faculties of education within which expertise is available. UCT has the Teaching Methods Unit and the Professional Communication Unit who were keen to be involved and relished the opportunity to provide guidance and instruction on lectures, teaching technique and communication skills.

Workshops

The procedure was for groups of 20 delegates to rotate through four different workshops (two in the morning and two in the afternoon) before reporting back to the Plenary Session on what they had learnt and for the facilitators to give their impressions of the success or otherwise of the day's proceedings. Although it was demanding for those facilitating, it proved an efficient method of allowing a large number of people to be exposed to four different aspects of medical education in one day.

Feedback

The acceptability of the whole exercise was assessed by obtaining feedback in the form of questionnaires requesting specific responses and open comment. These were handed out at the start of the Plenary Session and collected before participants left. An example of the feedback is included as Appendix V.

Specific aspects of individual workshops were reviewed with mini-questionnaires filled in as groups completed each session to assist the facilitators judge their performance. It became apparent over the first three years that, although the "20 people" group was economical in terms of space and organisation, it was not optimal for deriving maximal benefit from the workshop format. To be consistent with the aims of the day - to promote excellence in undergraduate teaching - the size of the groups was subsequently reduced to give delegates more practical involvement in small group learning.

The experience gained in early years was invaluable and the process developed and refined. Ambition became tempered with reality, the pragmatics of organisation realised, people's expectations appreciated and some potent lessons learnt. The details of the organisation are provided in the Appendices, but a flavour is given by presenting the topics addressed and how the event was concluded.

Topics of the Day

There were four separate workshops, through which groups of 20 delegates rotated during the day, as follows:

1. **Self-Directed Learning**

   This was facilitated by Dr David Whittaker who felt strongly that there should be more responsibility taken by the learners for their own education. The session was introduced by a short thought-provoking overview of Innovative medical schools, touching on Problem-Based Learning and suggesting places where such a system could be incorporated into a Traditional medical school. Delegates were then asked to list advantages and disadvantages of this teaching method, discuss them as pairs, and then feed back their deliberations to their group. A rapporteur was appointed to discuss the group's experience at the Plenary Session.

2. **Communication Skills**

   The Professional Communication Unit (PCU) allocated two facilitators who began this session by dividing the group of 20 into two groups of 10. Each sub-group was then asked to describe and discuss the points of communication skills that were most important to them in their undergraduate teaching. The two sub-groups were re-united for a consensus/wind-up conclusion, before choosing a rapporteur to present their findings at the Plenary Session.

3. **Small Group Teaching**

   Each group of 20 was asked by the facilitator (the author) to break into smaller groups and list only the advantages of this teaching method. Using the Nominal Group Technique, a list of advantages was prioritised and the small groups reformed to discuss how these advantages could be capitalised upon. The report back was summarised by a rapporteur, to be presented at the Plenary Session.

4. Lecturing

The Teaching Methods Unit (TMU) supplied two members of staff to guide this group discussion. Delegates were asked to contribute lecturing innovations that they had heard of, used, wished to try or thought might work in the formal teaching situation. There were a considerable number of novel ideas generated. The facilitators then prioritised these and the group was split into two, with each half taking a different view on each concept - for or against, workshopping these, and then returning to debate them as a group. A rapporteur for the whole group then summarised the deliberations for presentation at the Plenary Session.

Plenary Session

This was chaired by the Dean who, after being introduced, welcomed the delegates of the day, those participants joining for the Plenary Session, and the facilitators.

The workshop on Self-Directed Learning was then introduced in a few words by the facilitator and each group's rapporteur asked to provide succinct feedback. It was clear that the groups mostly had the same advantages and disadvantages with different priorities. The rapporteurs gave consecutively shorter and shorter feedback as points were already covered. All four rapporteurs and the facilitator were then asked to field questions on that particular workshop. This engendered lively debate from those who had been present and those who had joined for the Plenary Session.

The workshop on Communication was introduced by one of the PCU representatives. The rapporteurs gave their opinions of the experience of the workshop and summarised their priorities. After open debate, the other PCU representative summarised the day's events.

The Small Group Teaching workshop showed how closely the four groups had aligned themselves when it came to the advantages of this teaching method. There was

considerable discussion concerning the implementation of these advantages and, in the facilitator's summary, it was suggested that this particular aspect of undergraduate teaching could be focus for an entire day's workshop.

The Lecturing workshop was introduced by the two TMU representatives and then the four rapporteurs presented their group's innovative concepts, with their advantages and disadvantages. There was lively difference of opinion as to whether these would work in practice or not. The summary by the TMU gave lecturers permission to experiment and attempt the introduction of novel methods which they had thought through and considered worthwhile as experimental models.

The Plenary Session was closed with general comments and impressions and, after a vote of thanks to the organisers and sponsors, all present were invited to the party. At the beginning of the Plenary Session, questionnaires had been handed out and these were returned before the delegates left the conference room.

After the Event

Letters of thanks were written to all concerned, including the sponsors asking for continued support. The questionnaires were analysed and the free comments distilled as appropriate. A report was submitted to the UMEC with the questionnaire results. A committee report was submitted to the Dean for presentation and discussion at the next Faculty Board meeting. Photographs were distributed and publicity sought as appropriate.

Comment

The initial **TIFT** took considerable organisation and, possibly because of the novelty, received excellent ratings in terms of its popularity, organisation, perceived benefit, and most delegates thought it highly desirable that Consultants and Registrars attend such an educational exercise early in their teaching careers.

Negative comments concerned the short duration of each session, with insufficient time to cover the ground in depth. It was also noted that the true value of workshop methodology was not allowed to have its maximal effect because of the frequent changes of venue and topic. It was however noted that the groups of 20, although large, did form with identity and common purpose being established. The very considerable overall positive response from delegates, Plenary Session attendees, sponsors and the medical school hierarchy was extremely encouraging and the organisers were requested to repeat the venture the following year.

The **TIFT** complements the role of visitors, debates and special meetings which have all contributed to the well-being of medical education in the Faculty over the years. It has been palpably instrumental in being a rallying point for undergraduate teaching.

CONCLUSIONS

There are fundamental differences between the extrinsic (political) and the intrinsic (pedagogical) aspects of Medical Education. These differences, and the grey areas between them are explored and elucidated.

The extrinsic factors comprise the way in which the State, the South African Medical & Dental Council, the University, the Faculty and the community influence the direction and shape of Medical Education, and provide the canvas on which the art of the new graduate must be depicted. Further factors are the methodology and strategies employed to produce a graduate who possesses the knowledge, skills and attitudes that are congruent with the aims of that medical school. This "end product" depends on the ethos of that school, its perception of its role in society, its students and its resources. Insights are provided into the position of undergraduate education at UCT from the internal political point of view.

The intrinsic factors are all to do with the teachers' role in the pedagogic process. How they teach in terms of style and technique, their motivation and perceptions, and how they are valued and rewarded are vital aspects of the overall success of medical education.

To develop the knowledge, skills and attitudes of the **teachers** who are the most valuable assets of any medical faculty, UCT initiated the **Teach-In-For-Teachers** to promote educational awareness and involvement. The origins, purpose, organisation and success of these annual **Teach-Ins-For-Teachers** are traced over the last seven years. The question is also posed as to whether this is where the UCT Medical Faculty intends to leave the matter. Having made this first move, should the project be dropped, repeated or expanded?

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APPENDIX I

TEACH-IN-FOR-TEACHERS

1986

Professor Roy Keeton and the author tabled the following proposals at UMEC about the **Teach-In-For-Teachers**.

Format	A day's symposium from 10h00 to 17h00
Date	Early 1986, not too close to "staff change overs"
Venue	Medical School
Delegates	Undergraduate teachers to be invited by the Dean, with student representation
Organisation	Dr Athol Kent, Professor Roy Keeton, Teaching Methods Unit (TMU), Professional Communication Unit (CPU)
Subjects	Self-directed Learning Small Group Teaching Lectures as a teaching method Assessment

These were discussed by the committee, under the chairmanship of Professor Ralph Kirsch. A small sub-committee was asked to develop the idea and report back to the UMEC. The sub-committee members were Professors Dommisse and Keeton and Dr Kent, and the following decisions were reached:

Name	**Teach-In-For-Teachers**
Format	Registration Opening address on Communication Principles Break into groups to workshop four different aspects of teaching with four facilitators Two workshops in morning Sponsored lunch Two workshops in afternoon Plenary Session Cocktail party
Date	Sax Appeal Day - 6 March 1986
Venue	Conference Rooms 1 - 4, Barnard Fuller Building, Medical School, with lunch in MAC Club and Cocktail Party in Students' Union
Organisation	Mrs Ann Lloyd, Dr Athol Kent, Professor Roy Keeton, TMU and CPU
Subjects	Small Group Teaching Communication Skills How to give a lecture New Ideas

A time frame was decided upon, with the sequence:

September 1985
Agreement by UMEC to above plans, with a request for all UMEC members to "be involved". Secretarial help allocated. Dean informed.

October 1985
Name of day agreed. Sponsors approached. Venue booked. Date decided upon. Report back to UMEC.

November 1985
Sponsor follow-up. Meetings with CPU, TMU. Facilitators chosen. Delegate numbers decided. Report back to UMEC.

December 1985
Format of the day, with times, drawn up. Chairpersons, speakers and facilitators identified and confirmed. Dean and UMEC asked to supply names of VIPS to be invited. Sponsors involvement and catering plans made clear and meetings arranged accordingly. Report back to UMEC.

January 1986
Meeting of keynote speakers and facilitators with plans of the day, timing, duration and style of workshops. Booking of facilities confirmed. Catering, costs and sponsorship checked. Letter from Dean sent to HODs advising them of plans and future correspondence. Letter from convenor to HODs prepared, with request for delegate nomination and HOD invitation to Plenary Session. Report back to UMEC.

February 1986
Responses from HODs checked for correct number of delegates and their attendance at Plenary Session and party. Date of sponsors and caterers final briefing meeting arranged to confirm numbers, menus, costs and payment. Letters to local publicity contacts and photographer written. Dean's role detailed in writing. Final report to UMEC.

2 weeks preceding
Letter sent to each delegate explaining procedure, commitment, preparation, format, times. Questionnaires checked with facilitators. Letter to HODs confirming delegates and Plenary Session attendance sent. Slow responders chased up. All arrangements confirmed by telephone or face-to-face meetings.

March 1986 - On the day
Arrangements with parking attendant and porters / security personnel confirmed. Registration desk checked for folders, name tags, instructions.

The Convenor's Role
Opening Session : Welcome visitors, dignitaries, delegates. Run through list of those present and day's proceedings, using overhead projection. Introduce facilitators and sponsors' representatives. Disperse delegates with rotation instructions and clarify lunch arrangements. Convene Plenary Session - welcome joining participants. Introduce and hand over to Dean. Propose vote of thanks. Invite all to party.

1987

Building on the success of the 1986 **TIFT**, a similar event was organised for Sax Appeal Day, Wednesday, 4 March 1987.

Although there had been overwhelming approval of the format, there had been suggestions that the time allowed for each workshop was insufficient. Therefore, an earlier start was arranged, allowing each workshop one and a quarter hours, with the Plenary Session somewhat shorter and later. The sponsors, Berlimed, took over the sponsorship of the entire day because of the publicity they had received in the local media and the South African Medical Journal.

The workshops remained essentially the same, with the CPU providing some take-away documentation and acquiring some feedback for their own use.

The Small Group Teaching workshop facilitated by Professor Roy Keeton, and the Lecturing Techniques workshop facilitated by the TMU remained the same.

The Self-Directed Learning workshop was replaced by Dr David Whittaker leading discussions and deliberations on "New Ideas in Teaching", with special reference to the importance of student-centred learning.

The Plenary Session was again chaired by the Dean and well supported by members of the medical school and university hierarchy, as well as influential people from the hospital and outside teaching organisations. Because of the similarity with the preceding year's event, and the very close similarity in the responses, the analysis of the questionnaires of the two years is combined, and summarised in percentages, as follows:

Would you like a follow-up of today's conference for yourself?

Very much	Possibly	No Thank you
51	34	14

Do you think Registrars/Consultants should attend a workshop of this nature early in their teaching career?

Compulsory	Desirable	Unimportant
69	29	2

To what extent did you benefit from the conference?

Greatly	Quite a Lot	Somewhat	A Little	None
20	63	15	2	0

A report-back meeting was held some four months after the event to reflect on the possibilities of change and improvement in the format. It was observed that the remarkable success seemed to indicate that satisfaction with teaching "instruction" appeared to be derived from initiative and enthusiasm, rather than necessarily relying on "expertise". This is supported by Watson, Mulholland and Harden in their delightfully entitled abstract "Staff Development: Its not what you do, its the way that you do it!"[1].

The anticipated arrival of Professor George Irwin from Ireland later that year, and the presence of Dr David Newble at the time of the next **TIFT** caused the UMEC to consider incorporating new ideas into the format.

1988

The 1988 **TIFT** was planned for Sax Appeal Day, Tuesday, 1 March 1988. The preceding years increased time of one and a quarter hours per workshop had been a success, and so had the slightly shorter Plenary Session.

The visit of Professor Irwin had given impetus to the use of videos in undergraduate teaching, and Professor Bert Schaetzing of the University of Stellenbosch was invited and agreed to run a workshop on "The Use of Television and Video in Teaching".

The CPU changed the emphasis of their workshop to "Effective Communication in Small Group Teaching", and Dr David Whittaker and Professor Eric Meyer (TMU) undertook to repeat their workshops on "Self-Directed Learning" and "A Close Look at Lecturing".

Dr David Newble of Adelaide agreed to give an address on broad aspects of medical education at the Plenary Session. This again proved a resounding success, with 80 new delegates during the day being joined by 50 VIPS for the Plenary Session and party. Dr Newble addressed the gathering on the importance of methods of assessment in undergraduate teaching. This was a most thought-provoking lecture which had repercussions for the Faculty, focussing attention on this crucial, but previously neglected, aspect of medical education.

