The educational challenges facing community-based education in South Africa

In South Africa, community-based medical education (CBME), will be concerned with providing relevant undergraduate teaching for the South African context. This means establishing an effective teaching and learning environment which equips students to experience and relate academic teaching to real-life health problems in their own communities. It is envisaged that this new educational environment will initially be established as a 'twin track' alongside the presently existing 'main track' of medical education. The mainstream medical track participates by contributing its knowledge, expertise and resources to this innovation.

Apart from curricular and methodological challenges, CBME faces the challenge of developing sites of learning 'in and about the community' (1). Developing an understanding of the social context as well as the rationale for CMBE are additional key concerns for CBME.

This article will primarily focus on the educational context which pertains to CBME. The experiences of the Academic Support Programme (ASP), the Wits Integrated Study Programme for Engineering (WISPE) and the Indonesian Educational Bureau model will be discussed.

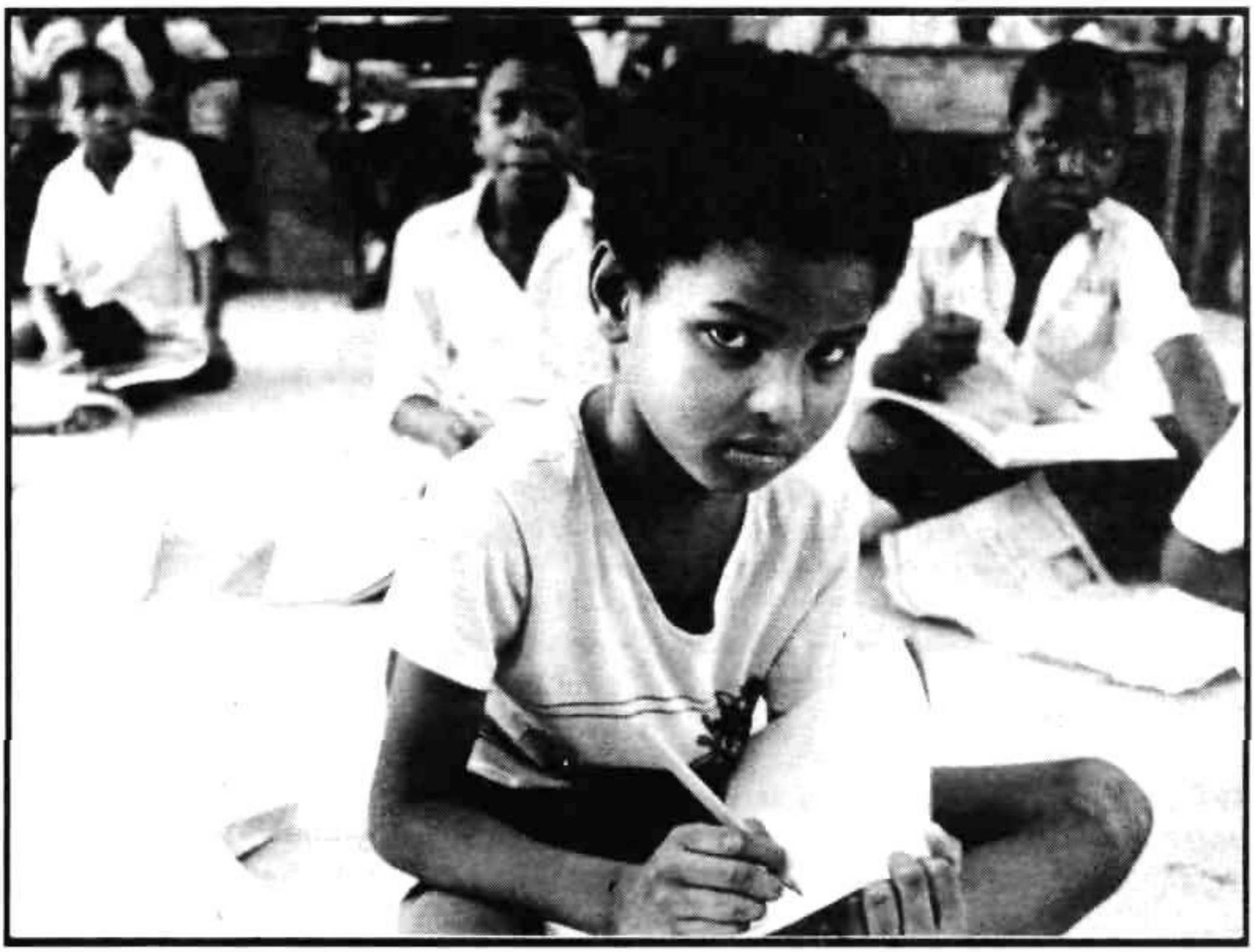
Background

If CBME realises its aims, a large proportion of students, in all likelihood, will come primarily from Department of Education and Training (DET) schools. Apartheid education has, broadly speaking, resulted in stifling the potential and the rights of the learners. It has been particularly effective in promoting rote-learning and unquestioning academic attitudes; education is viewed as absorbing a set of truths.

This applies especially in black schools where:
- the majority of teachers are unqualified;
- there are high pupil-teacher ratios;
- there are inadequate facilities and shortages of basic books;
- science is taught as a body of fixed concepts and facts;
- virtually no practical, hands-on experience (lab work) is possible;
- most teachers are second or third language speakers of English;
- teacher authority is used to control rather than to promote learning;
- the syllabus is often not covered owing to political disruptions or lack of teachers.

This is by no means a full catalogue but gives us an idea of the poverty of instruction. The result is that matric results are generally acknowledged as unreliable criteria for the selection of black students.

It is, therefore, not surprising that successful black matriculants often crash academically when they enter into the university learning environment. Their learning histories militate against a deep-level understanding of the material. Cognitively, there are inadequate 'hooks' on which to hang new material since DET practices have encouraged them to devalue and negate their own knowledge and experiences.