1989

The three preceding **TIFTs** had proved popular and new delegates had attended on each occasion, giving a total of 240 participants. This covered the majority of Consultant teachers in the Faculty. Most had expressed the desire to follow up their initial learning.

Assessment of medical students had been highlighted in 1988 by the talk to the plenary session by Dr David Newble. The question of objectivity in oral examinations and in-course assessment had also featured in the Examinations Sub-Committee agenda during the previous year. There was little information about the practice and attitudes within the Faculty to structured examinations. For these reasons it seemed appropriate to focus on Assessment in 1989 and the **TIFT** set up accordingly. A keynote address was given by Dr John Daubenton on the criteria of an "ideal" examination and adjustments made in the groupings for pre-clinical and clinical delegates to be aligned.

Spokespersons for each group were chosen beforehand and given instructions as to how the focus of the morning and afternoon sessions should be directed. Briefly they were asked to find out how in-course assessments (ICA) and oral examinations were being conducted by departments in the morning sessions and how the objectivity of these could be improved in the afternoon sessions. The aim was to have each group show where improvements could be made and present these at the Plenary Session.

In the event, there was considerable variation in opinion as to the degree of objectivity, or lack thereof, that existed in each department's methodology and, sometimes, more heat than light was generated. There was little in the way of consensus achieved, possibly because of the wide diversity of departments present. However, the Examinations Sub-Committee of the UMEC was well-represented at the **TIFT** and put together a balanced report on the aspects of assessments that were addressed. This was fed back to the UMEC and the Faculty Board.

1990

The end of 1989 was a time of immense change and expectation in the world order and in South Africa, in particular. Momentous realignments were occurring in Europe,

especially Eastern Europe and Russia, with politics in sub-Saharan Africa about to change forever. This, and the imminent dawn of the last decade before the new millennium had perhaps prompted visionary papers by McGuire[2] and comments in the medical literature by other luminaries such as Parry, Show, Harden and Moore[3].

More student involvement in medical school politics may have also been felt, with particularly concerned and responsible representatives being present on the education committees. The First and Second Year Sub-Committees became a single committee, looking at those two years as a continuum, and a state of flux pervaded the educational scene.

It was against this background that the UMEC decided the theme of the 1990 **TIFT** would be a glimpse into the future in the form of deliberations about the sort of curriculum the staff and students would like to see at UCT in the Year 2000.

Preparations were different to those in previous years in that, to ensure purposeful discourse, preliminary meetings were held to decide on the topics to be addressed. Groups of students and members of the UMEC decided on four issues which would be debated by four groups of staff and four groups of students, separately in the morning and as combined forces in the afternoon, to present a consensus view to the Plenary Session.

The four topics chosen were :

1. Teaching : Content and Methodology
2. Designing the Health Professional for a Developing Country
3. Creating South African Models for Medical Excellence. Challenging the Eurocentric Concept
4. Examining the Relevance of a Community-Based Medical Education (CBME) in the South African Context

The format gave rise to lively discussion and extensive documentation. This was criticised for its lack of practical value because of the increase in staff as resources required for its implementation. The debate, nevertheless, identified and underscored the thinking of those dedicated to the progress of medical education the faculty and resulted in increased co-operation and trust between staff and students.

The results were an interesting combination of a common desire for movement towards a more student-centred curriculum, plus a greater responsiveness to the needs of the individual and the community.

The irresistible comparison between the conclusions arrived at by the groups and the classic SPICES model of Harden[4] was noted by those with a medical education interest. It was decided that this congruence reflected well on the insightful attitudes of the delegates and the precision, accuracy and transferability of Harden's work. This comfortable deduction added impetus to the incorporation of other aspects of the SPICES model into the UCT curriculum.

1991

See Chapter 8

1992

The workshop format of the preceding **TIFTs** had proved to be so popular that it was used again, with some modifications to focus on the subject under review. That subject was

"Effective Small Group Teaching"

The date (Sax Appeal Day - 2 March 1992) was confirmed well in advance and the topic of the day's discussion ratified by the UMEC. Pre-clinical and clinical HODs were asked to nominate delegates and the only constraint placed on their choice was those attending had to be actively involved in small group teaching. No preparation in terms of reading, literature reviews, surveys or other obligations were asked of the participants.

To focus attention on the precise area of interest, a video was prepared of a bedside tutorial where a tutor (the author), a group of students and a patient portrayed a typical small group teaching event. This was the presentation by one of the students of an obstetric patient (with her permission), with some good, but mostly bad, points demonstrated by the tutor during the 20 minute exercise. Other preparations were the recruitment of three people with an interest in education to deliver short keynote addresses.

The first was Dr Rod Colborn, the Deputy Dean of the University of Cape Town Medical Faculty whose management skills made it appropriate for him to talk on "Aims, Goals and Objectives" as concepts, with particular application to the teaching situation. The second speaker was Professor Eleanor Nash, recently retired psychiatrist from the UCT academic department, having a particular interest in education and group dynamics who talked on the interpersonal actions and reactions that occur in the small group situation. The third contributor was Mr Greg Pastoll, senior lecturer from the Teaching Methods Unit of the University, whose area of research is tutorials as they are practised throughout the University. He chose to concentrate on stimulus material and its importance in focussing common group experience and contributing to personal involvement in the process.

The procedure of the day followed that detailed in the preceding descriptions, and is only briefly described here.

After registration and the traditional welcome by the Dean, the convenor explained the format of the day to the delegates, after displaying a list of those present. This included the groupings, eating arrangements, participation, breakaway areas, and "what was required of the participants".

The video was shown, followed by the address on "Aims, Goals and Objectives" by Rod Colborn. Groups were then asked to workshop these subjects in relation to small group teaching, and report their deliberations to the combined gathering, before proceeding to the next subject.

The process was repeated with delegates breaking into small groups and workshopping "Group Dynamics" after the presentation by Professor Nash to the group as a whole.

After lunch, the "Stimulus Material" contribution by Greg Pastoll was followed by the final workshop of the day, before all the delegates discussed that particular subject as a large group.

The Plenary Session was, as always, well-attended by HODs and other dignitaries who had not been present for the day. An extract of the video seen earlier in the day, was re-shown to set the scene. This elicited strong response from both the delegates, who felt better equipped to criticise it, and the guests attending only the Plenary Session who felt

felt better equipped to criticise it, and the guests attending only the Plenary Session who felt they could ask the participants for their thoughts. This, in effect, empowered the delegates to express opinions arrived at during their deliberations.

Feedback

Because of the desire to be true to the ideals of small group teaching, 64 delegates had been invited, allowing eight groups of eight to workshop the three different aspects presented, as small groups themselves. This commitment to experiential learning was certainly not lost on the delegates, and the acceptability of the technique was reflected in the positive response to the questionnaire.

1993

The 1993 **TIFT** had an inauspicious start when, six months prior to the event, the sponsors of the preceding seven years (Berlimed (Pty) Ltd) were contacted in the hope of once again enlisting their financial support. They declined, for budgetary reasons.

Exploratory letters were sent to selected pharmaceutical companies and in October 1992 Eli Lilly Pharmaceuticals expressed interest in being involved in educational exercises, particularly at UCT. Negotiations then started between the convenor and Mr Louis Odendaal (Manager - Eli Lilly Corporate Affairs). Three months prior to the event it was suggested, since the Eli Lilly company had recently had a positive experience with a professional team of management consultants and communication experts, that this team be asked to take over the leadership of the day and teach the Medical Faculty about communication skills pertaining to lectures.

Although completely different to the previous events, the management company concerned (Anton van der Post & Associates) had a high reputation and, despite being based 1500 kilometres distant and commanding a hefty fee, it was thought to be a worthwhile initiative to follow through. The considerable funds being invested in the exercise did warrant a high profile response in the form of dignitaries, publicity and advertising to be worked into the standard formula that had proven to be effective in preceding years.

The format was to be a series of lectures on "How to Get Your Message Across", with practical demonstrations of audience involvement, even when dealing with large numbers. The maximum number of delegates was held at 80 because of constraints of costs and facilities. The Principal and Vice-Chancellor of the University (Dr S J Saunders) was invited to chair the introductory session and the Dean the Plenary Session, to which the usual galaxy of VIPS, HODs and hospital top-brass was invited.

The day was extremely successful, with the professionals demonstrating, by example, ways of commanding attention, voice projection, delivery techniques, movement, dress and body language.

Special sessions were held on:

1. The use of visual aids, especially overhead projection, and stimulus material
2. Effective speaking, using different techniques to "sell ideas"
3. Audience participation
4. "The rules of the game"

There was also a break from the routine by the delegates forming four separate groups and personally undertaking public speaking exercises, using the specific points mentioned and getting immediate feedback from the other members of the group.

The Plenary Session involved a question and answer session between the presenter / facilitators and the audience. The questionnaire at the end of the day was open ended, and asked participants to list important things that they had learnt from the presentations and breakaway groups. There were also two specific questions asked - as follows:

Did you enjoy the day?

Yes 98% No 2%

Should a day like this be compulsory for all teachers?

Yes 69% Maybe 18% No 13%

A report to the UMEC summarised the day's events, and included the free comments from the delegates which amounted to fourteen typewritten pages. The report to the UMEC is included as Appendix VI.

APPENDIX II

UNIVERSITY OF CAPE TOWN

FACULTY OF MEDICINE

TEACH-IN-FOR-TEACHERS - Thursday, 6 March 1986

09h30	Registration - Amenities Building (Wyeth Laboratories)
10h00	Welcome and Instruction - Conference Room 4 - Dr A Kent
10h15 - 11h15	First Workshop
11h30 - 12h30	Second Workshop
12h30 - 13h30	LUNCH - MAC Club - Hosts : Schering Berlimed
13h30 - 14h30	Third Workshop
14h45 - 15h45	Fourth Workshop
16h00 - 17h00	Plenary Session - Conference Room 4 - Dean
17h00	Cheese & Wine Party - Students' Union Hosts : Schering Berlimed

DELEGATE GROUPS

GROUP 1	GROUP 2	GROUP 3	GROUP 4
PROF P BEIGHTON	MISS S CLOW	DR A ALLIE	DR C ARCHER
PROF M BOWIE	DR F DAUBENTON	DR H ANGUS	MISS B BOYLIN
DR A BUTT	DR J DUFF	PROF M BERGER	DR J DAUBENTON
PROF D DENT	PROF J P DU TOIT	DR C BLOCH	DR K DEHAECK
DR P ELLIS	DR R EASTMAN	DR R BOWEN	MR C DELANEY
DR A HACKING	DR G HARLOW	DR P DISLER	DR J GROBBELAAR
DR M JACOBS	MRS L HENLEY	DR C FOSSEUS	DR S KIDSON
DR C JOHNSON	DR J KRIGE	MRS J GILDER	DR D LAMONT
DR A KEEN	DR B LEON	PROF V HARRISON	DR I LEARMONTH
DR J KOESLAG	PROF A MALAN	DR P HARTLEY	PROF M LEARY
DR S LOUW	DR F MONTEAUGUDO	DRS P JORDI	DR M MAGNER
PROF O L MEYERS	PROF A MURRAY	DR B KIES	DR G MARUS
DR A MORRIS	DR J SIMPSON	PROF R LILFORD	PROF P MEIRING
DR G MULLIGAN	MR C RODSETH	DR S LINDOW	DR A PONTIN
DR P PILLANS	MISS G SIMPSON	DR A MILLAR	DR E SAPIRE
DR S PRICE	DR C SMITH	DR D RIDLEY	PROF N SAXE
DR J REYNEKE	DR R SOETERS	MISS S RISPEL	DR C SINCLAIR
DR G SAYERS	DR C WARTON	DR S SACKS	DR J SMITH
DR Z VAN DER SPUY	DR J WIGGELINKHUIZEN	MR G SAVAGE	SRN P STEVENS
DR J WALTERS	DR J WRIGHT	DR C STANNARD	DR P UYS
DR D WILSON	DR M WRIGHT	PROF D v d WEST	

APPENDIX III

UNIVERSITY OF CAPE TOWN
FACULTY OF MEDICINE

TEACH-IN-FOR-TEACHERS - Wednesday, 4 March 1987

08h45 - 09h15	Registration - Barnard Fuller Building, Medical School
09h15 - 09h30	Welcome and Instruction - Conference Room 4
09h45 - 11h00	First Workshop
11h00 - 11h30	TEA - outside Conference Room 4
11h30 - 12h45	Second Workshop
12h45 - 14h00	LUNCH - MAC Club - Hosts : Schering Berlimed
14h00 - 15h15	Third Workshop
15h30 - 16h45	Fourth Workshop
17h00 - 17h30	Final Session - Conference Room 4
17h30	Cheese & Wine Party - Students' Union Hosts : Schering Berlimed

DELEGATE GROUPS

GROUP 1A	GROUP 2A	GROUP 3A	GROUP 4A
Dr D Viljoen	Dr N van Diggelen	Mr G Wilson	Dr S Ress
Dr A Kall	Dr P Chapman		Dr S Sacks
Dr N Harris	Dr P Owen	Dr H de Groot	Dr K Gunston
-	Dr P Moore	Dr A Orren	Mrs J Dring
Dr E Conradie	Dr J Straughan	Prof A Forder	Dr D Hanslo
Dr D Roditi	Prof G Coetzee	Dr M I Parker	Dr P Ryan
Dr C Ziervogel	Dr A Kelly	Dr A Swanepoel	Dr D Linton
Dr C Karabus	Dr J Daubenton	Prof D Woods	Dr G Hussey
Dr A Sive	Dr R Lechtape-Gruter	Dr P Keet	Dr D R Barnes
Prof J v Niekerk	Miss P-A Teague	Dr P M Close	Dr G Learmonth