Apartheid has resulted in a maldistribution of resources within education. Many black schools are poorly equipped and the teachers are often unqualified

In addition, students find it difficult to carry out some of the higher-order skills such as formulating hypotheses, developing logical reasoning, drawing out inferences, making predictions, bringing background knowledge to bear on their work and arriving at their own conclusions, all of which are common requirements in tertiary education.

In an evaluation of the ASP tutoring scheme for medical students, it was found that 87,7% of the second language students found it problematic to make sense of the learning processes (2). This was in comparison with 40% of first language English speakers.

The major problems documented were:

"- inefficient studying, no exam technique, no coping skills, poor study habits;
- poor time management, pressure and volume of work;
- demotivation and lack of confidence;
- lack of understanding, lack of ability to know their own strengths and weaknesses;
- difficulty in applying theory to practice, distinguishing what is important and what isn't".

Although most white schools in South Africa are relatively well-equipped, the students are also taught rote learning and unquestioning attitudes

White students generally arrive with a fairly adequate knowledge base from which to build and refine academic concepts and skills, even though they, too, have been subjected to apartheid education, albeit on 'the other side'. They come from comparatively well-equipped schools and find themselves in a comfortable, relatively familiar university context which is often a natural extension of all they have been used to. They encounter a whole institution that caters for their needs.

It is only in recent years that large numbers of black students have been admitted to the historically white universities. For historical and political reasons, our present university structures are not geared to fulfill the role of providing an appropriate teaching and learning environment for students of a variety of educational and class backgrounds. The challenge for universities is to develop a perspective which includes a firm commitment to the needs of a changing learner population, accompanied by the professional competence to address differing needs.

At present, they find themselves hopelessly under-prepared as far as admissions criteria, the learning problems and financial and accommodation issues are concerned.

In fact, the present retention and pass rates of black students are an indictment of the university's present structures.

Clearly, a new vision, policies and implementation strategies which have long and short-term goals are required. The CBME twin-track approach is one strategy. Broader issues and the paradigm within which universities presently operate (3), however, will still need to be detailed and challenged.

Lessons and perspectives

Some of the pertinent issues facing institutional change are to be found in the experience of the Academic Support Programme (ASP). ASP has provided support for black students at the white universities for eight years and has developed invaluable insights into the academic challenges facing South African universities today.

The ASP's main contribution has been to develop separate study skills/language courses or content/approach support programmes that seek to help students cope with their studying problems. This was a viable response in the early days, but now has shortcomings as the intake of black students increases.

A truly successful teaching programme (one that takes into account the context, the learners and appropriate methodology) does not require an independent programme. Rather, it should provide an integrated curriculum. Eight years of experience in the area of study skills have shown us the limitations of separate study skills courses. Although the study skills courses can offer psychological relief and some general advice, the problems students face generally are rooted in the original teaching/learning environment. It is here that learning criteria must be made explicit and be internalised and processed by teacher and learner.

The 'Academic Support Phase Two Programme' reflects this understanding. The central role of ASP staff, in the future, is defined as devoting an increasing proportion of their time to consultative work and to the dissemination of ideas and practices in the teaching and wider support of disadvantaged students. The initial attempts made by ASP (phase one) were separated from the curriculum itself and support skills were not transferred to the teachers. Having learned from this, phase

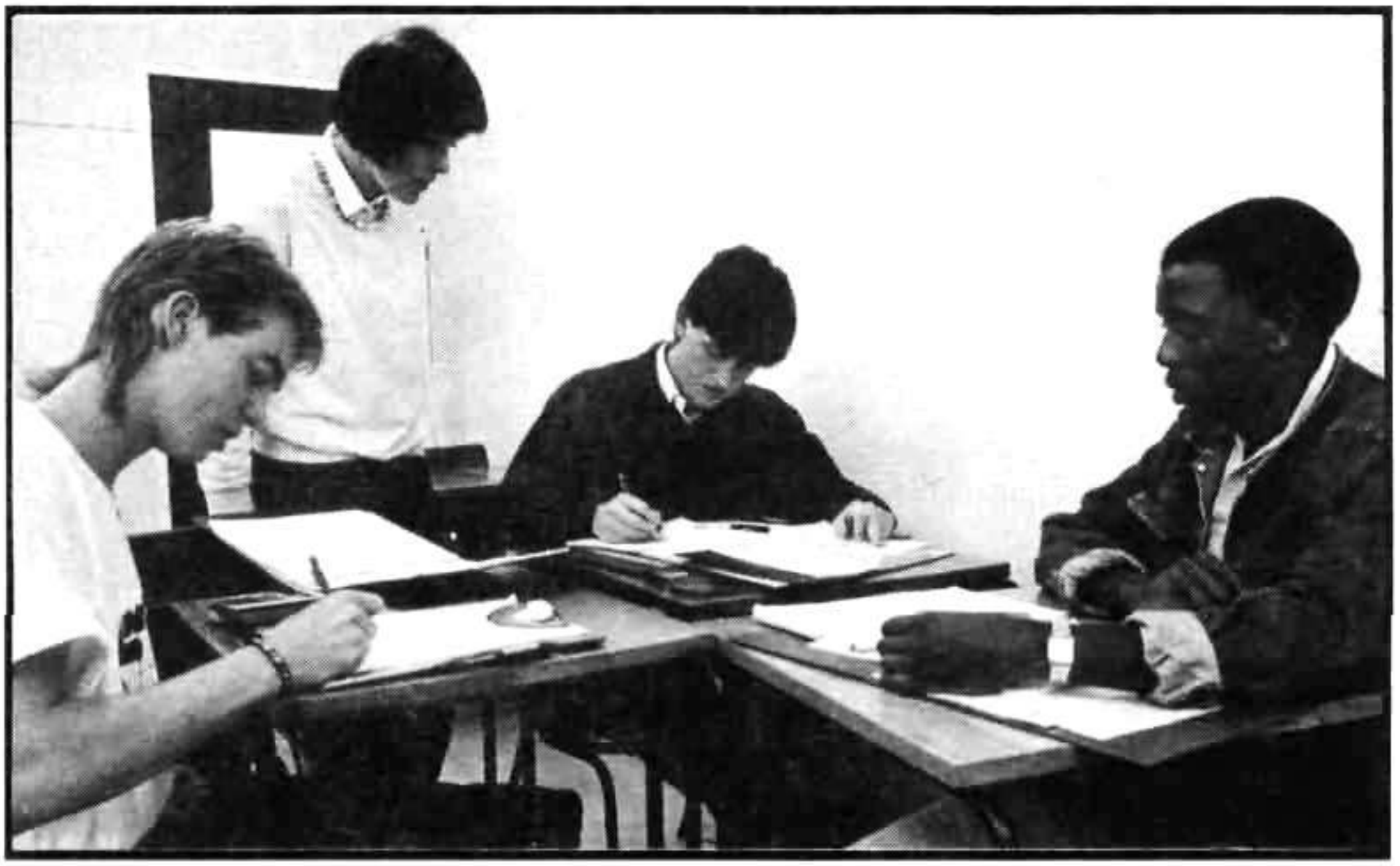
two was instituted in which the support programme becomes integrated into the actual curriculum and into the manner in which it is taught.