GROUP 1B	GROUP 2B	GROUP 3B	GROUP 4B
Dr J O'Brien	Dr C Swanepoel	Dr P Strauss	Dr N Mousdicas
Dr A Railton	Dr M Stein	Dr K Wiswedel	Dr B Rossouw
Dr E Bhettay	Dr J Ireland	Dr E Weinberg	Prof M Kibel
Prof D Beatty	Dr J Crosier	Dr C Maraspini	Dr A Bird
Mr B Davis	Prof L Opi	Dr J Mets	Dr P Nel
Mr J Duflou	Mr C Rodseth	Mrs M Penberthy	Dr R Maske
Miss E Hollins	Dr A Epstein	Miss P Hulley	Dr D Kranold
Dr M Madden	Prof R Hickman	Dr H Rode	Prof A Tiltman
Mrs U Brown	Dr E Bolding	Prof J Dommisse	Mr I Lewis

APPENDIX IV

UNIVERSITY OF CAPE TOWN
FACULTY OF MEDICINE

TEACH-IN-FOR-TEACHERS - Tuesday, 1 March 1988

08h45 - 09h15	Registration - Barnard Fuller Building, Medical School
09h15 - 09h30	Welcome and Introduction - Conference Room 4
09h45 - 11h00	First Workshop
11h00 - 11h30	TEA - outside Conference Room 4
11h30 - 12h45	Second Workshop
12h45 - 14h00	LUNCH - MAC Club - Hosts : Schering Berlimed
14h00 - 15h15	Third Workshop
15h30 - 16h45	Fourth Workshop
17h00 - 17h30	Final Session - Conference Room 4
17h30	Cocktail Party - Students' Union Hosts : Schering Berlimed

DELEGATES

Dr J Anthony	Prof T Arendorff	Miss T Bailey
Prof E Bateman	Dr D Bester	Dr R Bowen
Miss P Bowerbank	Dr M Broodryk	Dr R Brown
Dr J Burgess	Dr N Chetty	Mr C Clow
Dr W Coetzee	Dr C Cowen	Dr P Cole
Dr S Cridland	Dr M de Moor	Dr S Dennis
Dr J Duff	Dr R Eastman	Mrs B Farham
Mr A Flisher	Dr D Fowle	Mr C Gass
Dr B Green	Mr O Groenewald	Dr Y Grosser-Hofer
Ms L Hanmer	Dr P Hartley	Dr E Holland
Miss P Hulley	Dr K Jaskiewicz	Dr L Jee
Dr O Jennings	Mrs P Jordi	Prof C D Karabus
Prof R Keen	Prof R Keeton	Dr K Kahn
Prof M Kibel	Prof R E Kottler	Dr G Lahnborg
Dr P Lawrence	Dr K Leucona	Miss L Maas
Dr R Marks	Dr P Matley	Miss D McIntyre
Dr B Mets	Dr W Michell	Dr G Moller
Dr A Morrison	Miss S Mountford	Mrs G Mudie
Mrs V Nel	Dr J Nevin	Dr D Newble
Prof G Norman	Dr J Ozinsky	Dr J Pamm
Dr N Peter	Dr F Potochnik	Mr M Poluta
Miss K Ragsdale	Dr S Robson	Dr D Ross
Dr M Silber	Dr C Sinclair-Smith	Dr N Slack
Mrs D Smuts	Prof C Terblanche	Prof L Thilo
Dr C Thomas	Dr J Thomas	Dr G Todd
Dr C Tuson	Mrs E van der Merwe	Dr J van Heerden
Dr C Wallis	Prof R Watson	Dr I D Werner

APPENDIX V

EVALUATION OF UCT MEDICAL SCHOOL TEACH-IN-FOR-TEACHERS

Responses to the general questionnaire

1. WOULD YOU LIKE A FOLLOW UP OF TODAY'S CONFERENCE FOR YOURSELF?

Very Much	71%
Possibly	26%
No Thank You	4%

If "Yes" - what aspects?

Updates on any/all teaching techniques
Lecturing skills
Self-directed learning
Communication Teaching

2. DO YOU THINK REGISTRARS/CONSULTANTS SHOULD ATTEND A WORKSHOP OF THIS NATURE EARLY IN THEIR CAREERS?

Compulsory	57%
Desirable	41%
Unimportant	2%

3. WHAT DID YOU THINK OF THE ORGANISATION OF THE CONFERENCE?

Excellent	61%
Good	39%
Poor	0%

4. TO WHAT EXTENT DID YOU BENEFIT FROM THIS CONFERENCE?

Greatly	41%
Quite a lot	41%
Somewhat	9%
A little	9%
None	0%

5. The most useful aspects of the conference were mainly concerned with the workshops and the other two areas that were highlighted were

   (i) Interchange of ideas with colleages and becoming aware of different views held by other teachers
   (ii) Gaining insight into problems, becoming aware of deficiences and realising the scope for development

6. ASPECTS FOR RE-THINKING

   The criticisms were few, but centered around the limitation of time in the workshop sessions and the requests for more space and discussion time between the workshops.

APPENDIX VI

UNIVERSITY OF CAPE TOWN **FACULTY OF MEDICINE**

TEACH - IN - FOR - TEACHERS

REPORT TO UNDERGRADUATE MEDICAL EDUCATION COMMITTEE 23.3.93

Convenor : Dr Athol Kent **Co-ordinator : Mrs Ann Lloyd**

The annual Medical Faculty Teach-In-For-Teachers, under the auspices of the Undergraduate Medical Education Committee, was held in the Barnard Fuller Building on Sax Appeal Day, 2 March 1993.

This has become an established academic and social event in the Faculty calendar and this year was the most ambitious and successful thus far. We were fortunate to have sponsorship of nearly R20,000 from Eli Lilly Pharmaceuticals which allowed the "importation" of Management Professionals from Johannesburg to facilitate the day's proceedings. It was interesting to see communication skills, as applied to the business sector, extrapolated to those of information transfer in the medical sphere.

Apart from the highly professional presentation skills that were demonstrated, the facilitators clearly believed that the more information that was for transfer, the better the mechanisms required. There were many rules, guidelines and techniques for better audience involvement, recall and persuasion. They were able to "get **their** message across" with a light touch, humour and good natured skill which built confidence and allowed for interaction, exchange of ideas and a thoroughly enjoyable day.

The Vice-Chancellor, Dr Stuart Saunders, gave the opening address and Professor Mick Leary proposed a vote of thanks to Eli Lilly at lunch. The Dean, Professor J P van Niekerk, chaired the Plenary Session which was attended by the 80 delegates, plus 50 guests (Heads of Departments and other VIPs from the Hospital, University and other teaching institutions). There were three special guests for the whole day - Professor Gillian Turner from Auckland, New Zealand, Professor Bert Schaetzing from Tygerberg, and Professor Oelof Heckroodt from the UCT Department of Civil Engineering.

A questionnaire was completed by the delegates at the end of proceedings. Nearly 70 percent said that a similar day should be **compulsory** and an overwhelming majority said that they had enjoyed the day.

Particular thanks should go to Mr Louis Odendaal of Eli Lilly who was not only involved in all stages of the Teach-In but also acted as one of the Facilitators.

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CHAPTER EIGHT

STAFF DEVELOPMENT RESEARCH

Introduction

The Quest and Concept

Pre-Teach-In Phase

- Investigation
- Aim
- Hypothesis
- Permission
- Review of the Literature
- Questionnaire
- Assistant
- Statistics
- Methodology

Teach-In-For-Teachers 1991

Post-Teach-In Phase

- "Target" and "Control" Tutorials
- Questionnaire Distribution and Return

Results

Reflections and Conclusions

Acknowledgements

References

Appendices

INTRODUCTION

> One might well ask why we have been unable to modify our teaching? This is a complex problem which should be carefully researched.
>
> - Kirsch[1]

Staff development through the **Teach-In-For-Teachers (TIFT)** has proved extremely popular. A successful formula had been derived that allowed participants to report that they felt the experience had benefited them. This was consistently reflected in the responses to the questionnaires issued at the conclusion of each **TIFT**.

The question had been raised that, although these **TIFTs** had shown a high "happiness index", this did not necessarily indicate significant teaching improvement, much less student learning gains.

The difficulties in substantiating student gain from modifying teaching strategies have been discussed but, despite the acknowledged problems, it was determined to attempt an exercise that might yield data showing movement towards such a goal.

A decision was made in 1991 to see if it were possible to measure the impact of an educational intervention (**TIFT**) on the behaviour of tutors teaching small groups. Students would observe techniques being used, by filling in a questionnaire. Since the topic for the **TIFT** that year was Small Group Teaching, the opportunity to attempt this presented itself. A protocol was proposed and accepted to evaluate tutorials prior to, and following the **TIFT**. Careful mechanisms were installed to ensure that tutors were unaware of their tutorials being "observed" by their students, and a control group, whose members did not attend the **TIFT**, was also evaluated.

The first "post-**TIFT**" tutorial evaluation of both the target and control groups failed to show any statistically significant differences from the "pre-**TIFT**" responses.

The possible reasons for this lack of demonstrable effect are discussed.

THE QUEST AND CONCEPT

One of the major quests of medical education is the defining and measuring of teaching strategies that will enhance the students' learning experience.

This is a formidable task but progress could be made in addressing the problem if one could answer the question as to whether an intervention such as the **TIFT** could be shown to produce a recordable change in teacher behaviour.

The popularity of the **TIFT** formula had been demonstrated by the responses of the participants over the years to questionnaires distributed on the day. This "success" led to debate as to whether there should be follow up (with the same delegates and related topics), more frequently held **TIFTs** (twice a year), or even expansion to a more comprehensive course format.

A more fundamental question was also raised - that of their value - value to staff and value to students.

Unquestionably the staff **felt** better about their teaching after attending a **TIFT**. They may even have felt more enthusiastic, but this has not been tested. Whether they became better teachers, changed even temporarily or derived lasting benefit remained unsubstantiated.

The ultimate question as to whether students were better off for their teachers having attended a staff development day is still more complex, and not contemplated further here.

The ultimate question as to whether students were better off for their teachers having attended a staff development day is still more complex, and not contemplated further here.

Cognisant of the number of potential pitfalls in any such investigation, it was decided to undertake a study that could provide evidence of a demonstrable effect of the **TIFT** on the behaviour of attending delegates. As the **TIFT** topic - following the decision to embark on the study - was "Small Group Teaching", it was appropriate to focus the research on observing some aspects of tutorials as experienced by UCT medical students.

The concept was for routine pre-clinical and clinical small group teaching events to be evaluated by those attending them. The students would complete a questionnaire following a designated tutorial and the information analysed. The tutor of that observed tutorial would attend the **TIFT** and the next tutorial of the same tutor would again be evaluated by students.

If there turned out to be a measurable difference, this could be attributable to the **TIFT**. It could then be postulated that modification in tutor technique or behaviour was achievable by an intervention exercise. If such changes were in the direction of criteria thought to be of benefit in increasing "effective teaching / learning", then student gain could possibly be extrapolated.

PRE - TEACH-IN PHASE

Investigation

Having concluded that a study would be helpful in determining the effectiveness of the **TIFT** modality of staff development, a formal protocol was drawn up which is presented here in a summarised form.

Aim

It was proposed, using the 1991 **TIFT**, to find out whether students observed a change in the techniques used by a group of tutors in the small group teaching situation, having attended the **TIFT**.

It was determined that the specific aspects to be evaluated would be the use of certain teaching techniques. The students attending the tutorials would be the observers and a questionnaire, before and after the **TIFT**, would be the source of the data. The group of tutors observed in this way would be the target group.

It would be a controlled study in that a matched cohort of tutors, **not** attending the **TIFT**, would also be observed by students on two separate occasions, chronologically similar to the time when the target group were being observed.

It would be a single blind trial in that the Investigator would not be aware of which data belonged to which tutor group. This would require the active assistance of a second party (the Assistant).

Hypothesis

A group of tutors will change the techniques they use in the small group teaching situation, having attended a one-day workshop on the small group teaching / learning process.

Permission

Having devised a hypothesis and a working protocol, the Dean of the Medical Faculty was approached for advice and permission. After discussion in which minor modifications were agreed upon, the Dean gave permission for the study to be undertaken, with the proviso that techniques and not style would be observed and reported on, and that the anonymity of the tutors would be safeguarded.

It was also agreed that any presentation of the data would specifically exclude any information, such as department, age, gender, teaching experience, or any other information that could potentially identify those involved.

It was felt that these constraints were justifiable, given the ethical difficulties that could arise if it were erroneously construed by tutors that they were being "assessed" without their permission.

Review of the Literature

A literature search was carried out to identify the past and current publications concerned with evaluation of medical small group teaching. Special interest was focused on the existence or otherwise of questionnaires, check lists or inventories that could be used in the general small group teaching situation. This was conducted on 12 August 1990, using Medlars II, through the N.L.M.'s National Interactive Retrieval Service. Of the 52 citations generated, only 2 had direct relevance to the establishment of inventories or questionnaires pertaining to medical small group teaching[2-3].

Two classic publications of 1973 were useful - "Small Group Methods in Medical Teaching" by Walton[4] and "The Evaluation of Teachers and Teaching Effectiveness" by McGuire[5]. The most helpful documentation came from an inventory from Hewson & Jensen[6] in the clinical setting and from Newble & Cannon[7] in their "A Handbook for Clinical Teachers" and, more recently, Price[8].

No appropriate model was found to evaluate techniques used in tutorials in the pre-clinical and clinical settings.

A unique questionnaire was devised for this specific task.

Questionnaire

The assistance of Mr Greg Pastoll of the UCT Teaching Methods Unit (TMU) was enlisted.

As the purpose of the survey was not to grade, score or in any way assess the ability of the tutors, but to objectively record which of certain techniques they employed, questions of style were not included. The questionnaire could not be used to investigate by value judgement the quality of the tutor.

Because the questionnaire was "A University of Cape Town Doctor's Inventory Table" the acronym "AUDIT" was given. AUDIT contained 18 different questions requiring "Yes", "No" or graduated responses. A copy of AUDIT is attached as Appendix I.