It was this type of approach that enabled ten Indonesian medical schools to change their curriculum in three years. At each of these medical schools, an educational bureau was set up to look into all aspects of teaching and learning, content and method. The question of strategy, of establishing educational priorities, securing resources, involving and passing on skills to mainstream staff, and of team work were all contributing factors to the curriculum change. This was initiated and effected by 'a very small nucleus of teaching staff who were deeply interested in, or had a sophisticated understanding of educational science'. It is felt that ASP potential can be exploited in a similar way in our context.

Underlying principles

The following lessons should be taken into account when evaluating any curriculum innovation:

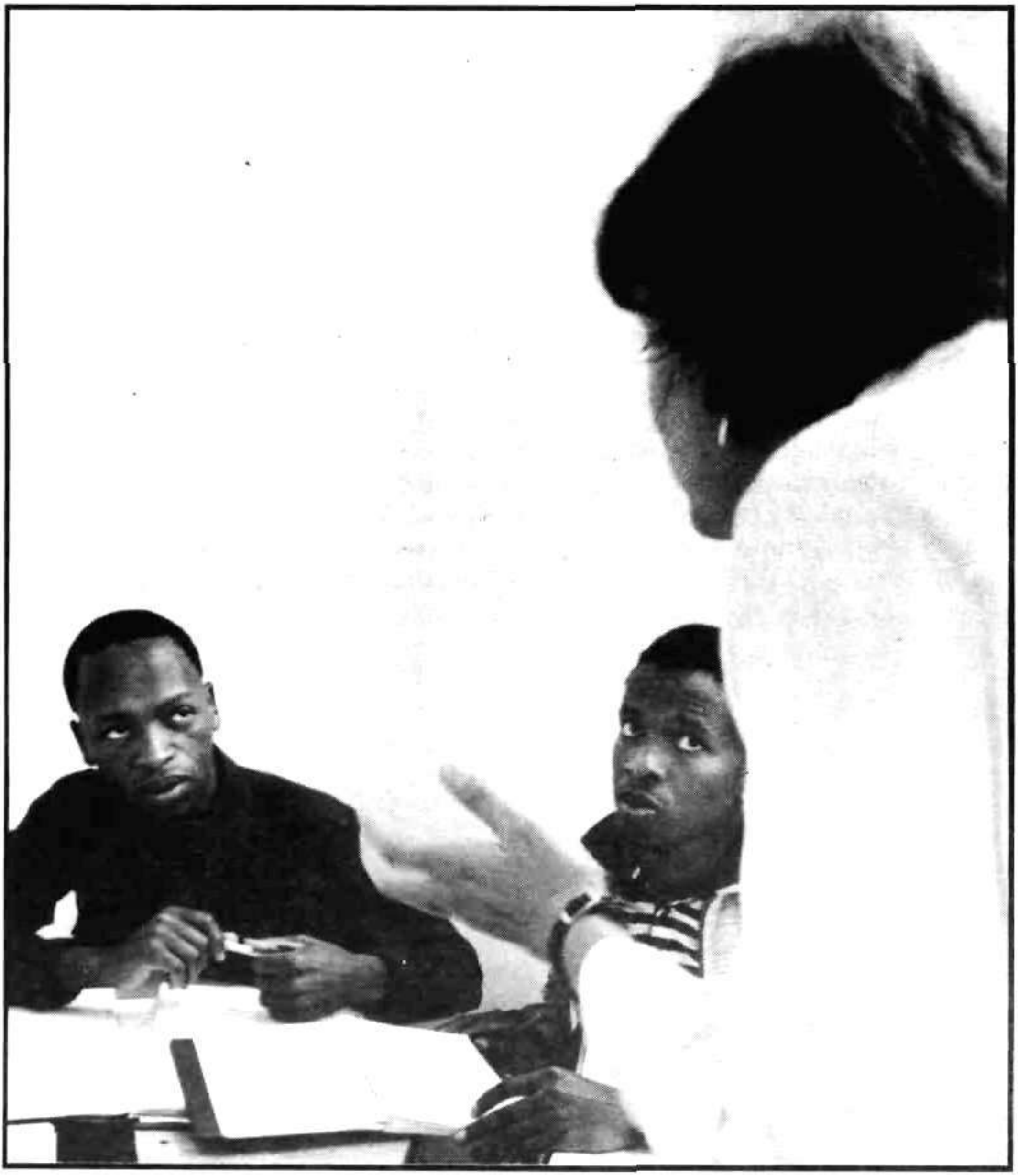
Firstly, "the fundamental test of an innovation strategy is: does it locate the responsibility for innovation with the main body of the faculty, or does it relieve them of this 'burden' by locating the responsibility with 'support services' or with a group of non-representative teachers who have been foolish enough to risk their careers by applying their talents to the problems of teaching and learning?" (4).



An ASP tutorial group - the programme encourages study skill training to be integrated into the curriculum rather than existing as a separate programme

Secondly, "the teaching faculty should not be handed a finished curriculum. A critical element in innovation is to involve, from the very beginning, those who will implement the innovations. It is the individual teacher who teaches the students (not the curriculum committee!)" (4).

This is of particular importance in working for change in large institutions.



Lectures act as the backdrop of information while tutorials serve as problem-solving tools to facilitate a deeper grasp of the underlying principles

Work in progress

These principles informed the experiences of the Wits Integrated Support Programme for Engineering students (Wispe), a joint project for ASP and the Faculty of Engineering. The programme enables students to achieve mainstream credits whilst providing them with support of a problem-solving nature over the first three years of the Engineering curriculum. Structural re-organisation of the curriculum was necessary to allow for the incorporation of problem-solving courses. In effect, the four year Engineering curriculum has been spread over five years, thereby allowing students voluntarily to join a track which takes their cognitive, academic and personal needs into account. The following experiences are now presented as the core insights gained on the programme.