Statistics

Statistical advice was taken and it was considered that a minimum number of fifteen tutors in each of the target and control arms of the study would be sufficient to show statistical significance.

Methodology

Confidentiality

To reduce bias, it was considered essential that the tutors were not aware that their tutorials were being observed, as this may have caused them to alter their technique (the Hawthorne Effect[9]). Because this could have raised ethical questions, with tutors feeling that the survey was an intrusion or that evaluations or judgements were being made without their permission, the following mechanisms were built into the study:

- The Investigator chose which tutorials would be observed, and asked the Assistant to allocate numbers to each of these tutorials.
- The Assistant was responsible for the distribution of the questionnaires and the collection of the responses.
- The Assistant would not collate or, in any way, record the results, but simply forward them to the Investigator under the number allocated by him. The code relating to the number in the tutor was not available to the Investigator.

The Assistant distributed the questionnaires with the assistance of the Medical Faculty Students' Council Class Representatives and Group Leaders.

Tutors

Once the Heads of Departments had submitted their lists of delegates to attend the **TIFT**, a list of target tutors was drawn up to allow a spread across the different years of study and the different disciplines. Twenty of the tutors attending the **TIFT** were designated as the target group. A second group of tutors (also due to hold tutorials around that time) who did **not** attend the **TIFT** were also designated. This was the control group. Both groups had one tutorial observed before and after the **TIFT**.

The need for the control group was vital to establish that any difference demonstrated in the target group's techniques pre- and post-**TIFT**, was attributable to the intervention

and not some extraneous factor that would have affected both the target and the control group results in the same way.

AUDIT contained an explanation of the purpose of the study and reiterated the intention not to observe the tutor's ability, but the techniques used. It was also explained on the AUDIT document that the study required confidentiality and that tutors should not be informed that the observation had taken place, and requested that students should not discuss their completed forms with others. The study was therefore a single blind, controlled, "intervention" study.

Identification of Tutorials

35 tutorials that were to given by tutors due to attend the **TIFT** in the fortnight preceding the event were selected.

An equivalent number of tutors formed the control group, matched as far as possible for academic department, experience of tutor, as well as for the size and nature of the tutorial.

Observers

The observers were students attending the tutorials, but no advice, training or instruction as to carrying out the observations was given. Timetables were used in conjunction with class/group lists to identify which students were to attend each tutorial. For each tutorial observed, one student was selected to be responsible for distributing and collecting the responses within that group of students.

Because of the vagaries of any tutorial system, not all the observations were complete. The reasons for this were the failure of tutors to turn up (or be substituted) or resistance on the part of the student observers.

In this, the first phase of the study, 904 questionnaires were distributed and 467 returns received. This gave an effective return rate of 51.66% and the raw data was then stored for later collation.

TEACH-IN-FOR-TEACHERS 1991

The established formula for the organisation of the **TIFT** for previous years was again used in 1991 and no attempt was made to identify the tutors targeted by the study nor to treat these delegates in any way differently to the others and no mention was made of the study in progress.

Because "Small Group Teaching" was being comprehensively introduced into the Third Year of the MBChB course and because of its importance in the Clinical Years, this was chosen as the **TIFT** topic.

The concept was to use small group teaching techniques to learn about the subject - experiential learning at its most fundamental. In order to achieve this, a structured format was required, as well as an extended length of time. Registration took place earlier, a keynote address was given after the initial two workshops, and the grouping organisation rearranged.

The 80 delegates (including the targeted tutors) were allocated to eight sub-groups and required to address a specific objective during the two morning sessions. The topic designated was:

"Define the components of a good tutorial"

The pre-lunch session was concluded by a lecture from Greg Pastoll of the Teaching Methods Unit (TMU), entitled "Tutorial Research".

After lunch the sub-groups were paired together and the four larger groups asked to each devise a questionnaire as to how they would ascertain whether the "components" of the morning deliberations had been used in a tutorial - or not.

This exercise required the choosing of initially eight sub-group leaders and then allocating four of them to facilitate the larger groups in the afternoon. They were required to achieve consensus, write the results on overhead transparencies, and present them at the Plenary Session.

The result was only a partial success. The components were produced by the small groups during the morning sessions in a reasonably pragmatic fashion, but the four large groups in the afternoon had mixed fortunes. There were concerns as to the use or usefulness of the questionnaires that they were working on to define the application of the agreed components.

There was considerable similarity between the questionnaires devised by the various groups and the AUDIT. Regrettably, many of the **TIFT**-generated attributes and components of "a good tutorial" involved the tutor's style and personality rather than just the technique used. It was, nevertheless, heartening to see the congruence and similar values that were considered appropriate.

Reflecting on the relative failure of the larger groups (as compared to the success of the sub-groups), it was considered that the following factors were those inhibiting the achievement of the objectives:

1. The lack of congruence between the comparable "components" as derived by each sub-group and the amount of debate required to weld these into consensus points.
2. The group dynamics established by the ten participants in the morning did not work satisfactorily when the groups combined to form a group of

twenty in the afternoon. Attitudes changed, dominance asserted itself, and true workshop techniques were not possible.

3. Suspicions were raised as to the usefulness or objectives of the questionnaires and, specifically, as to whether these would be used by students in assessing the tutors producing these documents.

4. The constraints of time for the larger groups to "form and storm" was prohibitive, as well as the highly prescriptive goals laid down.

In the end, it devolved on the facilitator's skill to break the large groups into smaller groups again, which became more manageable, and these proved the most productive.

Although valuable insights were gained, these were relatively sophisticated, such as the first hand observation of group dynamics at work, the comparison of the effectiveness of different facilitators (vicarious observation), and the witnessing of suspicion as an inhibitory factor in productivity in the workshop situation.

For the organisers, there were sharp lessons of group experience to be learnt. If such an exercise were to be repeated, the facilitators would have to be forewarned as to the potential impediments and permission given to them to adjust the format accordingly.

In the instructions to the delegates, the type of group that they were to discuss was laid down, which proved essential as the discussions often varied with different people's experiences of groups that they had belonged to or run.

The questionnaires at the beginning of the workshops and at the end were extensive, and possibly fulsome to the point of irritation. Again, the learning curve for the organisers was steep in not having too demanding tasks for the participants in terms of feedback detail. The information issued to the delegates about the "Small Groups" and the results of the questionnaires are included as Appendices II and III.

POST-TEACH-IN PHASE

"Target" and "Control" Tutorials

Those tutors who were "controls" and "targets" were again sought out, using the departmental teaching timetables, as were the students allocated to these tutorials.

Tutors whose tutorials had not been satisfactorily observed in the pre-**TIFT** phase were excluded as no comparisons could take place.

Questionnaire Distribution and Return

The same methodology was used as prior to the **TIFT** and this follow-up observation was planned to take place within three weeks and certainly to be completed within three months.

The results were entered into a database using Framework II and exported as dBase files along with parameters such as sample size and means.

The statistical comparison of results was performed using the two-tailed Student's T-test available on the Epistat package. This makes the assumption that the values assigned in the multiple-choice questionnaire can be regarded as an analogue scale of measurement for each of the aspects questioned.

Results

Because of the considerable number of steps in the process and the unreliability of the students and staff, completed returns were available for only ten tutors in the target group and ten tutors in the control group.

Each of the 18 points in the questionnaire was graded on an analogue scale and a mean of all the students' responses calculated for each question.

All the tutors' mean marks for each point in the questionnaire were then averaged for the target and control group.

A similar exercise was carried out on the before and after results. These before and after results were then subjected to the statistical analysis mentioned.

Control Group

As would be anticipated, there was no statistically significant difference between the first and second sets of results for this group. They had not received any instruction, nor undertaken any known exercises that may have had an effect on their tutorial technique as observed by the students.

Target Group

This group may well have shown differences in the Before and After results of their observed tutorials having attended the **TIFT** that addressed Small Group Teaching. In the event this did not occur for any of the parameters that were scrutinsed.

RESULTS

The results of the student responses to the questionnaires were collected in the two weeks prior to the **TIFT** and in the two months thereafter. The Target and Control groups were analysed separately.

The method of the score derivation was to take the percentage positive response to each question, or the mean value to the analogue scale question, and compare these before and after the intervention.

To arrive at these scores, each of the individual student's reponses was recorded and the mean for that tutorial calculated. All the mean scores for the Target and Control groups before were then combined and the mean again calculated. Similar calculations were performed after the **TIFT**.

A p-value was then calculated to deduce the significance or otherwise of the observed change, predicative on the numbers involved. Because of difficulties encountered in the inconsistency of tutorials to take place as scheduled, there were only ten tutors in the Target group and ten tutors in the Control group on whom there was complete information available. This was only two-thirds of the required numbers necessary.

AUDIT

TARGET GROUP

PLEASE CIRCLE THE NUMBER THAT IS CLOSEST TO YOUR ANSWER

	Question			
1	Was use made of sub-groups? NO 1 YES 2	32	23	.19
2	Were <u>tasks</u> set and explained in such a way as to make sure everyone participated? NO 1 YES 2	51	59	.35
3	Were <u>tasks</u> set and explained in such a way as to make sure everyone in the group was obliged ot think about the subject? NO 1 YES 2	59	57	.86
4	If there was a presenter, was it made clear to him/her exactly what was required? NO 1 FAIRLY CLEAR 2 PRECISELY 3	61	80	.16
5	What percentage of those present spoke to the group? TUTOR ONLY 1 20% 2 0% 3 80% 4 100% 5	49	53	.65
6	Was there opportunity for students to ask any question they liked? NO 1 YES 2	93	100	.054
7	Was some of the knowledge on the subject derived from the group members' collective experience? VERY LITTLE 1 2 3 4 5 GREAT DEAL	35	48	.04
8	Did you find yourself solving problems rather than receiving facts? JUST FACTS 1 2 3 4 5 LOTS OF PROBLEM SOLVING	38	49	.11
9	If someone was "presenting" was he/she given constructive criticism as to his/her performance by the tutor? NONE 1 2 3 4 5 ADEQUATE	74	68	.46

10	What percentage of the group gave feedback to the presenter? 0% 1 20% 2 50% 3 80% 4 100% 5	49	62	.42
11	Were the feedback comments given by other students to the presenter modified, explained or endorsed by the tutor? NOT AT ALL 1 SOMEWHAT 2 IN DETAIL 3	61	76	.13
12	Were the actions, manners and attitudes of the group (including the tutor) discussed? NO 1 BRIEF MENTION 2 GIVEN IN DETAIL 3	21	19	.85
13	How much use was made of stimulus material (e.g. the patient's symptoms or signs or specimens)/ NONE 1 SOME 2 GREAT DEAL 3	52	46	.53
14	Was use made of the following: HANDOUTS YES NO DIAGRAMMES YES NO DISCUSSION YES NO LISTS YES NO ARTICLES YES NO PATIENTS RESULTS YES NO	20	25	.32
15	To what extent did the members of the group move around or change places to observe things? NEVER MOVED 1 2 3 4 5 FREQUENTLY	28	27	.95
16	What percentage of the group expressed aloud their interpretation of the stimulus material? 0% 1 20% 2 50% 3 80% 4 100% 5	35	41	.29
17	For what percentage of the time did the tutor talk? ALL 1 80% 2 50% 3 20% 4 ALMOST NEVER 5	27	27	.99
18	Did group members add to the discussion or "chip-in" anytime they felt like it? NEVER 1 SOMETIMES 2 FREQUENTLY 3	61	74	.09

AUDIT

CONTROL GROUP

PLEASE CIRCLE THE NUMBER THAT IS CLOSEST TO YOUR ANSWER

No.	Question			
1	Was use made of sub-groups? NO 1 YES 2	4	15	.35
2	Were <u>tasks</u> set and explained in such a way as to make sure everyone participated? NO 1 YES 2	44	66	.16
3	Were <u>tasks</u> set and explained in such a way as to make sure everyone in the group was obliged ot think about the subject? NO 1 YES 2	58	67	.58
4	If there was a presenter, was it made clear to him/her exactly what was required? NO 1 FAIRLY CLEAR 2 PRECISELY 3	43	66	.14
5	What percentage of those present spoke to the group? TUTOR ONLY 1 20% 2 0% 3 80% 4 100% 5	40	63	.012
6	Was there opportunity for students to ask any question they liked? NO 1 YES 2	100	100	.34
7	Was some of the knowledge on the subject derived from the group members' collective experience? VERY LITTLE 1 2 3 4 5 GREAT DEAL	40	46	.26
8	Did you find yourself solving problems rather than receiving facts? JUST FACTS 1 2 3 4 5 LOTS OF PROBLEM SOLVING	49	61	.18
9	If someone was "presenting" was he/she given constructive criticism as to his/her performance by the tutor? NONE 1 2 3 4 5 ADEQUATE	42	59	.27

	Item			
10	What percentage of the group gave feedback to the presenter? 0% 1 20% 2 50% 3 80% 4 100% 5	31	59	.01
11	Were the feedback comments given by other students to the presenter modified, explained or endorsed by the tutor? NOT AT ALL 1 SOMEWHAT 2 IN DETAIL 3	60	67	.32
12	Were the actions, manners and attitudes of the group (including the tutor) discussed? NO 1 BRIEF MENTION 2 GIVEN IN DETAIL 3	13	18	.41
13	How much use was made of stimulus material (e.g. the patient's symptoms or signs or specimens)? NONE 1 SOME 2 GREAT DEAL 3	56	64	.27
14	Was use made of the following: HANDOUTS YES NO DIAGRAMMES YES NO DISCUSSION YES NO LISTS YES NO ARTICLES YES NO PATIENTS RESULTS YES NO	26	35	.23
15	To what extent did the members of the group move around or change places to observe things? NEVER MOVED 1 2 3 4 5 FREQUENTLY	14	13	.81
16	What percentage of the group expressed aloud their interpretation of the stimulus material? 0% 1 20% 2 50% 3 80% 4 100% 5	39	51	.21
17	For what percentage of the time did the tutor talk? ALL 1 80% 2 50% 3 20% 4 ALMOST NEVER 5	26	30	.63
18	Did group members add to the discussion or "chip-in" anytime they felt like it? NEVER 1 SOMETIMES 2 FREQUENTLY 3	62	73	.10

REFLECTIONS AND CONCLUSIONS

This was an ambitious exercise to be taken on single-handed and poses a number of interesting questions in retrospect. The purpose was to capitalise on a successful medical education intervention event, and attempt to prove its worth objectively. The fact that it failed to demonstrate changes in tutors' techniques after the **TIFT** was superficially frustrating - but an invaluable learning experience. The ways in which this would be done differently if a similar exercise were to be embarked upon in the future are summarised as Appendix IV.

Reflections

The preparation and execution of the survey took an immense amount of work. Over 70 tutorials were observed by an estimated average of ten students per tutorial. Each student answered up to 20 different questions about each aspect of the interaction. All the data was recorded, checked and scrutinsed, but a considerable amount was discarded as it was unmatched.

Price[8] has reported (subsequent to this research) an assessment of clinical tutorials and concluded his survey with written feedback to tutors as his intervention method. This was obviously not conducted on a blinded basis and is, therefore, itself not above criticism.

What the **TIFT** survey did demonstrate was that the students were able to respond responsibly to questions concerning tutorial technique. Whether this would have been more accurate and more insightful with preceding instruction remains an open question. Pastoll[10] in his book "Tutorials That Work" used trained student observers to obtain feedback on general tutorials (non-medical).

There was considerable interest generated when the results of this research were presented to the 1991 SAAME Conference. It appears that amongst medical educators, at least, there is a need for some objective evaluation of tutorial effectiveness and also inquisitiveness as to whether intervention helps.

The **TIFT** itself is a considerable expenditure of time, energy and finance. It would have been satisfying to have its worth assessed with some degree of confidence but, for the moment, the organisers have to be happy with the positive nature of the feedback as supplied by the participants themselves.

Future endeavours will be carried out with a great deal more wisdom, armed by the insights presented in Appendix IV.

ACKNOWLEDGEMENTS

Mrs Ann Lloyd of the Dean's Office assisted with the generation of the questionnaire, the supply of departmental timetables, student groups, as well as the names of those tutors nominated to attend the **TIFT**. The assistant, James Austin, a medical student was engaged to be in charge of the distribution, collection and collation of the questionnaires and also participated in the statistical analysis of the information. Mr Greg Pastoll kindly assisted with the generation of the questionnaire.

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APPENDIX I

A U D I T

TUTOR :
DATE OF TUT :
TIME OF TUT :
CO-ORDINATOR :
OBSERVER :

UCT MEDICAL FACULTY SMALL GROUP TEACHING QUESTIONNAIRE

This questionnaire is part of an ongoing survey of tutorial methods at Medical School. We would like you to assist by observing the specified tut (see above). Please read through the questionnaire in advance and consider the questions; go to the tut and pay attention to the aspects under consideration; and, after the tut, complete the questionnaire and return it to your group co-ordinator **immediately**.

This survey is being used to monitor the type of techniques being used in tutorials - it is not at all concerned with assessment of tutors. However, in order not to affect the events under observation, it is VITAL that the survey remain confidential - tutors must not know that their tutorials are being observed so please don't complete the forms in front of them. Please do NOT mention this survey either to tutors or to other students.

In the event of any difficulties please contact Dr A Kent (Chairman, Curriculum Evaluation Committee) - Ext 327

Thank you for your help!

PLEASE CIRCLE THE NUMBER THAT IS CLOSEST TO YOUR ANSWER

(1) Was use made of sub-groups?
NO 1 YES 2

(2) Were **tasks** set and explained in such a way as to make sure everyone in the group participated?
NO 1 YES 2

(3) Were **tasks** set and explained in such a way as to make sure everyone in the group was obliged to think about the subject?
NO 1 YES 2

(4) If there was a presenter, was it made clear to him/her exactly what was required?
NO 1 FAIRLY CLEAR 2 PRECISELY 3

(5) What percentage of those present spoke to the group?
TUTOR ONLY 1 20% 2 50% 3 80% 4 100% 5

(6) Was there opportunity for students to ask any question they liked?
NO 1 YES 2

(7) Was some of the knowledge on the subject derived from the group members' collective experience?
VERY LITTLE 1 2 3 4 5 GREAT DEAL

(8) Did you find yourself solving problems rather than receiving facts?
JUST FACTS 1 2 3 4 5 LOTS OF PROBLEM SOLVING

(9) If someone was "presenting" was he/she given constructive criticism as to his/her performance by the **tutor**?
NONE 1 2 3 4 5 ADEQUATE

(10) What percentage of the **group** gave feedback to the presenter?
0% 1 20% 2 50% 3 80% 4 100% 5

(11) Were the feedback comments given by other students to the presenter modified, explained or endorsed by the tutor?
NOT AT ALL 1 SOMEWHAT 2 IN DETAIL 3

(12) Were the actions, manners and attitude of the group (including the tutor) discussed?
NO 1 BRIEF MENTION 2 GIVEN IN DETAIL 3

(13) For every 10 questions asked by the students, how many were answered by the tutor and how many reflected back to the group?
TUTOR ANSWER 1 2 3 4 5 6 7 8 9 10
REFLECTED BACK 1 2 3 4 5 6 7 8 9 10

(14) How much use was made of stimulus material? (eg the patient's symptoms or signs or specimens)
NONE 1 SOME 2 GREAT DEAL 3

(15) Was use made of the following:

Handouts	YES NO	Diagrams	YES NO
Discussion	YES NO	Lists	YES NO
Articles	YES NO	Patient's Results	YES NO

(16) To what extent did the members of the group move around or change places to observe things?
NEVER MOVED 1 2 3 4 5 FREQUENTLY

(17) What percentage of the group expressed aloud their interpretation of the stimulus material?
NONE 1 20% 2 50% 3 80% 4 100% 5

(18) For what percentage of the time did the tutor talk?
ALMOST ALL 1 80% 2 50% 3 20% 4 ALMOST NEVER 5

(19) Did group members add to the discussion or "chip-in" anytime they felt like it?
NEVER 1 SOMETIMES 2 FREQUENTLY 3

(20) Were you told if you were to be assessed in the tutorial and, if so - how?

TOLD ABOUT ASSESSMENT	YES 1	NO 2
HOW ASSESSMENT TO BE MADE	YES 1	NO 2

APPENDIX II

INSTRUCTIONS TO DELEGATES

U C T MEDICAL FACULTY TEACH-IN-FOR-TEACHERS - 1991

"SMALL GROUP TEACHING"

Tuesday, 26 February 1991

1. Unselected groups of students
2. Group size - 4 to 12 (8)
3. One hour tutorial time
4. Venue - ward or Medical School
5. A student presenter will have prepared material - e.g. case to discuss
6. Some background knowledge will be presumed from the rest of the group.
7. The tutorial is one of a series (not a one-off)
8. Tutors will be expected to give some assessment of the students

APPENDIX III

UNIVERSITY OF CAPE TOWN

TEACH - IN - FOR - TEACHERS - 1991

QUESTIONNAIRE RESPONSES

The questions are presented in the order in which the Delegates gave the most clear cut responses. In this way, the strongest feelings and messages of the delegates will be reflected by this ranking.

1. DO YOU THINK ALL MEDICAL SCHOOL TEACHERS **SHOULD** HAVE INSTRUCTION IN TEACHING?

ESSENTIAL	1	2	3	4	5	NOT REQUIRED
%	70	22	8	0	0	%

COMMENT : This result speaks for itself - when do we start?

2. DO YOU THINK EVERY LECTURER SHOULD BE ASSESSED BY STUDENTS?

HIGHLY DESIRABLE	1	2	3	4	5	NOT NECESSARY
%	57	33	6	3	1	%

3. DO YOU THINK ALL TUTORS SHOULD BE ASSESSED BY MEDICAL STUDENTS?

HIGHLY DESIRABLE	1	2	3	4	5	NOT NECESSARY
%	52	36	6	5	1	%

COMMENT : Healthy outlook that staff feel this strongly about medical student opinion.

4. IF A COURSE IN TEACHING WERE AVAILABLE ON THE MEDICAL CAMPUS, WOULD YOU VOLUNTARILY ATTEND?

DEFINITELY	1	2	3	4	5	NOT INTERESTED
%	54	24	16	6	0	%

COMMENT : Supporting Question 1 - when do we start?

5. I ENJOYED THE DAY

VERY MUCH	1	2	3	4	5	WASTED MY TIME
%	38	40	11	8	1	%

COMMENT : Great - reflects social and hopefully learning benefits.

6. THERE SHOULD BE SOME FOLLOW-UP OR CONTINUATION OF TODAY'S TEACHING EXERCISE

STRONGLY AGREE	1	2	3	4	5	STRONGLY DISAGREE
%	42	32	10	12	2	%

COMMENT : The teachers present wish to improve - see Questions 1 and 4.

7. DO YOU THINK THAT THE PRINCIPLES OF TUTORIAL TEACHING AND LECTURING ARE SIMILAR? (Part of morning questionnaire)

SIMILAR	1	2	3	4	5	TOTALLY DIFFERENT
%	2	4	15	47	32	%

DO YOU THINK THAT THE PRINCIPLES OF TUTORIAL TEACHING AND LECTURING ARE SIMILAR? (Part of end-of-day questionnaire)

SIMILAR	1	2	3	4	5	TOTALLY DIFFERENT
%	0	4	21	45	30	%

COMMENT : Asked before and after, the delegates were aware of the differences.

8. DO YOU ENDORSE THE MOVE AT UCT MEDICAL SCHOOL AWAY FROM WHOLE CLASS LECTURES TOWARDS SMALL GROUP TEACHING?

WRONG DIRECTION	1	2	3	4	5	TOTALLY SUPPORT
%	4	7	21	31	36	%

COMMENT : In keeping with modern thinking.

9. I THINK THE OTHER MEMBERS OF MY DEPARTMENT SHOULD ATTEND A WORKSHOP SUCH AS I EXPERIENCED TODAY

STRONGLY AGREE	1	2	3	4	5	NOT NECESSARY
%	35	29	9	20	7	%

COMMENT : Maybe each department should go ahead to do this.

10. HOW MUCH DID YOU LEARN ABOUT SMALL GROUP TEACHING TODAY?

A GREAT DEAL	1	2	3	4	5	NOT MUCH
%	19	36	19	21	4	%

COMMENT : Satisfactory, but maybe a question about small group dynamics would have been revealing.

11. THE WAY I LEARNT ABOUT TUTORIALS TODAY WAS AN EFFECTIVE WAY OF LEARNING.

STRONGLY AGREE	1	2	3	4	5	STRONGLY DISAGREE
%	13	36	34	13	4	%

COMMENT : My personal disappointment that this was not considered more effective - learning for the organisers here.

12. I WOULD FEEL CONFIDENT ABOUT RUNNING A SIMILAR WORKSHOP FOR COLLEAGUES IN MY DEPARTMENT

NO PROBLEM	1	2	3	4	5	TOTALLY UNCONFIDENT
%	17	34	21	17	11	%

COMMENT : With a little help, this could spawn a whole spate of teachers.

13. I WOULD HAVE APPRECIATED MORE GUIDANCE AT THE BEGINNING OF THE DAY

VERY HELPFUL	1	2	3	4	5	NOT NECESSARY
%	15	19	15	21	30	%

COMMENT : Information for organisers again.

14. HAVE YOU RECEIVED ANY TRAINING IN TEACHING MEDICAL STUDENTS?

YES	NO
30%	70%

COMMENT : Authorities, please note.

15. IF YES, WAS THIS TRAINING, IN YOUR OPINION, ADEQUATE?

EXCELLENT	1	2	3	4	5	TOTALLY INADEQUATE
%	13	21	48	8	8	%

COMMENT : There is satisfactory training available.

APPENDIX IV

1. Questionnaire

Fewer and clearer points should be covered. The restriction to technique only should be resolved to cover attitudes, style and skills demonstrated.

2. Student Observers

Either the students should be given some instruction concerning observations of teaching events, or selected students trained to do this on behalf of a group. The alternative is to have "outsiders" from Teaching Methods or Staff Development Units present, but this would automatically raise bias.

3. Tutors

The spectrum of tutors observed needs to be more tightly controlled for experience, training, age, subject, year of teaching and ability.

4. Teach-In-For-Teachers

It is doubtful whether a single day interventionary session will have a profound or lasting effect on tutor-technique. There are no published surveys suggesting that this is the case - so as yet no evidence is available as to what or how tutor technique or overall effectiveness can be measured.

5. Statistics

Larger numbers are required, with fewer variables, greater homogeneity of participants and tighter end-points. Even if differences had been demonstrated, it would have been difficult to extrapolate the results to demonstrate benefit to the students - the ultimate supposed beneficiaries of this exercise.

CHAPTER NINE

A SUBJECT WHOSE TIME HAS COME?

Introduction

World Federation for Medical Education

Other Organisations

Special Interest Groups

National Organisations

Major Documentation

United States of America

United Kingdom

South African Situation

Conclusions

References

INTRODUCTION

Medical Education is a subject in its own right.

It has developed beyond all expectations over the last ten years into a subject, if not a discipline, of national and international interest.

A subject whose time has come is one where curiosity has turned to interest, interest to enquiry, enquiry to research and research to publication with information dissemination and exchange. This academic maturation has been accompanied by increasing involvement of individuals and corporate bodies in the process. International journals flourish and there is ongoing activity and influence of organisations such as the World Federation of Medical Education, the World Health Organisation, the Association for the Study of Medical Education, as well as conferences being enthusiastically patronised.