Structures

The important aspect of this programme has been the location of the responsibility of addressing the needs of black students firmly in the hands of the faculty but involving the critical experience and expertise of the ASP. In order to operationalise the collaborative venture, structures had to be set up at the highest level to facilitate and exchange developments on the project and arrive at decisions. Other advances to the location of educational projects in this established faculty include:

- mainstream staff are sensitised to the characteristics of the students' learning histories and the methods required to orientate a faculty to deal with them. A process is thereby set in motion so that the faculties involved in the teaching, learning and assessment context become natural;
- mechanisms are established for the smooth integration of the project within the faculty;
- it is possible to demonstrate to wider strata of staff and students that the existing system can be open to change. In short, this kind of transitional approach empowers the main body of staff to effect change in the curriculum, in methodology and attitude.

Psychological implications

Any attempt to address the needs of black students within a predominantly white university, no matter how the faculty integrates this effort within its own parameters, is bound to be perceived by students as the unwillingness of the system to change. However, even if the present pressure of "Africanising our Universities" (3) was translated into practice, we have to recognise that it entails the setting in motion of a process and that means work has to be started with present staff and

within present structures.

In the context of this process, a separate or parallel track will still be perceived by students as the unwillingness of the system to change. Any solution that visibly identifies the participants as a separate group will have psychological repercussions as, coming to terms with pressing academic needs at the cost of self-image, is unfortunately, often a consequence of the South African reality. This has been the Wispe experience, although it *is* a formative and changing process. Our second year students, this year, have 'owned' Wispe and emphatically stated that they are getting a better deal as far as the quality of learning is concerned. They are the ones who are passing whereas those who looked down on them, black and white, are struggling. By creating small opportunities which seek to address present inequities, both planners and clients become involved in a dilemma of contradictory pressures, a conflict that can't be resolved in micro terms. Therefore, positive discrimination is important but limited.

Teaching

Educational research has established two important principles which are particularly pertinent for us:

- "The most important factor influencing learning is what the learner already knows" (5).
- "When a person actively constructs knowledge he does so by relating incoming information to a previously acquired psychological frame of reference. This frame of reference allows the individual to go beyond the information given" (6).

Simply stated, the learner brings his/her worldview, perceptions and understanding to bear on his/her everyday and academic learning. The role of the educator is to provide a framework which allows this to be activated. The problem-based learning method utilised in the Medical Faculty at the University of Newcastle, Australia, not only introduces the medical students to the process of clinical reasoning but also enables the definition and structuring of their own learning in a peer group setting (7).

How can these principles be applied in practice?

The choice of a problem that allows the full engagement of the student is vital to the gains scored in learning. Our experience has borne out Bruner's point that "understanding of fundamentals makes a subject more comprehensible" and that "the mastery of the fundamental ideas of a field involves not only the grasping of general principles, but also the development of an attitude toward learning and inquiry, toward guessing and hunches, and toward the possibility of solving problems on one's own" (7). It is possible to delineate key components of the

curriculum and 'teach' them in an innovative way.

By implication, a learner-centred approach has to be adopted, one which places greater emphasis on process than product.

Our tutors play a key role as listeners to the spoken learning processes, thereby gaining a reliable understanding of each student's knowledge base. The lectures act as a backdrop of information whilst the tutorials serve as problem-solving tools to facilitate a deeper grasp of the underlying principles.

The students are expected generally to work in small groups often teaching each other, and articulating their level of understanding, their difficulties and worldviews. Of late it has been encouraging to see the extension of peer group learning taking place outside the normal academic hours.

This type of approach means that "the primary role of the teacher is making sure that the correct resources are available at the right time" (8). This sounds simpler than it actually is. In reality it requires experienced, often exceptional, staff who have a fine understanding of the discipline and more importantly, have the personality and educational know-how to mediate with a heterogeneous, ability learner group. Such staff are able to offer a theoretical perspective for their educational strategies. They are, however, rare in universities and the question is how to make the best strategic use of them. For an excellent exposition of learning theory as it impacts on medical education, see Kriel (10). It is interesting to note that tutors on the medical tutorial scheme cited their "lack of teaching ability" as a problem (2).

The methodology of teaching must take into account the problems associated with learning a subject that is not taught in the students' first language

Theoretically and, to a limited extent, practically Wispe and ASP seek to address this problem of staff development by involving faculty staff in a renewed look at the teaching and learning processes. The development of a core group interested in educational science at faculty level is a critical long-term investment. This is the most effective means by which the subject-specialist and the education-specialist divide can be healed. A demanding task has been posed for the new kind of academic tutor. What is required is the recognition of the cognitive demands of the particular discipline and the ability to convey these to learners in an interactive, meaningful way.

Language

The language needs of second language speakers have been well documented internationally and in South Africa. Language use can facilitate or block learning. Academic jargon and mystified language are common features of the lecture method and pose difficulties even for first language speakers.

The aquisition of terminology and core concepts of a discipline are also determined by the extent to which second language English speakers have been exposed to these in their own culture and environment. This is usually "acquired and assimilated from childhood, at first hand through schools, clinics, doctors' surgeries, illness or operation and treatment; and second hand through films, radio, television, books, newspapers and advertisements. Consequently, would-be doctors and nurses already have a firm and fairly broad foundation on which to build when they begin their studies" (11). These exposures through health care provision, media and culture may be limited in black communities in apartheid South Africa and the familiar vocabulary of the medical world should not be taken for granted.

Additionally, many of the linguistic features of English do not exist in the vernacular languages. There is also a discrepancy in the development of scientific terms in South African vernaculars and English. Linguistically, we need to be better informed as to where students are coming from. Moreover, each specialist discipline has its own linguistic characteristics and "communications in science is characterised by a specialist language and specialist ways of thought" (8).

These often remain inexplicit to students who are forced to adopt memorisation techniques in the absence of linguistic competence and at the expense of understanding.

Since most science and applied science academics in South Africa were taught in and speak English as a first language, they are not trained to recognise and deal with second language problems. Emphasis is placed on speaking and developing thought in the English language. The Arts/Science divide and the tendency towards increasing specialisation at university level exacerbates the inability of academics to meet the needs of second language speakers. These issues were addressed by:

- Team teaching, whereby the subject specialist and the language specialist work jointly in the tutorial;

- setting integrated problem solving tasks which necessitate the active use of the language of the discipline;

It has been necessary to motivate students to:

- give oral presentations, having solved specific problems;
- relate language work to hands-on experience, often exposing them to the relevant technology;
- probe for meanings of everyday, scientific and semi-technical words.

Medical education must train graduates to serve the health needs of the majority of South Africans

Conclusion

Clearly, the educational context pertaining to CBME is governed by exciting possibilities and challenges but also by real constraints.

It has been the line of argument that the primary role of an African university should be exploited to serve the wider society (9). This means ensuring that undergraduate teaching is relevant for the South African context, especially where

the basic needs such as health are concerned. The community role of universities has always been actively discussed in African universities. Where this has been implemented, it has been found that it has been difficult to promote high quality teaching and real community involvement. The tendency has been to create separate units which has often resulted in the main structures remaining intact (9). Political realities and cost-effectiveness have also disallowed extensive community links and development. There are small but significant exceptions, though, as demonstrated by projects like the Community Education Project for Soweto Youth (12).

"The social purpose of a university in Africa differs from its traditional social purpose in Europe. In Europe, universities have stood for continuity and conservation; in Africa, universities are powerful instruments for change" (9). In South Africa, it can be argued that the potential is even greater. It is up to educationalists to make their contribution in the crucial transition period.

The workshop to be held in December demonstrates that there is a will for change in medical education. Existing health bases offer enormous ground for effecting community participation in the mission of supporting the emergence of a new kind of medical graduate, one who is attuned, trained and willing to be part of a health team in the communities where they are most needed.

Thus, CBME, within a twin track programme, could play a vital role in forging new directions in health. This is provided that it does not remain as a separate track, but rather influences and changes the main track to become more appropriate.