Innovative medical schools are well established with Problem-Based Learning and Community-Orientation strategies proving effective[1]. Many faculties are seriously reviewing and changing their curricula to provide the appropriate education for students to cope with the expectations of modern society and their patients within it. The winds of change in medical education are blowing strongly through Sub-Saharan Africa, demanding a response from those prepared to take up the challenge. The response should come from institutions with expertise, infrastructure and the will to actively review instruction and resource apportionment.

Maybe the events of the last few years in South Africa will provide the entree for co-operation with those of similar persuasions on the African continent.

The ease with which new information is transferred as it becomes available is one of the phenomena of our age. It is simple for innovative trends to be quickly adopted, standards to be established and deliberations of influential bodies and conferences to be distributed for consideration.

Much of the health care information available highlights the differences between the First World / Third World divide. On the one side, sophistication, enlightenment and preventative attitudes thrive while, on the other side, primary care, ignorance and intervention therapy are the order of the day.

South Africa, "as part of Africa", vividly reflects this dichotomy of standards with medical education being a neglected aspect in the scheme of priorities until now.

WORLD FEDERATION FOR MEDICAL EDUCATION

The World Federation for Medical Education (WFME) has, through the Edinburgh Declaration of 1988[2], been responsible for producing what has been called the Alma Ata of medical education. This was a result of the WFME conference and has been followed up in 1993 with a second World Conference with the theme "The Changing Medical Profession : Implications for Medical Education".

The 1988 world conference was a highly significant event, exemplifying the extent to which international co-operation is possible. It demonstrated the willingness of different interest groups to combine forces and may well lead to international benefits that will hopefully now include South Africa. The funding sponsors included WHO, UNICEF, the Rockefeller Foundation, the Carnegie Corporation of New York, the Gulbenkian Foundation, the WK Kellogg Foundation, the Juan March Foundation, the Wellcome Foundation, the British Council, the Council of Arab Ministers of Health, plus many individuals of international and national influence.

The Declaration has been adopted as a mandate for change in medical education worldwide as well as being endorsed by the World Health Assembly in 1989. Much has flowed from these resolutions on national and institutional levels, significantly in Africa through the Abuja Ministerial consultation in July of that year[3].

The influence of the 1993 World Conference, again held in Edinburgh where that university set up the Federation headquarters, is calculated to have international repercussions. There are six regional conferences planned for 1994 to implement the recommendations. Africa, the Americas, South East Asia, the Western Pacific, the Eastern Mediterranean and Europe are the regions where the subsidiary conferences will be convened under the auspices of the Associations for Medical Education of WFME and the World Health Organisation. South Africa is being made welcome (Walton - personal communication) and must participate in these international events if a co-operative role in Africa is to be achieved. New political acceptability should be matched by action and participation with the international community.

Apart from the WFME International World Conferences, the "Ottawa Conference" format has commanded considerable interest. The Fifth Ottawa Conference was held in Dundee, Scotland in September 1992. The theme was "Approaches to the Assessment of Clinical Competence". It was attended by 580 delegates from 40 countries, and the proceedings summarised 132 individual papers and 32 poster presentations, making it the largest international meeting on medical education ever held. The next meeting is in Toronto in June 1994.

OTHER ORGANISATIONS

In 1990, the World Health Organisation (WHO) consolidated its stake in medical education when it issued a document entitled "Changing Medical Education : An Agenda for Action"[4].

The Director General of WHO, Dr Hiroshi Nakajima, cited in a **Medical Education** editorial[5], foresees a "post-Alma Ata paradigm" in which the WHO policy of "Health for all through primary health care by the year 2000" is implemented. Co-operation within regions along the lines of the WFME plans would go a long way to consolidating such efforts efficiently.

Another world body, the United Nations Children's Fund also indicated its interest in the field of medical education by adopting resolutions that demanded medical schools implicitly to instruct students in the care of children and their mothers[6]. A similar call has been made by the International Federation of Gynaecology and Obstetrics (FIGO) in its "Safe Motherhood Initiative", with special concern for maternity care in developing countries.

UNESCO, with its responsibility for universities, has entered the medical education arena by sponsoring reorientation of medical education on a national scale throughout Portugal[5].

SPECIAL INTEREST GROUPS

Evidence of the importance of medical education in the United Kingdom has been demonstrated by the establishment of diploma and degree courses at the Universities of Cardiff and Dundee, with high profile activity emanating from St Bartholomew's,

Edinburgh, Leeds and Southampton universities. At least two prestigious Traditional medical schools are embarking on twin-track or Innovative curricula in the near future.

The King's Fund Centre in the United Kingdom[7] has previously been mentioned, but other funding organisations are extremely active in the promotion of in-depth reviews in the United States of America. It has been reported that 25% of medical schools are receiving financial support from groups such as the Robert Wood Johnson, Rockefeller and the W K Kellogg Foundations, as well as the Pugh Charitable Trust, for changing their educational programmes[8].

The concept of peer tutoring is receiving considerable impetus from BP (UK) and their support of the Peer Tutoring Consortium in London.

Computers have already been discussed as the fastest growing domain in the educational world and journals such as **Computers and Education** carry increasing numbers of articles directly associated with medical education or with bearing on the medical education sphere.

The discipline of Obstetrics & Gynaecology holds international workshops on undergraduate medical education biennially, as reported by Purdie[9], and there is every indication that these will increase in popularity and importance and possibly be adopted by other disciplines.

NATIONAL ORGANISATIONS

Because of South Africa's traditional association with the United Kingdom and Europe, many of the trends and much of the lead for change is taken from those countries. The Association for the Study of Medical Education (ASME) lays claim to having the senior

journal in its field internationally, **Medical Education**[10] and promotes active participation in conferences, workshops and study groups.

The Association of Medical Education in Europe has followed as a natural progression with the consolidation of that continent financially and scientifically. Members of these organisations receive frequent newsletters and information on the considerable activity in medical education in the UK and Europe. Other leading journals are **Medical Teacher**, **Academic Medicine** and **Teaching and Learning in Medicine**. The **British Medical Journal**, the **Lancet** and the **Journal of the American Medical Association** carry regular articles and features reflecting the central nature of medical education in academic health matters.

It is of interest to note that the **British Medical Journal** in 1992/3 published a series of articles by the Assistant Editor, Stella Lowry, which highlights the defects, changes and future of medical education in the UK. This series has been subsequently published in booklet form[11].

The King's Fund Centre produced a document in 1991, entitled "Critical Thinking: The Future of Undergraduate Medical Education" by Towle[7] that has proved a watershed document in the rethinking of education in Traditional medical schools. The same Centre now produces a newsletter, entitled **Change in Medical Education** which enjoys wide circulation, as do other "local" publications such as **LINK** from the University of Leeds[12].

Most South African Medical Schools are based on the British system where interest in medical education in general does appear to be showing a remarkable resurgence. The eight medical schools in Southern Africa have all expressed an ongoing interest in the medical education field. The Deans of the Faculties have consistently supported medical education development and, in particular, the South African Association for Medical Education (SAAME).

The Association's conferences have been well attended and the Newsletter enjoys increasing circulation figures. It will undoubtedly be well-positioned to play a leading role in orchestrating anticipated developments, such as African co-operation, political manipulations (notably threatened cut-backs), co-ordinating Academic Support Programmes and sharing computer technology advances.

The South African Association for Research in Development in Higher Education (SAARDHE) is also a thriving organisation producing pertinent research for the medical profession on learning theory based on the experience of Academic Support Programmes in the general university as well as medical faculties.

In various specialist fields there have been examples of renewed interest in medical education. For example, in 1988, 1990 and 1992, the South African Society of Obstetricians and Gynaecologists held a Medical Education session at their national conferences. These have been oversubscribed in terms of papers and posters, and the involvement of the Heads of Departments *en masse* was extremely encouraging.

UCT has decreed that all staff and courses will be assessed on an annual basis. The Distinguished Teacher Awards remain incentives because of their prestige and the considerable purse attached. The Teaching Methods Unit has recently embarked upon a large scale study involving medical student learning.

All this activity supports the notion that medical education is indeed a subject whose time has come.

MAJOR DOCUMENTATION

Every discipline has documentation or publications that have changed its course. These are sometimes fundamental scientific breakthroughs, research articles or discoveries.

In the case of medical education, two organisations published reports soon after the start of this decade which will have a considerable influence on medical education thinking in the Western World. These are from the United States and the United Kingdom and are reported here in some detail because of their particular bearing and influence on the South African scene.

United States of America

The paradigm shifts and energetic reviews taking place in the Americas represent the First World cutting-edge of medical education. Their willingness to confront major problems, not just in the health care delivery system[13] but basic change in medical education, is eloquently spelled out in the Robert Wood Johnson Foundation Commission Report[8]. The eclectic wisdom contained in that document demands that it be reviewed here and read in full by everyone concerned about the future of medical education.

The report emanates from the United States where the climate is that of change. Many Traditional medical schools are leading the way in changing to **student-based** enquiry, discovery and learning, allowing their education systems to respond to the problems of integration, relevance and curriculum overload. There is consensus for a need to move away from standard pedagogy towards inter-disciplinary approaches on the following levels:

- The incorporation of medical science throughout the course
- Biological facts must be balanced by behavioural or social sciences knowledge

- Ethics, informatics and epidemiology must be subjects that are understood and integrated throughout the teaching / learning continuum
- The venues and contexts of training must be broadened to give a lateral / holistic, as well as a longitudinal and unfolding perspective of health and ill health
- Academic progress (not narrow knowledge) must be assessed compatibly with all of the school's goals
- **Faculties must invest in an organisational authority to plan., evaluate and review medical education**
- Revision must be implemented and teaching excellence rewarded.

The Flexnerian notion of basic biological science building blocks on which the clinical tuition can be constructed is increasingly being seen as an "inadequate structure". Inter-disciplinary ties are being broken down by molecular, cellular, structural and neural biology. This shift is seen as the catalyst for weakening the divisions between disciplines in the basic clinical sciences .

Under-recognised in the Commission's view are the psycho-social aspects of the American scene. There are suggestions that medical education's "manifest humanistic mission" is being shouldered aside by the "true mission" of medical school personnel - that of medical research. The Commission also maintains that the new generation doctor will need to be **as conversant** with maintaining functions as with cure.

An editorial by Buckley[14] in the British-based **Medical Education** eloquently describes the impact of the report. The well-argued points resonate for the UK establishment and it would be surprising if they were inappropriate in the South African context.

The recommendations are summarised as follows:

- Every medical school would have an appropriate undergraduate organisational authority for revising programmes and rewarding excellence.

- Integration of the sciences of medical practice throughout the entire course of study.

- Doctors are required to have an understanding of the behavioural and social aspects of health and disease.

- Medical education should include experiences that prepare students for practice and communities where barriers to access are most evident.

- There should be integration which includes examinations of an interdisciplinary nature.

There have been five other national Commissions on health care delivery in the United States of America over the last ten years, and all of these have focussed attention on medical education and, more especially, on learning strategies. Apart from Problem-Based Learning, the concept of "Co-operative Learning" has become extremely popular. This again reflects the responsibility for learning back to the student and takes advantage of the fact that medical students will respond to personal challenge, have enquiring and creative approaches, and tend to work well as pairs or in groups. This movement, promoted by Johnson & Johnson[14] and Smith[15] complements Self-Directed Learning and Problem-Based Learning. It is highly likely that this method will be acceptable in Traditional medical schools and may provide the medium for creative and innovative change. It is certainly the model that should be most energetically pursued

by South African medical schools who wish to change in an evolutionary rather than a revolutionary way.

The Americans are concentrating on genuinely preparing their present graduates for practice in the next century which they see as fundamentally different from today. They see biological science changed out of all recognition and primary US physicians involved in health promotion, with information gathering, processing and dissemination as an important component of their function. The social and behavioural sciences skills required by the new physician will demand a different approach to their learning. The suggestion is that it should be more experiential with stronger links to ethical and community values.

The new approaches contemplated are more congruent, both with the perceived social needs and the attributes of the students joining their medical courses. There are even indications that Innovative curricula may be attracting a new type of medical student[16].

United Kingdom

For historical reasons, the conventional or Traditional medical school model of the United Kingdom (UK) has been adopted by almost all the medical schools in South Africa. Many of the founding Heads of Departments at UCT were from the UK or had trained there. Political associations through the British Commonwealth, plus the reliance on English language textbooks, have strengthened these links.

It is, therefore, useful to look at the strengths and weaknesses of that system, and measure them against the present day requirements of this country and those projected for the "New" South Africa.

The English angst about their medical education strategies has become more vociferously expressed over recent years. The origins of this disquiet derive from a number of sources :

- The continued research into medical education within the British Isles through the Association for the Study of Medical Study (ASME) has stimulated interest and focus.
- The Centres for Medical Education at Dundee, and later in Cardiff, have been instrumental in making that country the leader in education training.
- Critical reviews concerning the dissatisfaction of medical students with their training have caused a radical re-think[17].
- Various reports from the General Medical Council (1980[18], 1990a[19] and 1990b[20]), have first suggested and then insisted that new directions in medical education are to be adopted.
- The King's Fund Centre Report in 1991, entitled "Critical Thinking: The Future of Undergraduate Medical Education"[7], was indeed critical of the status quo.
- The financial stringency within the National Health Service, and its radical change in referral and function, have caused considerable deliberations.
- The Thatcherite principle of accountability and "self funding" has made auditing of all services, including medical teaching, more fashionable. The Centre for Medical Education at the University of Dundee has published a highly recommended book on this very issue[21].
- The Standing Committee of Postgraduate Medical Education (SCOPME) which produced a document in mid-1992 entitled "Teaching Hospital Doctors and Dentists to Teach: Its role in creating a better learning environment"[22] uncovered large areas of **concern about the ability of**

teachers to teach, their access to academic courses in medical education and their reward.

- The book, "Medical Education" by Lowry[11], produced in serial form in the **BMJ**, gives no cause whatsoever for complacency.