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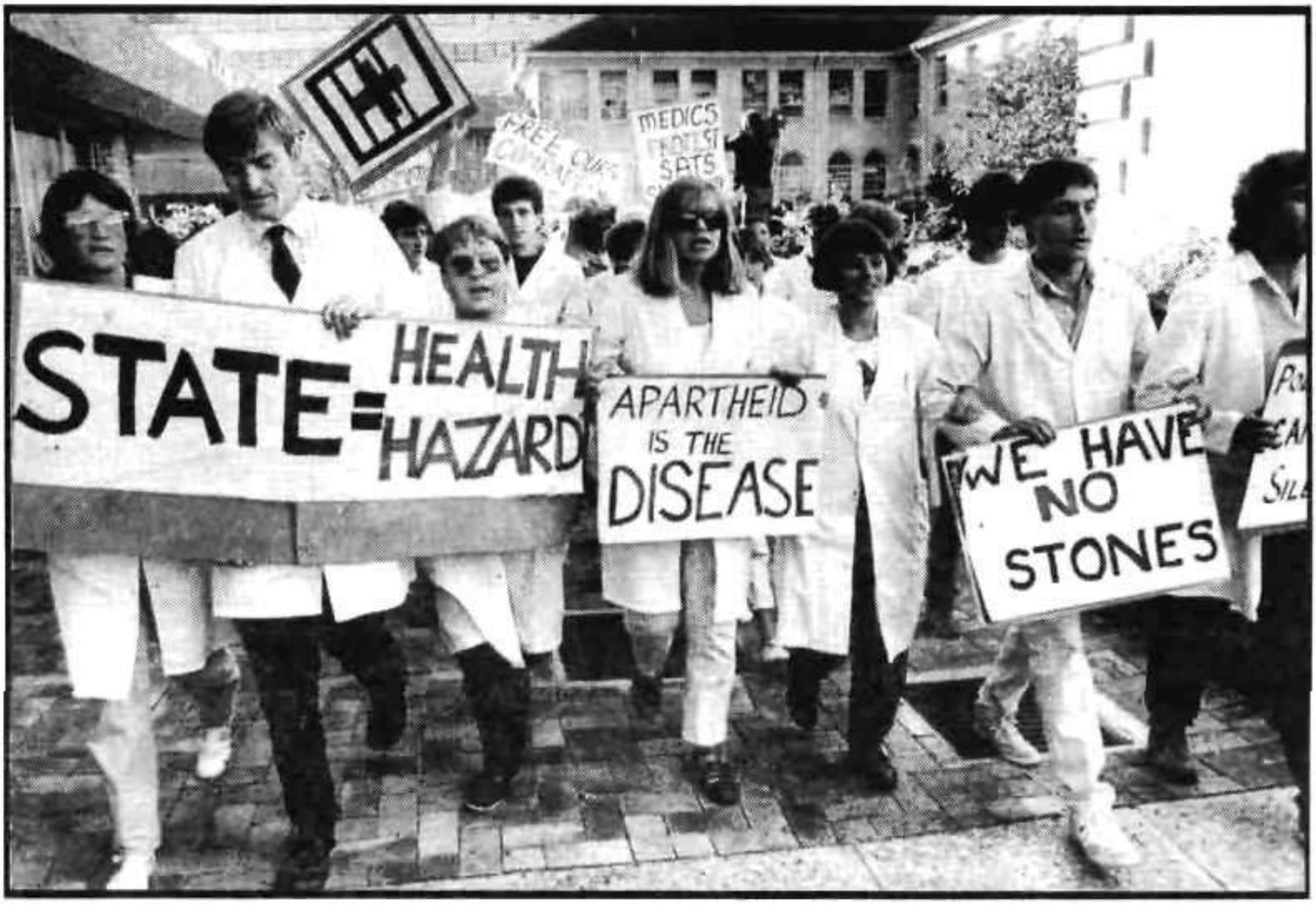

Medical universities can be powerful instruments for change both within the direction of education received as well as within society at large