The situation is summed up by the following quotation from the SCOPME Report:

> "The need for change is urgent if the system for training hospital doctors and dentists is to meet new challenges. Nevertheless, because of the paucity of research, the lack of operational data, and the need to create ownership of any changes by those responsible for implementing them, the group has proposed an outline strategy for change"
>
> - SCOPME Report[22]

This document goes on to propound the draft principles for the way forward to modern learning strategies. These are in the form of a "Code of Good Practice for Creating a Better Learning Environment" and are summarised as follows:

1. The adoption of learner centredness and the provision of training to achieve this
2. The creation of a coherent system of learning
3. The development of **learning contracts** linked to a staff appraisal and development programme
4. The evaluation of teacher training programmes and the assessment of outcomes
5. Rewarding success in education
6. The harnessing of existing knowledge, expertise and resources

The document, however, that is set to significantly change the fabric of medical education in the UK is Towle's "Critical Thinking"[7]. It is a consensus document with clarity of thought and reasoning that makes sense. It has been the subject of a Dean's Review by all the UK medical faculties and the recommendations are presented here as they are highly pertinent to the South African situation.

This influential group found widespread agreement on the need for change in undergraduate medical education and the principles which should form the curriculum of the future. In summary, these are:

Agreement

- Reduction in factual information
- Active learning (the enquiring doctor)
- Principles of medicine (core knowledge, skills, attitudes)
- Development of general competencies (e.g. critical thinking, problem-solving, communication, management)
- Integration (vertical and horizontal)
- Early clinical contact
- Balance between hospital / community; curative / preventive
- Wider aspects of health care (e.g. medico-legal / ethical issues, health economics, political aspects, medical audit)
- Inter-professional collaboration.
- Methods of learning / teaching to support aims of curriculum.
- Methods of assessment to support aims.

Action

The report stated that if major change is to occur in undergraduate medical education through the planning and implementation of curricula based on these principles, several

key issues must be addressed in relation to curriculum design (Statements 1 - 4 below), and to implementation of change (Statements 5 - 8 below).

Statements

1. Definition of the core knowledge, skills and attitudes which undergraduates need to learn in relation to what a new graduate is expected to be able to do.
2. Integration of teaching, both horizontally between clinical disciplines and vertically between pre-clinical (basic, behavioural and population sciences), and clinical sciences.
3. Introduction of Self-Directed Learning in order to encourage students to take responsibility for their own education as undergraduates and throughout their professional careers.
4. Development of appropriate systems of assessment to support the aims of the curriculum.
5. **Recognition for teaching so that it is perceived as an important activity, comparable in status to clinical, research and management activities.**
6. Training for teachers / staff development so that curriculum development, teaching and assessment are done professionally and that all staff subscribe to the aims of the curriculum.
7. Definition of where students should learn in order to achieve the aims of the curriculum, and consideration of resource and logistical implications.
8. Management of change within medical schools to facilitate the introduction and continued development of new curricula.

SOUTH AFRICAN SITUATION

The fact that South African medical education is being asked to face major new challenges is not in doubt. The particular financial, academic, demographic, authority and political pressures and constraints have been outlined in the first section of this dissertation.

The First World countries from which the lead has been taken in the past, such as the United Kingdom, the United States of America, Australia and Canada, are energetically exploring solutions to the problems. South Africa's problems are, however, unique and urgent. The imminent, if not already present, slide of the economy to the status of a Third World nation is going to demand pragmatic solutions.

The lumping of medical education with that of the delivery of health care is distinctly unhelpful, but is a fact of the South African situation. The tertiary teaching hospitals have had to bear a considerable service load, while development of the primary and secondary tiers of health delivery has been neglected. These tertiary centres of excellence are now being forced to cut budgets and the one area being targeted most particularly is that of academic staff.

Very little, if any, national consensus on medical education has been asked for or produced. There have been no proposals from within the profession as to suggested methods of cost-saving, different "streams" of practitioners or health care workers, and certainly no overview or review on projected requirements of medical schools. The only report in recent years has been the Steinmetz Commission[23] that was a unilateral quasi-governmental document that has not been available for study or debate.

It may well be that the priorities of a Third World nation do not run to research in tertiary education and in particular medical education, in the eyes of the administrators. This would be a spurious and short-sighted philosophy as solutions to this country's problems are certainly not importable. The other major reasons for investing time, energy and effort in this direction are:

- the urgency of education and health care for the burgeoning population
- the raised expectations of the previously disadvantaged majority of the population
- the need to maintain academic excellence through research in the face of decreasing budgets
- the educational co-operation that is surely going to be expected of us by our northern neighbours

The medical profession as a whole (incorporating the South African Medical & Dental Council, the Medical Association, the College of Medicine, and all the medical faculties) needs to be proactive in maintaining public confidence in the profession. One of the ways in which this can be achieved is by indicating a firm commitment to the maintenance and improvement of the standard of doctors graduating from the indigenous medical schools.

The student population change occurring in our medical schools provides an outstanding opportunity to look at learning methodologies, strategies and intervention techniques.

The demands from the new generation of South Africans for health care may provide another opportunity for experimentation with twin-track education systems or "alternative health care professionals". The health care delivery

system is in a state of flux with the dismantling of the structures of Apartheid and the indications of a unitary national health policy in the making.

The laws governing the medical aid societies, billing of patients, the rise of health management organisations and independent practitioner associations demonstrate the opportunity for change that is prevalent in this country.

Surely this opportunity must not be missed by the medical educators?

UCT Situation

Is Medical Education a subject whose time has come at UCT? On every academic level, the striving for and achievement of excellence at UCT / GSH has been a feature of the Faculty's endeavours. The resulting reputation has placed it squarely in the forefront of research, postgraduate education, and special service commitment in Africa and internationally. Has undergraduate education kept pace? How is such a question to be answered?

If the answer lies in attracting the "brightest and best" school-leavers and producing competent graduates with good results - then the answer is affirmative. These are, however, superficial criteria in that students may be attracted by the reputation of the institution rather than the quality of the undergraduate teaching. Other medical faculties have comparable final year pass rates, so that too is a dubious benchmark.

If other questions were to be asked, the answers may be not as ready. Examples of such questions could be : Does the UCT Medical Faculty have

- a modern teaching strategy
- a unit of medical education
- courses that educate the undergraduate teachers

- any audit of teaching
- means of recognising and rewarding teaching excellence
- current and ongoing research in the field
- any plans to move to community-orientation
- teaching beyond the tertiary referral centre?

If the responses to these queries are readily available and positive, then undergraduate education at UCT is in good health. If not, it would then appear that the time is right for the subject to be taken more seriously.

There is evidence to suggest that PBL is a teaching strategy that is at least as good as traditional methods and clearly better in certain areas[1]. There is also evidence that disadvantaged UCT pre-clinical students respond with enthusiasm and remarkable facility to PBL-like teaching in the MEDASP courses thus far.

The unremitting pressures on academicians indicate that it is time to draw on other resources for teaching - such as health care providers beyond the tertiary referral centre, multi-media educational technology and, more importantly, the students themselves. There needs to be a cohesive initiative from the clinicians to ease their teaching load by communicating what they require of the pre-clinical disciplines to give the students a flying start when reaching the clinical years. The clinicians, themselves, need to teach less and trust the students' ability to learn more.

It would appear that the time is indeed ripe for the subject of medical education to enjoy a higher profile at UCT.

CONCLUSIONS

There is such worldwide interest in medical education at the present time that the 1990s can be seen as the window of opportunity for the subject.

International organisations are engaged in purposeful activity with innovation the order of the day. Documentation of evolutionary and revolutionary changes in curriculum strategies have been forthcoming from prestigious institutions.

Southern Africa needs to shake off its complacency about the methods of student learning currently in place in all but one of its medical schools. The political climate suggests that well thought through appropriate changes would be welcome.

The debate has started in the rest of the world - South Africa needs to join in that debate.

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CHAPTER TEN

PRACTICAL RECOMMENDATIONS

Introduction

Recommendations

General

Specific to the University of Cape Town

Summary

Conclusions

References

INTRODUCTION

One of the major problems confronting medical education in South Africa is ignorance about the present state and future requirements of medical school undergraduate teaching. More pressing agendas in medical faculties on financial and political levels take precedence. Increasing service, research and management demands receive priority.

The exceptional quality of graduates produced by the South African medical schools has allowed complacency to suppress enquiry and it is simply not known whether South African medical education is equipped to deal with future demands. The pressures for change are undeniable but, so far, the response has been mute.

Many First World countries have established Innovative medical schools, centres for medical education, extensive research programmes, national and international conferences, and are aware of the problems they face.

Is it conceivable that South Africa is immune to the medical education problems that are profoundly affecting these countries?

The recommendations made are in three categories:

Category 1. General South African recommendations (numbers 1 and 2).

Category 2. Recommendations specific to UCT (numbers 3 and 4) .

Category 3. Recommendations (numbers 5 - 11) are again applicable to UCT and address the question of curriculum philosophy or strategy, and are presented as developments of the SPICES theme of Harden[1].

RECOMMENDATION 1

It is recommended that the South African Medical & Dental Council (SAMDC) conducts a National Review to examine the appropriateness of Medical Education in all medical faculties throughout South Africa

South Africa's unique and complex situation demands that the most efficient teaching / learning methodology is defined and incorporated into its medical education systems. America and Britain have diligently looked at these systems and found them wanting[2-3]. South Africa has not looked, not seen, and presumed that all is well.

Is this a classic de Bono "Catch 23" situation? "It is clear that something may need doing, but it never makes sense to do it at any particular moment"[4]. Perhaps it is time that attitudes should change to move away from the conservative mind-set that has pervaded this country's broad educational thinking of the last forty years. Either more attention needs to be paid by those in authority to Medical Education, or South Africa runs a serious risk of losing its pre-eminence in this field.

Does the will exist to explore the situation?

RECOMMENDATION 2

It is recommended that, when looking at the appropriateness of medical education, the SAMDC examines the need for and feasibility of establishing a training centre for medical educators.

There needs to be a collective response from South African medical educationalists to the opportunities that are being afforded by the WFME World Conference and the regional conferences that will follow. The African initiatives of that organisation[5] and the WHO "Task Force for Africa"[6] derived in 1989 take on new meaning and open new possibilities because of the country's changing political status.

South Africa's infrastructure, reputation, expertise and experience make it potentially pivotal in the development of medical education on this continent. If Harden trains Third World health care educators in Dundee, Scotland and De Virgilio instructs primary health care managers in developing countries in Rome[7], is it too ambitious to think of a centre for training medical educators south of the Limpopo? Such a centre could assist the education and development of all health care workers, be a resource centre for information and distance learning and research the effectiveness of new strategies.

UCT RECOMMENDATIONS

RECOMMENDATION 3

It is recommended that the University of Cape Town establishes a Centre for Medical Education for the education of health care teachers

The Medical Faculty of UCT is a large, expensive and prestigious part of the greater University. The considerable number of students represents a massive investment in terms of skills, responsibility and finance. It is incumbent upon the university to provide sufficient teaching expertise to back this investment. Accreditation,

certification, proof of teaching competence and feedback on quality need to be formally evaluated in a manner that would be acceptable to the teachers.

If this, in the case of UCT, means extension of the Teaching Methods Unit to the Medical School or linking with the Education Faculty, then these avenues need to be explored. If the Medical Faculty is serious about providing leadership in medical education in South Africa, then the goal of a Centre for Medical Education on the medical campus must be its recommendation. This must be done without waiting for external suggestions. It is clearly needed and would tie in with the Medical Academic Support Programme.

Such an initiative would be in keeping with reports from abroad and the latest recommendations of Biggs & Price[8]. The twin purpose of facilitating change within the faculty and the provision of teaching courses for health care professionals in South Africa and beyond its borders could be met. Growth of the general university resources mentioned above would provide a natural forward progression from the established Undergraduate Medical Education Committee.

If long-term educational planning and research is to be conducted, then this cannot realistically be done by busy clinicians and medical school staff with expanding administrative tasks and growing committee commitments in the face of decreasing support structures. The calls for professionalism, staff development and the implementation of innovative strategies will remain amateurish unless infrastructure, time and resources are invested to back up well-intended initiatives.

RECOMMENDATION 4

It is recommended that the teaching skills of its medical staff be enhanced and recognised and rewarded

It is recommended that all teachers be educated in the art of undergraduate teaching but that there would be two "types" of medical teachers. The first would be the standard teachers whose main interest lay in research commitment or administration, but whose contracts and interests included undergraduate teaching. These rank and file teachers would attend basic short (but updated) courses in teaching skills - either given by teaching units or by the "career teachers".

This second group of "career teachers" will be described later, but would be genuine enthusiasts with training and career structures that are clear and accepted.

The Teacher's Role

> "Until teaching is recognised to be an important professional activity (comparable in status to clinical service, research and management) it is unrealistic to expect those involved in teaching to devote the necessary time and effort to planning and implementing any new curriculum"
>
> \- Towle[2]

The intellectual imperatives addressed thus far are general concepts requiring two types of teacher but, if accepted and agreed to, these ideas could be left high and dry without the

back-up of a structure for action. University, faculty or departmental changes require commitment from those in authority and the following recommendations are meant to assist departments plan and assist their members in carrying through new teaching / learning advances.

Overview

In Traditional medical schools, all academic teachers are attached to departments. Since teaching is planned, shared, examined and reviewed within departments, these structures have a major role to play in the development of medical education. Those in the clinical years need to devise mechanisms for sustaining and rewarding clinical teaching[8].

Head of Department

The success or otherwise of the undergraduate teaching reflects very much the Head of Department's involvement. This does not necessarily mean personal involvement, but the concern and management of the teaching staff and undergraduate programmes. It is unusual for any Head of Department to be the chief undergraduate convener, as this task is usually delegated to a staff member with a particular interest in this aspect of academic life.

Departmental Undergraduate Teaching Convener

Such a member of staff should not only be someone with a declared interest and enthusiasm in medical education, but one who has had training in the field. It would be important that the Head of Department appoints a convener for undergraduate education who is both recognised and qualified to carry out the innovative educational and administrative tasks. If the convener has no training in medical education, this must be rectified by attendance at courses either in-house or externally. Once acquired, such expertise should be recognised.

The teaching convener would be involved with the following:

1. "Staff development programmes are needed, not only to make teaching a more professional activity, but to help in developing a shared view of the philosophy of the medical school and to ensure all staff work together to help students achieve the objectives for the course rather than teaching their own subject/speciality in isolation. Medical education or teaching skills need to be put on a par with service, research and management"

   \- Towle[2]

2. The planning of a "Medical Education Forum" on an annual basis to discuss, with all departmental members concerned, not only teaching commitments but also innovations in teaching methodology and the formulation of texts and assessment.

3. The convener should initiate some mechanisms of quality assurance of the teachers. This can be in the form of student feed-back or on a more formal basis by teaching being monitored by colleagues in the same department or by external personnel. An ethos of evaluation can be established to allow assessment of all aspects of the programme. Structured reviews strengthen participant's respect for teaching.

4. It would be up to the convener of teaching to review the texts produced by departments and/or the textbooks recommended. These may take the form of lecture notes, handouts, log books, manuals, or the departmental teaching programmes. Once a core curriculum has been developed with selectives, electives or options, this would also require regular review by the convener. Core curriculum needs to be decided by a panel, rather than by only the Head of Department, the convener or any individual.

Such a core curriculum should have the input of trusted general practitioners or other members of academic staff outside that discipline or department.

5. The convener's most important task would be to function as the departmental representative on a revamped, respected and potent UMEC. To be part of a team of educators working (in allocated time) towards the implementation of new strategies, co-operation and research **should** be this committee's true goals.

RECOMMENDATION 5

STUDENT-CENTRED LEARNING VERSUS INSTRUCTOR-DOMINATED TEACHING

It is recommended that a more student-centred approach be adopted

The thrust of this recommendation is that students be required to take more responsibility for their own learning. It must be increasingly their motivation, involvement and initiative that drives the learning process. For this to happen, two attitudinal criteria have to be fulfilled:

(i) The teachers must respect this shift of responsibility and adopt a new attitude to their teaching.

(ii) The students must be informed about the response expected of them, they must be trusted to accept the responsibility, and be taught how to learn.

It must be made clear to students what the teachers expect of them. Not only is this shift in emphasis required to be made known, but the students also need to be actively taught about the teaching / learning process. This does not simply mean the disadvantaged student in the Academic Support Programmes, but advising all students about how to get the best out of the vastly varying learning opportunities that are afforded them.

If students were taught note-taking skills, what constitutes poor or good lecturing, and the components of pedagogy in clinical teaching, then feedback would be more reliable and taken more seriously.

The transition from the pre-clinical to the clinical situation requires students to learn how to derive the most benefit from the complexities of tutorials, bedside teaching, ward rounds, clerking and case presentations. If they are clearly made aware of the inter-action both expected and hoped for of them by their tutors, this would not only permit them to be more responsive and interesting students, but would shift the balance of responsibility for learning towards where it should be. Interaction, questioning, debate and the demand for approaches and principles need to come from our students in a non-aggressive, assertive and acceptable way. They would benefit by being aware of the attitudes of the teaching staff they meet, their own attitudes and the effect these have on the process. Seager[9] recommends the teaching of attitude development to facilitate the process.

They also need to understand their own maturation, emotionally, intellectually and ethically. They need to be given permission to be comfortable with the process of their own personal development' as articulated by Perry[10]. Insights can be developed using techniques such as psycho-drama with role reversal, videos, peer teaching, as well as workshopping the question of abuse awareness and the handling of it.

Students need to be "brought on board", become part of the team, "join the fraternity" - in short, to join a partnership of learning. In adult learning, there is a considerable enhancement or inhibition if "process" is, or is not understood by both the learner and the teacher. A little emphasised but critical factor is that of ignorance and embarrassment. Adult learners are acutely sensitive and demotivated by exposure of their ignorance. Their willingness to become involved in a process that might expose this sensitivity is not willingly given. Their knowledge and skills increase with experience and time and they gradually become more confident. With this confidence comes a greater willingness to expose their ignorance. Risks start being taken, involvement and inter-action occurs and the whole process snowballs. Part of teaching teachers to educate correctly is the awareness of this progression and how easily it can be retarded by abuse. Teachers must understand the process every bit as much as the student does.

If teaching is the conveying of enthusiasm then attitudes are the essence of learning. The situation of enthusiastic teachers with motivated learners does not just happen. The combination requires the teachers to be confident enough in their knowledge of the teaching process to move from centre stage to the facilitatory wings, allowing student-centred learning to occur.

RECOMMENDATION 6

PROBLEM BASED VERSUS INFORMATION GATHERING

It is recommended that Problem-Based Learning be introduced as a strategy in the pre-clinical years

To suggest that UCT changes to a PBL curriculum is probably too profound a change to find acceptance. It should, nevertheless be looked at as a viable option for the future. It

should be possible to make use of the positive aspects of group learning and problem-solving by using the PBL approach.

As Norman[11] points out, the concepts of PBL, problem-solving skills and how to solve problems are not necessarily interchangeable. Small group learning through PBL or Co-operative Learning does offer considerable advantages in the teaching and learning of the behavioural sciences and, given the diversity of the student population, this must be explored with vigour. At the very least, early clinical contact, a quantum reduction in content, and community exposure should take place in the pre-clinical years.

RECOMMENDATION 7

INTEGRATED VERSUS DISCIPLINE-BASED

It is recommended that selected subjects be dealt with across academic years and disciplines

The concept of horizontal integration is that of inter-disciplinary connections being made between subjects taught during the same chronological frame of the curriculum. This does not happen in Traditional medical schools, resulting in criticism of the rigid balkanisation of knowledge domains.

Vertical integration occurs when the barriers between the basic sciences in the pre-clinical years and the knowledge, skills and attitudes of the clinical years are broken down and the continuum acknowledged.

1. Pre-clinical disciplines should ask clinicians to have input into their core curriculum derivations and include at least some lectures by each of the major clinical disciplines in their syllabi. Horizontal integration can be

achieved by the setting of examination questions which transcend the subject / discipline divide.

2. The second method of promoting Problem-Based Learning without turning the medical school on its head is by introducing Problem-Based Learning or Co-operative Learning in "inter-disciplinary" subjects.

   Skills and attitudes transcending disciplinary boundaries could be defined and taught by Co-operative Learning, group learning, Self-Directed Learning and project techniques[12]. Subjects that could be tackled in this way could be communication skills with the emphasis on interviewing, consulting and counselling. Others such as ethics, exercise medicine, dietetics, computers, informatics and AIDS and most of preventative medicine could all be profitably dealt with in this manner.

RECOMMENDATION 8

COMMUNITY VERSUS HOSPITAL BASED

It is recommended that venues away from the traditional teaching hospital be utilised for learning

Traditional medical schools developed in tandem with hospitals that used to have a much wider spectrum of patients than the tertiary referral centres of today. This metamorphosis has narrowed the range of pathology encountered and created a concept of high-tech interventionary medicine for students. Aggravating the idea is an increased emphasis on ambulatory care and short hospital stays.

Preventative medicine and positive attitudes to healthy life-styles have increased in importance, as has primary health care. To counteract the teaching hospital imbalance, each major discipline should identify the "most Community-Oriented" aspect of their care and arrange for this to be taught in the community, by people not necessarily considered as the most conventional teachers.

A second way of redressing the skewed perspective would be to take the inter-disciplinary subjects mentioned before and teach them in peripheral hospitals, community centres, hospices, addiction centres and schools.

Peer tutoring is an untried concept in South Africa, but thrives as a highly innovative and attractive learning mechanism. The BP Student Tutoring Programme in the UK has expanded from 5 to 115 colleges in recent years[13].

The potential of learning from general practitioners is a locally untapped source of highly relevant motivational learning.

RECOMMENDATION 9

ELECTIVES VERSUS STANDARD PROGRAMME

It is recommended that all disciplines establish their core curriculum plus selected topics

All teaching departments must be required to define both the core curriculum and selective, elective or optional areas of interest within that discipline. Texts, usually generated by departments, and examinations should reflect this differential between core and selected items. It has been suggested that 50-70% of each subject's time should be devoted to the core curriculum and the balance to selectives, electives or

options. The core curriculum should teach principles of clinical skills, pathophysiology, disease patterns and approaches to clinical management.

Once the concept of selectives within disciplines is accepted, the expansion of electives on an interdisciplinary basis is a logical progression. In the clinical curriculum there should be a time allocated for students singly, in pairs or groups to study a subject in depth and present their findings in verbal and written format for assessment.

The idea has already been put forward by the Clinical Years Sub-Committee of the UMEC and has received support, but will require considerable "political clout" for time to be freed up for its incorporation.

RECOMMENDATION 10

SYSTEMATIC VERSUS OPPORTUNISTIC

It is recommended that each discipline organises its students' teaching time to cover, in a systematic way, the core curriculum

The opportunistic nature of apprenticeship learning by "seeing patients in the ward" suffers from a considerable element of chance. Once disciplines have defined core curricula, produced texts accordingly (or computer programmes), and set examinations congruent with these goals, then all that is required is monitoring to ensure that the relevant areas have been covered.

Students should be assigned to teachers or tutors who would be required to check on their progress from time to time and feed back progress reports, both to the students and the departments. This would be facilitated by check lists, log books, or even signed-up "achievement schedules".

RECOMMENDATION 11

APPROPRIATE ASSESSMENT VERSUS TRADITIONAL EXAMINATIONS

It is recommended that appropriate objective and inter-disciplinary forms of assessment be instituted.

The crucial nature of assessment and examinations is well known and the motivation is powerful. Newble & Jaeger[14] demonstrated the effects of this influence on student learning.

If medical educators wish the emphasis to be less on factual knowledge and more on skills and attitudes, then they must understand the role of examinations in driving student learning in these directions. Examinations need to be appropriate, valid and reliable.

Not only do the types of examinations need to be thought through, but the timing, the quality of the examiner, the bias of the "halo effect" of in-course assessment appreciated and the stress of clinical examinations understood. Medical teachers have to understand not only the principles of examinations, but also the objectivity of marking and assessing.

If more than lip service is going to be paid to horizontal integration, then examinations, especially in the clinical years, need to be inter-disciplinary and the examiners need not

necessarily be experts in the field in which they are testing the student. It will be more important to have trained examiners than esoteric experts searching for detail.

Formative assessment can readily be deduced from peer group learning experiences, such as the group OSCE or project work. Students carrying out these tasks generally maintain high standards and, because they do not enjoy embarrassing themselves, they seldom let their colleagues down. Use should be made of these attributes and opportunities afforded for their development.

An inter-disciplinary OSCE at the end of the students' clinical training would be an illuminating and interesting experiment for teachers and students.

CONCLUSIONS

There are two aspects of medical education in which reform takes place.

The first is the curriculum or intellectual aspect. This incorporates the extrinsic constraints or strategies that the medical school and each department sets out to achieve. It is also the domain in which most research in medical education is focussed. The concepts of innovative Problem-Based learning, with Community-Orientation, are the best examples of such reforms.

The second is staff development leading to change in the way that the teachers motivate learning in their students. Unless the expertise exists to teach professionally, then even the most careful strategies will remain ineffectual.

The fundamental purpose of educating medical students by medical schools must not become overtaken by research, service or administration. To educate well takes more

than facts, reputation and available material. It takes teachers and students who understand and value the teaching / learning process.

The medical schools in Southern Africa, with the exception of the University of Transkei, are set in the traditional mould. The debate needs to be opened in this country as to whether innovative approaches such as Problem-Based Learning, Co-operative Learning and Self-Directed Learning should be adopted - or not.

Medical schools have to rededicate themselves to their primary teaching function by requiring professionalism from their teachers. As Fraser[15] puts it, "If medical academic staff are to be involved in teaching, they have an obligation to become educators, not just experts in content".

The medical health care demands of the 21st Century will have to be met by graduates that are being trained at present, and now seems a particularly pertinent time in our country's history to take action. As Professor Henry Walton, Chair of the World Federation for Medical Education, and University of Cape Town alumnus, stated in his publication concerning the 1993 World Congress:

> "The impetus for change in Medical Education is now more powerful than it has been since early this century and is in a remarkable state of transition"[16].

This dissertation has been, for the author, the culmination of an idea, an ideal and a dream - to devote time to Medical Education theory and document its practice. In that way, an endpoint has been achieved. But equally it is the start of a process to develop ideas, concepts and hopes that challenge Medical Education in South Africa. These challenges are going to be considerable and resourcefulness will be required.

This dissertation is a step in the continuum.

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THE LIGHTER SIDE OF AN MPhil

Having four months of leave to write a Masters dissertation is a bit like pregnancy :

There are quite a lot of questions you ask yourself about your own productive ability or fitness to produce/reproduce

It never happens at the "right" time

It makes you sick in the beginning

You really think about aborting it

You become emotionally labile

When people ask you how you are, or what you are doing - you tell them!

You cannot hold down a conversation for ten minutes without the subject coming up

You worry about whether it is going to be alright

It's exciting, intriguing and frightening

There are awful moments (hard drive crash - 22 April 1993)

The delivery is a terrifying thought

Thank God for Supervisors (Obstetricians)

You experience a vague feeling that this may be the start of a whole lot of exciting trouble

It seems to go on forever

You think you are the first person this has ever happened to

But, when all is said and done, you learn about process, yourself, and it forces contemplation beyond yourself, but including yourself

You believe your insights are amongst the most profound ever thought - which, for you, they are

As a male Obstetrician, highly unlikely to achieve the exalted state of pregnancy, I offer this analogy unencumbered by the facts.